



**California Department of Education
Assessment Development &
Administration Division**



California Assessment of
Student Performance and Progress

**California Assessment of Student
Performance and Progress**

**California Alternate Assessment for
English Language Arts/Literacy and
Mathematics Technical Report**

2017–18 Administration

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Acronyms and Initialisms Used in the *California Alternate Assessments for English Language Arts/Literacy and Mathematics Technical Report*

Term	Definition
1PL	one-parameter logistic
1PL-IRT	one-parameter item response theory
AA-AAS	alternate achievement standards
AERA	American Educational Research Association
AIR	American Institutes for Research
AIS	average item score
APA	American Psychological Association
CAA	California Alternate Assessments
CAASPP	California Assessment of Student Performance and Progress
CALPADS	California Longitudinal Pupil Achievement Data System
CalTAC	California Technical Assistance Center
CCR	<i>California Code of Regulations</i>
CCSS	Common Core State Standards
CDE	California Department of Education
CDS	county/district/school
CI	confidence interval
Connectors	Core Content Connectors
CR	constructed response
CSEM	conditional standard error of measurement
DFA	<i>Directions for Administration</i>
DIF	differential item functioning
DLM	Dynamic Learning Maps
EC	<i>Education Code</i>
EL	English learner
ELA	English language arts/literacy
eSKM	Enterprise Score Key Management
ETS	Educational Testing Service
EUs	essential understandings
GPCM	general partial credit model
HOSS	highest obtainable scale score
IDEA	Individuals with Disabilities Education Act
IEP	individualized education program
IRT	item response theory
ISAAP	Individual Student Assessment Accessibility Profile
LCI	Learning Characteristics Inventory
LEA	local educational agency
LEP	limited-English-proficient
LOSS	lowest obtainable scale score
LPF	Learning Progression Framework

Term	Definition
MC	multiple choice
MH DIF	Mantel-Haenszel differential item functioning
MST	multistage test
NCME	National Council on Measurement in Education
NCSC	National Center and State Collaborative
OIB	ordered item booklet
ORS	Online Reporting System
OTI	Office of Testing Integrity
PLD	performance level descriptor
QA	quality assurance
QC	quality control
SBE	State Board of Education
SD	standard deviation
SEM	standard error of measurement
SMD	standardized mean difference
SRC	Student Response Check
SSC	Survey of Student Characteristics
SSPI	State Superintendent of Public Instruction
STAIRS	Security and Test Administration Incident Reporting System
TCC	test characteristic curve
TDS	test delivery system
TIF	test information function
TOMS	Test Operations Management System
USC	United States Code

Chapter 1: Introduction

1.1. Background

In October 2013, Assembly Bill 484 established the California Assessment of Student Performance and Progress (CAASPP) as the new student assessment system that replaced the Standardized Testing and Reporting program. The primary purpose of the CAASPP System of assessments is to assist teachers, administrators, and students and their parents/guardians by promoting high-quality teaching and learning through the use of a variety of item types and assessment approaches. These tests provide the foundation for the state's school accountability system.

The online California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics were administered operationally during the 2017–18 CAASPP administration. This assessment is for students whose individualized education program (IEP) teams have determined that a student should take the CAA (CDE, 2018b). (Refer to the participation criteria in subsection [2.4 Participation](#) for more information.) Note that this technical report focuses on CAAs for ELA and mathematics and *not* the CAA for Science, which is reported upon separately.

During the 2017–18 administration, the overall CAASPP System had the following components:

- Smarter Balanced assessments and tools for the general student population:
 - Summative Assessments—Online assessments for ELA and mathematics in grades three through eight and grade eleven
 - Interim Assessments—Optional resources developed for grades three through eight and grade eleven designed to inform and promote teaching and learning by providing information that can be used to monitor student progress toward mastery of the Common Core State Standards (CCSS) that may be administered to students at any grade level
 - Digital Library—Tools, lesson plans, and practices designed to help teachers utilize formative assessment processes for improved teaching and learning in all grades
- CAAs for ELA and mathematics in grades three through eight and grade eleven for students with significant cognitive disabilities
- Science assessments in grades five, eight, and high school (grades ten, eleven, or twelve; these are the California Science Test and the CAA for Science)
- A primary language assessment, the Standards-based Tests in Spanish for Reading/Language Arts, in grades two through eleven (optional for eligible Spanish-speaking English learners)
- A new primary language assessment, the California Spanish Assessment, delivered in pilot form at selected local educational agencies (LEAs), to students in grades three through eight and high school who are Spanish-speaking English learners or students seeking a measure that recognizes their Spanish reading, writing, and listening skills

More background information about the CAASPP System can be found on the CAASPP Description – *CalEdFacts* web page at <http://www.cde.ca.gov/ta/tg/ai/cefcaaspp.asp>.

1.2. Test Purpose

The purpose of the CAA is to ensure students with the most significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for postsecondary options. The CAAs for ELA and mathematics are aligned with alternate achievement standards—called the Core Content Connectors (Connectors)—that are linked to the CCSS. A Connector is a representation of the essential “core” content of a standard in the CCSS. Each content standard is assessed through the Connectors and related essential understandings (EUs). Each EU defines a basic, foundational key idea or concept based on the Connector that builds increasing understanding of the grade-level content under a three-tier structure of item complexity.

Connectors address knowledge and skills that are appropriate and challenging for the student. The student who is eligible for CAAs is learning content, linked to (and derived from) the CCSS, that appropriately breaks the standards into smaller steps.

1.3. Test Content and Design

The CAAs for ELA and mathematics are administered to eligible students in grades three through eight and grade eleven. These CAAs are delivered online through two-stage adaptive multistage testing (MST). A student’s final score is calculated by combining the student’s performance on items from both stages.

Under the MST design used for the CAAs for ELA and mathematics, sets of items or modules with varying difficulty or complexity levels are presented to match the ability of each student according to her or his performance on the previous set of test items. The primary advantage of the MST over the conventional fixed-form tests is that MST is more efficient because it uses fewer test items to achieve more precise measurement of students’ performance. In addition, by providing an ability-appropriate test, MST also encourages a student’s engagement during testing, particularly for students with significant cognitive disabilities. These students represent a population with a large range of challenges and ability levels that cannot be effectively targeted by conventional fixed-form tests.

1.4. Intended Population

At each grade level, the CAAs for ELA and mathematics were administered to approximately 5,000 students during the 2017–18 CAASPP administration. All students enrolled in grades three through eight and grade eleven whose IEP designates the use of alternate assessments are required to take part in the CAAs (*California Code of Regulations*, Title 5 [5 CCR] Education, Division 1, Chapter 2, Subchapter 3.75, Article 1, Section 851.5[c]). For students with significant cognitive disabilities, the decision whether to administer the Smarter Balanced Summative Assessments or CAAs is made by their IEP team. Parents/Guardians may submit a written request to have their child opted out from taking any or all parts of the Smarter Balanced Summative Assessments or, as designated, the CAAs. Only students whose parents/guardians submit a written request may opt out of taking the tests (*Education Code [EC] Section 60615*).

English learners (ELs) who are in their first 12 months of attending school in the United States are exempt from taking the ELA portion of the assessment. ELs are defined as follows:

“English learner students are those students for whom there is a report of a primary language other than English on the state-approved Home Language Survey **and** who, on

the basis of the state approved oral language (kindergarten through grade twelve) assessment procedures and literacy (grades three through twelve only), have been determined to lack the clearly defined English language skills of listening comprehension, speaking, reading, and writing necessary to succeed in the school’s regular instructional programs.”¹

EL students within their first 12 months of enrollment in a U.S. school may also participate in the ELA assessment if their parents/guardians elect to do so. These test takers are included in the calculation of the percent of students tested, but their scores are excluded from all aggregate calculations.

1.5. Intended Use and Purpose of Test Scores

The results of tests within the CAASPP System, including the CAAs for ELA and mathematics, are used for two primary purposes as described in *EC* sections 60602.5(a) and (a)(4). (Excerpted from the *EC* Section 60602 web page at http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=EDC&division=4.&title=2.&part=33.&chapter=5.&article=1 [outside source].)

“60602.5(a) It is the intent of the Legislature in enacting this chapter to provide a system of assessments of pupils that has the primary purposes of assisting teachers, administrators, and pupils and their parents; improving teaching and learning; and promoting high-quality teaching and learning using a variety of assessment approaches and item types. The assessments, where applicable and valid, will produce scores that can be aggregated and disaggregated for the purpose of holding schools and local educational agencies accountable for the achievement of all their pupils in learning the California academic content standards.”

“60602.5(a)(4) Provide information to pupils, parents or guardians, teachers, schools, and local educational agencies on a timely basis so that the information can be used to further the development of the pupil and to improve the educational program.”

Sections 60602.5(c) and (d) provide additional information regarding intent and context for the system of assessments:

“60602.5(c) It is the intent of the Legislature that parents, classroom teachers, other educators, pupil representatives, institutions of higher education, business community members, and the public be involved, in an active and ongoing basis, in the design and implementation of the statewide pupil assessment system and the development of assessment instruments.”

“60602.5(d) It is the intent of the Legislature, insofar as is practically feasible and following the completion of annual testing, that the content, test structure, and test items in the assessments that are part of the statewide pupil assessment system become open and transparent to teachers, parents, and pupils, to assist stakeholders in working together to demonstrate improvement in pupil academic achievement. A planned change in annual test content, format, or design should be made available to educators and the public well before the beginning of the school year in which the change will be implemented.”

¹“English Learner (EL) Students (Formerly Known as Limited-English-Proficient or LEP),” from the CDE Glossary of Terms web page at <http://www.cde.ca.gov/ds/sd/eb/glossary.asp>.

1.6. Testing Window

The CAAs for ELA and mathematics for grades three through eight and grade eleven are administered within a testing window pursuant to 5 *CCR*, sections 855(a)(1), 855(a)(2), 855(b), and 855(c). The testing window begins on the day of completion in which 66 percent of the instructional year is completed. The last possible testing date during the 2017–18 school year was July 16, 2018.

Similar to other CAASPP assessments, the CAAs for ELA and mathematics are untimed for test takers. This assessment is administered individually, and testing time varies from one student to another, on the basis of factors such as the student’s response time and attention span. A student may be tested with the CAAs for ELA and mathematics within the LEA’s testing window over as many days as required to meet a student’s needs (5 *CCR*, Section 855[a][3]).

1.7. Significant Developments for the CAAs in 2017–18

Several significant developments occurred for the 2017–18 administration.

1.7.1. Update to Testing Availability Start Date

The grade eleven test administration for CAAs for ELA and mathematics was set up using the same criteria as the test administration for grades three through eight. The available testing window began on the day in which 66 percent of a school’s or track’s annual instructional days were completed. Additionally, the selected testing window for all assessments contained a minimum of 25 instructional days.

1.7.2. Additional Embedded Field Test Item and Revised Item Development Specifications

The number of field test items in each operational test version was increased from three to four. The specifications for item development were revised to reduce the text (language) complexity of item content.

1.7.3. Revised Training Test

The training test items were revised to reduce the complexity of text (language) in the items and associated *Directions for Administration*.

1.7.4. Updated Accessibility Resources

The following new and updated accessibility resources were available for the CAAs for ELA and mathematics:

- Universal tool: line reader (embedded)
- Designated supports: Mouse pointer (embedded) and amplification (non-embedded)
- Accommodation: word prediction (non-embedded)

1.8. Groups and Organizations Involved with the CAAs

1.8.1. State Board of Education (SBE)

The SBE is the state agency that establishes educational policy for kindergarten through grade twelve in the areas of standards, instructional materials, assessment, and accountability. The SBE adopts textbooks for kindergarten through grade eight, adopts regulations to implement legislation, and has the authority to grant waivers of the *EC*.

In addition to adopting the rules and regulations for itself, its appointees, and California's public schools, the SBE also is the state educational agency responsible for overseeing California's compliance of the Every Student Succeeds Act and the state's Public School Accountability Act, which measures the academic performance and progress of schools on a variety of academic metrics (CDE, 2017).

1.8.2. California Department of Education (CDE)

The CDE oversees California's public school system, which is responsible for the education of more than 6,200,000 children and young adults in more than 10,450 schools.² California aims to provide a world-class education for all students, from early childhood to adulthood. The CDE serves the state by innovating and collaborating with educators, school staff, parents/guardians, and community partners which together, as a team, prepares students to live, work, and thrive in a highly connected world.

Within the CDE, it is the Performance, Planning, and Technology Branch that oversees programs promoting innovation and improving student achievement. Programs include oversight of statewide assessments and the collection and reporting of educational data (CDE, 2018c).

1.8.3. California Educators

A variety of California educators, including teachers experienced in teaching students with cognitive disabilities and school administrators, who were selected based on their qualifications, experiences, demographics, and geographic locations, were invited to participate in the entire CAA assessment development process. California educators participated in tasks that included defining the purpose and scope of the assessment, assessment design, item development, standard setting, score reporting, and scoring constructed response items.

1.8.4. Contractors

1.8.4.1. Educational Testing Service

The CDE and the SBE contract with Educational Testing Service (ETS) to develop, administer, and report results of the CAAs. As the prime contractor, ETS has the overall responsibility for working with the CDE to implement and maintain an effective assessment system and to coordinate the work of ETS with its subcontractors. Activities directly conducted by ETS include but are not limited to the following:

- Providing management of the program activities
- Supporting and training counties, LEAs, and direct funded charter schools
- Providing tiered help desk support to LEAs
- Developing all CAA test items
- Constructing, producing, and controlling the quality of CAASPP test forms and related test materials, including grade- and content-specific directions for administration
- Hosting and maintaining a website with resources for LEA CAASPP coordinators

² Retrieved from the CDE Fingertip Facts on Education in California – *CalEdFacts* web page at <https://www.cde.ca.gov/ds/sd/cb/ceffingertipfacts.asp>

- Developing, hosting, and providing support for the Test Operations Management System (TOMS)
- Processing student test assignments
- Producing and distributing score reports
- Developing a score reporting website
- Completing all psychometric procedures

1.8.4.2. American Institutes for Research (AIR)

AIR is the subcontractor to ETS for the CAASPP System of online assessments. Activities conducted by AIR include

- providing the AIR proprietary test delivery system (TDS), including the Student Testing Interface, Test Administrator Interface, secure browser, and practice and training tests;
- hosting and providing support for its TDS and the ORS, a component of the overall CAASPP Assessment Delivery System;
- scoring machine-scorable items; and
- providing Level 3 technology help desk support to LEAs for technology issues directly related to the TDS or ORS.

1.9. Systems Overview and Functionality

1.9.1. Test Operations Management System (TOMS)

TOMS is the password-protected, web-based system used by LEAs to manage all aspects of CAASPP testing. TOMS serves various functions for the CAAs for ELA and mathematics, including but not limited to the following:

- Managing test administration windows
- Assigning CAA test examiner user roles
- Managing student test assignments and accessibility resources
- Viewing and downloading reports
- Providing a platform for authorized user access to secure materials such as CAA *Directions for Administration*, student data and results, CAASPP user information, and access to the *CAASPP Security and Test Administration Incident Reporting System* form and the Appeals module

TOMS receives student enrollment data and LEA and school hierarchy data from the California Longitudinal Pupil Achievement Data System (CALPADS) via a daily feed. CALPADS is “a longitudinal data system used to maintain individual-level data including student demographics, course data, discipline, assessments, staff assignments, and other data for state and federal reporting.”³ LEA staff involved in the administration of the CAAs—such as LEA CAASPP coordinators, CAASPP test site coordinators, and test examiners—are assigned varying levels of access to TOMS. For example, only an LEA CAASPP

³ From the CDE California Longitudinal Pupil Achievement Data System (CALPADS) web page at <http://www.cde.ca.gov/ds/sp/cl/>.

coordinator is given permission to set up the LEA's test administration window; a test examiner cannot download student reports. A description of user roles is explained more extensively in the *2017–18 CAASPP Online Test Administration Manual* (CDE, 2018a).

1.9.2. Test Delivery System (TDS)

The TDS is the means by which the statewide online assessments are delivered to students. Components of the TDS include

- the Test Administrator Interface, the web browser–based application that allows test examiners to activate student tests;
- the Student Testing Interface, on which students take the CAAs for ELA and mathematics using the secure browser and with assistance from the test examiner as needed; and
- the secure browser, the online application through which the Student Testing Interface may be accessed. The secure browser prevents students from accessing other applications during testing.

1.9.3. Practice and Training Tests

Practice tests for each individual grade and content area and a training test suitable for all grade levels in both ELA and mathematics were provided to LEAs to prepare students and LEA staff for the CAAs. Students, teachers, and the public may access them using a web browser.

These tests simulate the experience of the CAA online assessments and allow students and test examiners to become familiar with the user interface, item formats and functionality, available accessibility resources, and components of the TDS, as well as with the process of starting and completing a testing session. Unlike the summative CAAs for ELA and mathematics, the practice and training tests do not assess standards, gauge student success on the operational test, or produce scores.

1.9.4. Online Reporting System (ORS)

The ORS is the system used by LEAs to view preliminary student results from the CAASPP assessments. The primary purposes of the ORS are for LEAs to access completion data to determine which students need to complete testing or start testing, and for LEAs to access preliminary score reports that can provide data for schools within the LEA. Results in the ORS are preliminary and may not be used for accountability purposes.

1.10. Overview of the Technical Report

This technical report addresses the characteristics of the CAAs for ELA and mathematics administered in spring 2018 and contains nine additional chapters as follows:

- [Chapter 2](#) presents an overview of the processes involved in a testing cycle for the CAAs for ELA and mathematics. This includes item development, test construction, test administration, test participation, generation of test scores, and score reports.
- [Chapter 3](#) describes the procedures followed during item development; descriptions of various reviews (e.g., item content and bias and sensitivity reviews); and the process of item review.
- [Chapter 4](#) describes the process of test assembly, including the content being measured, the two-stage MST assessment design, as well as the content and

psychometric criteria. Also discussed are the routing rules that guided the construction of the CAAs for ELA and mathematics and the preparation of the test forms for the online multistage delivery.

- [Chapter 5](#) details the processes involved in the actual 2017–18 administration, with emphasis on efforts made to ensure the standardization of CAA online testing. It also describes the procedures followed to maintain test security throughout the test administration process.
- [Chapter 6](#) summarizes the standard-setting process that established the base year achievement level scores. Details include the achievement level descriptors, an overview of the standard setting methodology, and the process to establish the threshold scores that define the score ranges for each achievement level for the CAAs for ELA and mathematics. These standard-setting processes were based on student testing results from the 2015–16 administration.
- [Chapter 7](#) provides information on the scoring processes and summarizes the types of scores and score reports.
- [Chapter 8](#) summarizes the statistical procedures and results for 2017–18, including
 - classical item analysis,
 - differential item functioning analysis,
 - IRT calibration, linking and scaling,
 - reliability analyses, and
 - analyses of the consistency and accuracy of the achievement-level classifications.

Chapter 8 concludes with a discussion of the procedures designed to ensure the validity of score uses and interpretations.

- [Chapter 9](#) highlights the quality control processes used at various stages of the 2017–18 CAA administration, including item development, test assignment, test administration, scoring procedures, psychometric analysis processes, and score reporting.
- [Chapter 10](#) presents historical comparisons of various test-level results for the 2015–16 (base year), 2016–17, and 2017–18 CAAs for ELA and mathematics administrations.
- [Chapter 11](#) describes analysis and administration processes and features targeted for improvement during the 2018–19 test administration.

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Chapter 2: Overview of California Alternate Assessment (CAA) Processes

This chapter provides an overview of the processes implemented by Educational Testing Service (ETS) during the full testing cycle for the 2017–18 California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics, including test development and administration, score production, and reporting. In addition, test participation, fairness, and accessibility for these CAAs are also described.

2.1. Item Development

CAAs for ELA and mathematics incorporate innovations and best practices from the recent alternate assessment initiatives on a national level, including the National Center and State Collaborative (NCSC) and the Dynamic Learning Maps (DLM). All items developed and used in the 2017–18 CAA administration are appropriate for the grade level, aligned with the Core Content Connectors (Connectors) and their essential understandings (EUs), correspond to the Common Core State Standards (CCSS), and based on the clarifications and guidelines from the Connectors derived from the CCSS.

Similar to the NCSC model, items were developed to three tiers of item complexity. Items were reviewed and revised at various stages during development by a variety of groups, including the California Department of Education (CDE), California educators, and ETS content specialists and item reviewers. Guidelines for bias and sensitivity, accessibility and accommodations, and style helped item developers and reviewers ensure consistency and fairness through the item development process. Detailed information about CAA for ELA and mathematics item development is described in [Chapter 3: Item Development and Review](#).

2.1.1. Item Format

The CAAs for ELA and mathematics include the following primary online item formats:

- **Selected response (SR) items**—Students are instructed to select one or more choices. Most CAA items have two or three options; a few items have four options.
- **Constructed response (CR) items**—Students are required to respond by providing words or numbers. Test examiners at a school scored these items based on a rubric.
- **Technology-enhanced items**—Technology beyond simple option selection is incorporated in some items. These items can resemble real-world scenarios, in which students might interact with information using technology.

[Table 2.A.1](#) on page [21](#) lists the types of technology-enhanced items. The first column contains the types of responses that can be made to test questions; the middle column lists the item type for the response type. The third column describes how the student is expected to use that response type in answering the test item. Detailed information on item format is included in subsection [3.1.4 Item Types](#) in [Chapter 3: Item Development and Review](#).

SR items have either one or two points and are machine-scored. There are a small number of CR items in the CAA for ELA, which are also worth either one or two points. Scoring rubrics specific to each CR item are included in the *Directions for Administration (DFA)* (CDE, 2017e) and are used by the test examiners to rate students' responses. All rubric-based human scoring or rating was done by test examiners during the test administration.

2.1.2. Item Specifications

The CAA item specifications provide descriptions of item characteristics that are intended to measure each content standard consistently. They were developed based on the CCSS guidelines and clarifications from the Connectors and EUs. During item development, item developers are provided CAA item specifications and a CAA style guide that contains detailed information about the consistency in item development and item review processes. Refer to subsection [3.1.2 Item Specifications](#) in [chapter 3](#) for detailed information about item specifications.

2.1.3. Item Banking

To support sophisticated computer adaptive testing designs, it is necessary to build an item bank where content and statistical attributes of each item are included. All the items in the item bank need to be calibrated and linked onto common scales.

The test forms of the 2017–18 CAA for ELA and mathematics administration include both operational items and newly developed, embedded field-test items. The operational items include

- anchor items that had been used in previous years and served as statistical linkage to link the item response theory (IRT) scale based on 2017–18 test administration data to the baseline scale; and
- nonanchor operational items that were not used as anchor items for linking purposes.

After the 2017–18 CAA administration, initial item analyses were implemented, and the results were reviewed by ETS psychometric and assessment development staff, who provided recommendations to the CDE on whether the items should be included or excluded from the calibrations. Decisions were made in consultation with the CDE; details of this process are in subsection [8.2 Classical Item Analysis Statistics](#).

Next, both the nonanchor operational items and field test items were calibrated and linked through the anchor items to the baseline scales that were established in the 2015–16 administration. Refer to subsection [8.3 Item Response Theory \(IRT\) Analyses](#) for calibration and linking. Final item analyses were conducted following the calibration and linking step.

Content experts from ETS and the CDE, as well as selected California educators, reviewed the associated item statistics and evaluated the performance of items during the annual data review meeting. They also reviewed the flagged items—those whose statistics fall beyond expected ranges—and worked to provide plausible explanations for these particular items based on their knowledge of the student population.

With the CDE’s approval, the nonanchor operational items and field test items, together with their statistical information, were entered into the item bank for form assembly in future administrations. It is expected that more new items will be developed, field tested, and entered into the item bank after the 2017–18 administration. In this way, the item bank will expand gradually to support the multistage test (MST) design.

2.2. Test Assembly

2.2.1. Test Design

The CAAs for ELA and mathematics use an MST design, which consists of a small number of separate modules that can be assembled to meet a set of specifications for item content and item difficulty. On the basis of their performance in Stage 1, students are routed to an

appropriate module of the next stage. With this design, only a few modules need to be selected to match students' abilities, and students with a variety of ability levels can be measured with higher precision and shorter test length.

The general principle of MST is that students within the eligible testing population who experience difficulties with the simplest tasks should not continue on with more difficult items. Therefore, after the last item in Stage 1, the results from the Stage 1 router allow an algorithm to identify those students for whom meaningful measurement is unlikely to occur, thus resulting in an early exit from the test. Continuing students are routed to one of three Stage 2 modules appropriate for their ability level.

The MST design for the CAAs for ELA and mathematics uses tiered items, which are developed to three tiers of complexity and organized in order of increasing difficulty and cognitive load. This two-stage adaptive procedure has one common Stage-1 module and three Stage-2 modules (easy, moderate, and hard).

MST is beneficial for students with a wide range of cognitive disabilities because routing rules are used to direct students to the modules that fit their ability levels and thus minimize the students' test-taking burden and enhance their testing experience. Refer to subsection [4.2 ELA and Mathematics Test Design](#) in [Chapter 4: Test Assembly](#) for more details about the MST design.

The routing rules that determine whether and how a student transitions from the first to second stage of the test are based on a simulation study in which student ability distributions were estimated for each grade level and subject based on the data collected from the 2016–17 administration. Refer to subsection [4.2.3 Routing Rules for the 2017–18 Administration](#) in [Chapter 4: Test Assembly](#) for detailed information about the routing rules.

2.2.2. Test Blueprints

Test blueprints specify the total number of items on each test and the number of items in each content category according to standards. The standards upon which CAA for ELA and mathematics test blueprints are built consist of the Connectors and EUs, both derived from the CCSS. The blueprints were developed with reference to the blueprints authored by the NCSC; California educators were involved in this procedure. The blueprints for the CAAs for ELA and mathematics for grades three through eight and grade eleven were adopted by the State Board of Education (SBE) in June 2015.

The CAA for ELA and mathematics test blueprints are unique to each grade level and content area. These blueprints designate the breakdown first by content category (e.g., ELA) and then by Connectors. Information on each test blueprint includes

- specific ratio of each content category or domain on the overall test;
- specific Connectors to be assessed;
- specific EUs to be assessed; and
- the maximum number of total items.

The CAA blueprints also include a content coverage percentage comparison to the NCSC blueprints upon which the CAA blueprints are based (CDE, 2015a and 2015b).

2.2.3. Test Length

The number of items in each of the CAAs for ELA and mathematics is the same across grades and subjects—there are 10 operational items followed by four embedded field-test items in each version at Stage 1 and then 15 items per module at Stage 2. Each student

answers 29 items for a complete test. The unique core router at Stage 1 is administered to all students along with one of the five embedded field test versions that are randomly assigned at the school level.

At Stage 2, each of the three modules—easy, moderate, and hard—is tailored to a particular student ability level with appropriate items. Each Stage 2 module consists of approximately 7 to 10 items with prior item statistics and five to eight items without prior statistics. All items with prior statistics in Stage 1 and Stage 2 are potentially used as anchor items in post-equating to link items without prior statistics to the baseline scale. As a result, this test design allows the calibration of approximately 36 new items in each grade-level test that can be potentially entered into the item bank and will support the future operational test administrations.

Refer to subsection [4.2 Test Design](#) in [Chapter 4: Test Assembly](#) for more details on test form assembly.

2.2.4. Psychometric Criteria

Psychometric criteria are usually specified for the test form review before the test administration. However, the 2017–18 MST forms did not have test-level statistical properties or characteristics because a number of operational items did not have statistics prior to the 2017–18 administration. Even though final test-level statistical properties were not developed, the psychometric guidelines of item selection and form building were developed during the preliminary review of the assembled test forms for the 2017–18 administration.

Prior to the 2017–18 administration, ETS content and psychometric staff reviewed the assembled forms thoroughly in regard to the following aspects:

- Coverage of blueprints
- Overall test design and statistical properties
- Statistical properties of individual items with prior item statistics
- Number and position of anchor items

Details of the psychometric criteria of form review are included in subsection [4.3 Test Production Process](#). Psychometric criteria of items can be found in [Appendix 4.B Statistical Specifications for Test Development](#) of [Chapter 4: Test Assembly](#).

2.3. Test Administration

The CAAs for ELA and mathematics are administered online using the secure browser and test delivery system, ensuring a secure, confidential, standardized, consistent, and appropriate administration for students. Each CAA is administered in a one-to-one setting by a trained test examiner, usually the student’s teacher. Test examiners and students have an opportunity to use the CAA for ELA and mathematics training and practice tests to gain experience with different types of questions before taking the scored tests.

2.3.1. Test Security and Confidentiality

All tests within the California Assessment of Student Performance and Progress (CAASPP) System are secure. For the CAAs, every person having access to test materials maintains the security and confidentiality of the tests. ETS internal Code of Ethics requires that all test information, including tangible materials associated with the CAAs (such as test questions and test results), confidential files, processes, and activities are kept secure. To ensure security for all tests that ETS develops or handles, ETS maintains an Office of Testing

Integrity (OTI). A detailed description of the OTI and its mission is presented in subsection [5.2.1 ETS' Office of Testing Integrity \(OTI\)](#).

In pursuit of enforcing secure practices, ETS strives to safeguard the various processes involved in a test development and administration cycle. Those processes are listed next and discussed in detail in [chapter 5](#).

- Standardization of test security
- Security of electronic files using a firewall
- Transfer of scores via secure data exchange
- Data management
- Statistical analysis
- Student confidentiality
- Student test results

2.3.2. Procedures to Maintain Standardization

ETS takes all necessary measures to ensure the standardization of CAA test administration by individual test examiners. The measures for standardization include, but are not limited to, the aspects described in these subsections.

2.3.2.1. Test Administration

ETS employs processes to ensure the standardization of an administration cycle; these processes are discussed in more detail in [Chapter 5: Test Administration](#).

All staff at local educational agencies (LEAs) that are involved in the CAASPP administration, including CAA for ELA and mathematics administration, are provided directions about their responsibilities. Their roles include LEA CAASPP coordinators, CAASPP test site coordinators, and CAA test examiners. The responsibilities of each of the staff members specifically for the CAAs are described in the *2017–18 CAASPP Online Test Administration Manual* (CDE, 2018c).

2.3.2.2. Test Directions

Several series of instructions regarding the CAASPP including administration of the CAAs for ELA and mathematics are compiled in detailed manuals and provided to the LEA staff. Such documents include, but are not limited to, the following:

- **CAA for ELA and Mathematics Directions for Administration (DFAs)**—A manual that provides the script and directions for administration to be followed exactly by test examiners during a testing session. The secure DFAs for the CAAs for ELA and mathematics contain item-specific instructions, and therefore are grade- and version-specific. (Refer to [5.4.4.1 Directions for Administration](#) in [chapter 5](#) for more information.)
- **CAASPP Online Test Administration Manual**—A manual that provides test administration procedures and guidelines for LEA CAASPP coordinators, CAASPP test site coordinators, test examiners, and test administrators (CDE, 2018c). (Refer to [5.4.4.2 CAASPP Online Test Administration Manual](#) in [chapter 5](#) for more information.)
- **Test Operations Management System (TOMS) Pre-Administration Guide for CAASPP Testing**—A manual that provides instructions for TOMS that allow LEA staff, including LEA CAASPP coordinators and CAASPP test site coordinators, to perform a number of tasks including setting up test administrations, adding and managing users,

and configuring online student test settings. (CDE, 2018e) (Refer to [5.4.4.3 TOMS Pre-Administration Guide for CAASPP Testing](#) in [chapter 5](#) for more information.)

2.4. Participation

The decision to assign a student to take a CAA is made by his or her individualized education program (IEP) team using the information on the CAA Guidance for IEP Teams web page to make the determination. This web page describes the CAA and its administration as well as criteria for participation and the students who should be assigned to take this test (CDE, 2018b).

A student must meet all three of the following criteria to participate in the CAA:

1. **A student with a significant cognitive disability.** Review of the student’s school records indicates a disability or multiple disabilities that significantly impact intellectual functioning and adaptive behavior essential for someone to live independently and to function safely in daily life.
2. **The student is learning content derived from the California CCSS and CA NGSS.** Goals and instruction listed in the IEP for the student are linked to the enrolled grade-level CCSS and address knowledge and skills that are appropriate and challenging for this student.
3. **The student’s need for extensive, direct individualized instruction and substantial supports to achieve measurable gains in the grade-level and age-appropriate curriculum.** The student:
 - a. Requires extensive, repeated, individualized instruction and support that is not of a temporary or transient nature; and
 - b. Uses substantially adapted materials and individualized methods of accessing information in alternative ways to acquire, maintain, generalize, demonstrate, and transfer skills across multiple settings.

All students who are eligible to take the CAAs are required to participate. All students who are logged on and presented with at least the first test item are counted as having participated. Students who do not provide a consistent, observable response to the first item are not required to be administered the entire test but are counted as having participated (CDE, 2017, slide 24).

Refer to [appendix 2.B](#) regarding the number of participants and the percent of participation of all students and the selected demographic groups for each test during the 2017–18 administration. Note that the data in the *Number Tested* columns includes students whose attemptedness codes indicate completion, partial-completion, and non-completion; these are discussed in subsection [7.1.1 Incomplete and Complete Cases](#).

2.5. Fairness and Accessibility

There are several procedures in place to ensure that the CAAs for ELA and mathematics are fair and accessible to all test takers. This subsection provides information on the available accessibility resources for use with the online CAAs for ELA and mathematics. Additionally, the differential item functioning (DIF) analysis used to identify items that may function differently across groups of examinees (e.g., gender, ethnicity) is also discussed briefly.

2.5.1. Universal Tools, Designated Supports, and Accommodations

The CAAs are specifically designed for students with significant cognitive disabilities and an IEP that calls for the use of a CAA. Additional resources are sometimes needed for these students. The CDE maintains a list of the universal tools, designated supports, and accommodations that are permitted for use in CAASPP online assessments in its web document “Matrix One: Universal Tools, Designated Supports, and Accommodations for the CAASPP System”⁴ (CDE, 2018d).

Universal tools are available to all CAA students. These resources may be turned on and off when embedded as part of the technology platform for the online CAA assessments on the basis of student preference and selection.

Designated supports are available to CAA students when determined as needed by an educator or team of educators, with parent/guardian and student input as appropriate, or when specified in the student’s IEP.

Accommodations must be permitted on CAAs for all eligible students when specified in the student’s IEP.

While most of the resources presented for the CAASPP online assessments are accessible for the CAAs, there are a few resources that are not applicable because the CAAs are designed to be given one-on-one in the student’s language of instruction, using the student’s identified instructional resources.

For CAAs, designated supports and accommodations are assigned to individual students based on their needs. Such assignments are implemented in TOMS by the LEA CAASPP coordinator or CAASPP test site coordinator, either through individual assignment in the student’s profile in TOMS or by batch upload, where settings were uploaded into TOMS for multiple students. Settings were either selected and entered into a macro-enabled template called the Individual Student Assessment Accessibility Profile (ISAAP) Tool that created an upload file; or entered into a template. These designated supports and accommodations were delivered to the student through the test delivery system at the time of testing.

[Appendix 2.C](#) presents the numbers and percentages of students using designated supports, accommodations, or unlisted resources. The use of universal tools is not tracked because they are available to all students in the test delivery system.

2.5.1.1. Resources for Selection of Accessibility Resources

The full list of the universal tools, designated supports, and accommodations that are used in CAASPP online assessments are documented in Matrix One (CDE, 2018d). Most embedded universal tools, designated supports, and accommodations listed in Parts 1 and 2 of Matrix One are available for the CAAs for ELA and mathematics through the online testing interface. Part 3 of Matrix One includes non-embedded universal tools, designated supports, accommodations, and unlisted resources that are available particularly for CAA for ELA and mathematics testing. School-level personnel and IEP teams use Matrix One when deciding how best to support the student’s test-taking experience. On the rare occasion when a student has both an IEP and a Section 504 plan, the Section 504 plan also should be referenced for accessibility resources.

⁴ This technical report is based on the version of Matrix One that was available during the 2017–18 CAASPP administration.

In addition to assigning accessibility resources individually and via file upload in TOMS, LEAs had the option of using the ISAAP Tool to assign resources to students. *The ISAAP Tool is used by LEAs in conjunction with the Smarter Balanced Assessment Consortium’s Usability, Accessibility, and Accommodations Guidelines* (Smarter Balanced, 2018) and *the Accessibility Guide for CAASPP Online Testing* (CDE, 2018a), as well as with state regulations and policies (such as Matrix One) related to assessment accessibility.

2.5.1.2. Delivery of Accessibility Resources

Universal tools, designated supports, and accommodations can be delivered as either embedded or non-embedded resources. Embedded resources are digitally delivered features or settings available as part of the technology platform for the online CAAs. Examples of embedded resources applicable to the CAAs include masking, color contrast, and print size. Non-embedded resources for the CAAs include magnification, calculator, and scribe.

2.5.1.3. Unlisted Resources

An unlisted resource is an instructional support a student regularly uses in daily instruction, assessment, or both, and has not been previously identified as a universal tool, designated support, or accommodation. Matrix One includes an inventory of unlisted resources that have already been identified and preapproved (CDE, 2018d). During the 2017–18 CAASPP administration, an LEA CAASPP coordinator or a CAASPP test site coordinator had the option to submit a web form available in TOMS to request such a resource for an eligible student. The resource was required to be specified in the eligible student’s IEP and only assigned with the CDE’s approval.

For an unlisted resource to be approved, it must not change the construct of what is being tested for accountability purposes. If it did, the student received a score with a footnote that the test was administered under conditions that resulted in a score that may not be an accurate representation of the student’s achievement. [Appendix 2.C](#) presents counts and percentages of students using designated supports, accommodations, and unlisted resources.

2.5.2. Differential Item Functioning (DIF)

DIF analyses are conducted to detect possible test bias by locating items for which one group of students performs significantly better than another group. DIF is a collection of statistical methods utilized to recognize if performance varies across different groups of examinees (e.g., male vs. female or white vs. African-American). If an item performs differentially across student groups when students are matched on ability, the item may be measuring something other than the intended construct. Therefore, it is important to identify items flagged for DIF. Content experts and bias and sensitivity experts from diverse backgrounds review these DIF-flagged items and determine the sources and meanings of performance differences. Refer to subsection [8.5. Differential Item Functioning \(DIF\)](#) for DIF analyses, and [appendix 8.D](#) for DIF analysis results.

2.6. Scores

2.6.1. Estimating Ability Scores

The IRT inverse test characteristic curve (TCC) method (Stocking, 1996)—where the student’s ability value is estimated to be the value for which the expected number-correct score is equal to the student’s number-correct score—is used to estimate students’ overall ability parameters. For the purpose of reporting, students’ ability estimates (theta scores)

are then expressed in three-digit scale scores by applying the appropriate linear transformation for each grade-level, content-area CAA for ELA or mathematics. Student performance on the reporting scale is designated into one of three achievement levels:

1. Level 1—Alternate
2. Level 2—Alternate
3. Level 3—Alternate

For information regarding score specifications and the establishment of score-reporting scales, refer to [Chapter 7: Scoring and Reporting](#). For information regarding achievement levels, refer to [Chapter 6: Standard Setting](#) for a description of the process used to set achievement level standards.

2.6.2. Score Reporting

TOMS is a secure website hosted by ETS that allows LEA CAASPP coordinators to download Student Score Reports as PDF files and aggregated results for the LEA. CAA scores can also be viewed through the Online Reporting System (ORS), a secure website that provides authorized users with interactive and cumulative online reports for ELA and mathematics at the student, school, and LEA levels. The ORS provides three types of score reports: an individual student score report, a school report, and an LEA report. Refer to subsection [7.3.1 Online Reporting](#) for details about TOMS and the ORS; and subsection [7.3.3 Types of Score Reports](#) for the content of each type of score report.

2.6.3. Aggregation Procedures

In order to provide meaningful results to the stakeholders, CAA scores for a given grade and content area are aggregated and generated at the school, LEA or direct funded charter school, county, and state levels. State-level results are available on the CAASPP Public Web Reporting website at <http://caaspp.cde.ca.gov/>. The aggregated scores are presented for all students, or selected demographic student groups.

A variety of aggregated score types are also used to check the validity of the scores.

The aggregation procedures used to present CAA results are described in subsection [7.2 Overview of Score Aggregation Procedures](#). Aggregated scores that summarize student performance by content area and grade for selected groups of students are provided in [Table 7.D.1](#) through [Table 7.D.14](#) starting on page [163](#). The tables show the numbers of students with valid scores in each group, scale score means and standard deviations, and percentage at an achievement level. Students are grouped by demographic characteristics, including gender, ethnicity, English-language fluency, primary disability, and economic status. Definitions for the demographic groups included in these tables are provided in [Table 7.5](#) on page [98](#).

2.7. Equating

The purpose of equating using IRT models is to place item difficulty and student ability estimates onto a common theta scale for a given grade and content area. As a result, scores on pathways that include the router and different modules of Stage 2 are statistically adjusted to compensate for any differences in test difficulty; refer to [Table 4.1](#) on page [52](#) in subsection [4.2.1.4 Pathways](#) in [Chapter 4: Test Assembly](#) for details about pathways.

IRT models (Hambleton & Swaminathan, 1985) are used to establish a common scale initially and provide ongoing maintenance of the program. The baseline scale for the CAAs for ELA and mathematics were established by calibrating samples of item response data

from the 2015–16 administration to which the item calibrations of the subsequent administrations could be linked. For the 2017–18 administration, the new item parameters were calibrated and placed on the reference scale by using a set of anchor items selected from the 2015–16 and 2016–17 forms and readministered in 2017–18.

CAA for ELA and mathematics equating has three steps: item calibration, linking, and scaling, as described next. The results of this procedure are further used to support scoring and item banking.

2.7.1. Calibration

A concurrent calibration is implemented to estimate parameters for all 2017–18 items, including embedded field-test items and all operational items. As a result of the concurrent calibration, the item parameter estimates are placed on a common scale for test items from the same grade and content area.

The concurrent calibration requires either “common items” or “random equivalent groups.” The CAAs for ELA and mathematics MST tests are assembled with common items between modules, which supports the efficiency and accuracy of the concurrent calibrations. Refer to subsection [4.2.2. ELA and Mathematics Test Design](#) in [Chapter 4: Test Assembly](#) for the number and distributions of these items in each test.

The one-parameter logistic IRT model (Hambleton and Rogers, 1991) and the partial credit model (Masters, 1982) were used for item calibration of the CAAs with flexMIRT® (Cai, 2018) version 3.5 software.

Detailed procedures for the concurrent calibrations are included in subsection [8.3.2.1 Item Calibration](#).

2.7.2. Linking

Linking is a procedure where items from different test forms or administrations are placed onto the reference scale so that items can be compared across forms and administrations. Calibrated item parameters for items on each grade-level test in the 2017–18 administration are linked to the reference scale that was established in spring 2016 with the mean-to-mean linking method (Lloyd & Hoover, 1980).

Refer to subsection [8.3.2.2 Linking the Item Parameters](#) in [Chapter 8: Analyses](#) for additional information.

2.7.3. Scaling

Scaling refers to the procedure by which the number-correct scores (raw scores) on each new form are transformed to the scale scores on the reference-year scale, so that the scores of students who take different forms are comparable. Once the new item calibrations for each test are transformed to the reference year scale, the new form number-correct scores (raw scores) can also be transformed to their respective ability (theta) scores. Subsequently, these ability (theta) scores can be transformed to scale scores through linear transformation.

Details of the scaling procedure can be found in subsection [8.3.2.3 Scaling the Scores](#) of [Chapter 8: Analyses](#).

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Appendix 2.A: Item Types

Table 2.A.1 California Alternate Assessment (CAA) Item Types

Response Type	Item Type	Description
Multiple choice (MC) single select	MC	The item generally consists of a stem and list of choices; test taker can select only one choice to respond. May also include a stimulus.
MC multiple selects	MC	The item generally consists of a stem and list of choices; test taker can select two or more choices to respond. May also include a stimulus.
Inline choice list single select	MC	The stem contains a single blank; test taker must fill in the blank by selecting a choice from its corresponding choice list.
Inline choice list multiple select	MC	The stem contains two or more blanks; test taker must fill in each blank by selecting a choice from the corresponding choice lists.
Numeric	Short CR	The test taker responds by filling in a single entry box with a numeric value. The entry box may be standalone, in line with text, or displayed on top of an image.
Grid single select *	MC	The test taker responds by marking a single cell in a table grid.
Zones single select *	Hot Spot	An item where the answer choices are predefined “hotspots” on an image. When the test taker selects (clicks) on the spot, the selection is highlighted, shaded, or outlined in red. The test taker selects one zone to respond.
Zone multiple select *	Hot Spot	An item where the answer choices are predefined “hotspots” on an image. When the test taker selects (clicks) on the spot, the selection is highlighted, shaded, or outlined in red. The test taker selects two or more zones to respond.

Response Type	Item Type	Description
Match single select *	Drag & Drop	<p>The test taker responds by dragging and dropping a single choice (“source”) into the appropriate location (“target”). For the CAA items, students do not drag items, they simply select (click) the source and then the target area, and the source snaps to the target area.</p> <p>There are four main varieties of this item type:</p> <ol style="list-style-type: none"> 1. Target Table—text-based sources with targets arranged in table structure 2. Target Passage—text-based sources with targets arranged in paragraphs of text 3. Target Positions—text-based sources with targets arranged on top of an image 4. Image Map—image-based sources, and both sources and targets are arranged on top of an image

Response Type	Item Type	Description
Match multiple select *	Drag & Drop	<p>The test taker responds by dragging and dropping two or more choices (“sources”) into the appropriate locations (“targets”). For the CAA items, students do not drag items, they simply select (click) the source and then the target area, and the source snaps to the target area.</p> <p>There are four main varieties:</p> <ol style="list-style-type: none"> 1. Target Table—text-based sources with targets arranged in table structure 2. Target Passage—text-based sources with targets arranged in paragraphs of text 3. Target Positions—text-based sources with targets arranged on top of an image 4. Image Map—image-based sources, and both sources and targets are arranged on top of an image <p>These varieties allow for following scenarios:</p> <ul style="list-style-type: none"> • Exact matching (i.e., ordering) • Sources correctly placed in multiple different targets • Reuse sources • Reuse targets • Partial scoring
Bar graph single select *	Short CR	<p>The test taker responds by manipulating a single bar on a graph. Bars can be solid or consist of stacked icons (e.g., dollar signs representing money, stick figures representing people, etc.). Bars can be horizontally or vertically oriented.</p>

Response Type	Item Type	Description
Bar graph multiple select *	Short CR	The test taker responds by manipulating two or more bars on a graph. Bars can be solid or consist of stacked icons (e.g., dollar signs representing money, stick figures representing people, etc.). Bars can be horizontally or vertically oriented.
Composite	Composite Objective	Interactions vary depending on which item types were associated. Keys vary depending on which item types were associated.

* Indicates technology-enhanced items

Appendix 2.B: California Alternate Assessment (CAA) Participation

Table 2.B.1 CAA 2017–18 Participation—English Language Arts/Literacy (ELA) Grades Three Through Six

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 5: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
All	5,518	5,102	92%	5,710	5,324	93%	5,766	5,330	92%	5,887	5,386	91%
Gender: Male	3,829	3,540	92%	3,853	3,600	93%	3,922	3,643	93%	3,942	3,606	91%
Gender Female	1,689	1,562	92%	1,857	1,724	93%	1,844	1,687	91%	1,945	1,780	92%
Ethnicity: American Indian or Alaska Native	38	34	89%	32	30	94%	33	32	97%	32	29	91%
Ethnicity: Asian	444	398	90%	450	419	93%	438	412	94%	456	415	91%
Ethnicity: Native Hawaiian or Other Pacific Islander	24	23	96%	31	29	94%	28	27	96%	26	25	96%
Ethnicity: Filipino	139	131	94%	131	126	96%	137	130	95%	158	139	88%
Ethnicity: Hispanic or Latino	3,103	2,921	94%	3,213	3,049	95%	3,296	3,098	94%	3,401	3,188	94%
Ethnicity: Black or African American	426	388	91%	455	418	92%	441	397	90%	480	433	90%
Ethnicity: White	1,073	957	89%	1,134	1,020	90%	1,178	1,035	88%	1,107	970	88%
Ethnicity: Two or more races	271	250	92%	264	233	88%	215	199	93%	227	187	82%

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 5: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
English proficiency: English only	3,408	3,124	92%	3,497	3,217	92%	3,406	3,095	91%	3,408	3,071	90%
English proficiency: Initial fluent English proficient	39	36	92%	54	48	89%	42	40	95%	57	57	100%
English proficiency: English learner	1,874	1,764	94%	1,886	1,792	95%	1,947	1,844	95%	1,934	1,801	93%
English proficiency: Reclassified fluent English proficient	184	169	92%	264	259	98%	362	342	94%	479	450	94%
English proficiency: To be determined	5	4	80%	6	5	83%	4	4	100%	4	3	75%
English proficiency: English proficiency unknown	8	5	63%	3	3	100%	5	5	100%	5	4	80%
Economic status: Not economically disadvantaged	1,877	1,666	89%	1,919	1,722	90%	2,009	1,782	89%	2,002	1,743	87%
Economic status: Economically disadvantaged	3,641	3,436	94%	3,791	3,602	95%	3,757	3,548	94%	3,885	3,643	94%
Primary disability: Intellectual disability	1,694	1,592	94%	1,892	1,786	94%	2,014	1,893	94%	2,129	1,997	94%
Primary disability: Hearing impairment	52	48	92%	54	53	98%	42	41	98%	67	63	94%
Primary disability: Speech or language impairment	225	205	91%	195	187	96%	177	168	95%	126	118	94%

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 5: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
Primary disability: Visual impairment	19	18	95%	25	22	88%	32	24	75%	28	23	82%
Primary disability: Emotional disturbance	26	23	88%	36	29	81%	39	34	87%	36	34	94%
Primary disability: Orthopedic impairment	210	172	82%	245	217	89%	284	242	85%	302	243	80%
Primary disability: Other health impairment	347	308	89%	329	308	94%	296	273	92%	291	263	90%
Primary disability: Specific learning disability	302	288	95%	411	394	96%	419	397	95%	408	384	94%
Primary disability: Deaf-blindness	4	3	75%	3	1	33%	NA	NA	NA	6	5	83%
Primary disability: Multiple disabilities	313	260	83%	331	276	83%	348	293	84%	384	320	83%
Primary disability: Autism	2,297	2,159	94%	2,166	2,030	94%	2,088	1,944	93%	2,068	1,901	92%
Primary disability: Traumatic brain injury	29	26	90%	23	21	91%	27	21	78%	42	35	83%
Primary disability: Not classified (changed or removed after student testing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2.B.2 CAA 2017–18 Participation—ELA, Grades Seven Through Eight and Grade Eleven

Student Group	Grade 7: Number Enrolled	Grade 7: Number Tested	Grade 7: Percent Tested	Grade 8: Number Enrolled	Grade 8: Number Tested	Grade 8: Percent Tested	Grade 11: Number Enrolled	Grade 11: Number Tested	Grade 11: Percent Tested
All	5,969	5,383	90%	5,808	5,238	90%	5,330	4,457	84%
Gender: Male	4,007	3,630	91%	3,905	3,531	90%	3,498	2,924	84%
Gender Female	1,962	1,753	89%	1,903	1,707	90%	1,832	1,533	84%
Ethnicity: American Indian or Alaska Native	38	33	87%	34	31	91%	40	35	88%
Ethnicity: Asian	435	402	92%	491	437	89%	413	351	85%
Ethnicity: Native Hawaiian or Other Pacific Islander	33	29	88%	26	24	92%	23	18	78%
Ethnicity: Filipino	164	152	93%	176	164	93%	163	128	79%
Ethnicity: Hispanic or Latino	3,359	3,097	92%	3,201	2,968	93%	2,841	2,432	86%
Ethnicity: Black or African American	511	464	91%	478	429	90%	499	420	84%
Ethnicity: White	1,195	994	83%	1,227	1,028	84%	1,186	934	79%
Ethnicity: Two or more races	234	212	91%	175	157	90%	165	139	84%
English proficiency: English only	3,526	3,104	88%	3,384	2,978	88%	3,183	2,619	82%
English proficiency: Initial fluent English proficient	87	83	95%	97	93	96%	83	71	86%
English proficiency: English learner	1,846	1,721	93%	1,773	1,644	93%	1,465	1,237	84%
English proficiency: Reclassified fluent English proficient	499	467	94%	545	516	95%	586	519	89%
English proficiency: To be determined	4	2	50%	3	2	67%	2	1	50%
English proficiency: English proficiency unknown	7	6	86%	6	5	83%	11	10	91%

Student Group	Grade 7: Number Enrolled	Grade 7: Number Tested	Grade 7: Percent Tested	Grade 8: Number Enrolled	Grade 8: Number Tested	Grade 8: Percent Tested	Grade 11: Number Enrolled	Grade 11: Number Tested	Grade 11: Percent Tested
Economic status: Not economically disadvantaged	2,099	1,792	85%	2,142	1,817	85%	2,018	1,594	79%
Economic status: Economically disadvantaged	3,870	3,591	93%	3,666	3,421	93%	3,312	2,863	86%
Primary disability: Intellectual disability	2,279	2,090	92%	2,255	2,075	92%	2,189	1,892	86%
Primary disability: Hearing impairment	50	47	94%	55	51	93%	58	50	86%
Primary disability: Speech or language impairment	117	109	93%	112	104	93%	51	47	92%
Primary disability: Visual impairment	24	18	75%	37	31	84%	42	30	71%
Primary disability: Emotional disturbance	58	48	83%	47	35	74%	65	39	60%
Primary disability: Orthopedic impairment	289	235	81%	274	213	78%	295	231	78%
Primary disability: Other health impairment	348	300	86%	318	279	88%	240	192	80%
Primary disability: Specific learning disability	448	422	94%	364	343	94%	334	276	83%
Primary disability: Deaf–blindness	NA	NA	NA	6	3	50%	3	2	67%
Primary disability: Multiple disabilities	324	266	82%	341	280	82%	292	227	78%
Primary disability: Autism	1,999	1,821	91%	1,973	1,801	91%	1,712	1,434	84%
Primary disability: Traumatic brain injury	33	27	82%	26	23	88%	49	37	76%
Primary disability: Not classified (changed or removed after student testing)	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2.B.3 CAA 2017–18 Participation—Mathematics, Grades Three Through Six

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 5: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
All	5,518	5,101	92%	5,710	5,309	93%	5,766	5,319	92%	5,887	5,366	91%
Gender: Male	3,829	3,536	92%	3,853	3,587	93%	3,922	3,632	93%	3,942	3,592	91%
Gender Female	1,689	1,565	93%	1,857	1,722	93%	1,844	1,687	91%	1,945	1,774	91%
Ethnicity: American Indian or Alaska Native	38	34	89%	32	30	94%	33	32	97%	32	29	91%
Ethnicity: Asian	444	401	90%	450	417	93%	438	408	93%	456	415	91%
Ethnicity: Native Hawaiian or Other Pacific Islander	24	23	96%	31	29	94%	28	27	96%	26	25	96%
Ethnicity: Filipino	139	130	94%	131	125	95%	137	130	95%	158	139	88%
Ethnicity: Hispanic or Latino	3,103	2,911	94%	3,213	3,044	95%	3,296	3,100	94%	3,401	3,171	93%
Ethnicity: Black or African American	426	391	92%	455	417	92%	441	394	89%	480	432	90%
Ethnicity: White	1,073	959	89%	1,134	1,014	89%	1,178	1,031	88%	1,107	969	88%
Ethnicity: Two or more races	271	252	93%	264	233	88%	215	197	92%	227	186	82%
English proficiency: English only	3,408	3,116	91%	3,497	3,201	92%	3,406	3,088	91%	3,408	3,054	90%
English proficiency: Initial fluent English proficient	39	35	90%	54	47	87%	42	40	95%	57	57	100%
English proficiency: English learner	1,874	1,770	94%	1,886	1,796	95%	1,947	1,841	95%	1,934	1,797	93%

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 5: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
English proficiency: Reclassified fluent English proficient	184	169	92%	264	257	97%	362	341	94%	479	451	94%
English proficiency: To be determined	5	4	80%	6	5	83%	4	4	100%	4	3	75%
English proficiency: English proficiency unknown	8	7	88%	3	3	100%	5	5	100%	5	4	80%
Economic status: Not economically disadvantaged	1,877	1,667	89%	1,919	1,714	89%	2,009	1,777	88%	2,002	1,734	87%
Economic status: Economically disadvantaged	3,641	3,434	94%	3,791	3,595	95%	3,757	3,542	94%	3,885	3,632	93%
Primary disability: Intellectual disability	1,694	1,599	94%	1,892	1,784	94%	2,014	1,892	94%	2,129	1,986	93%
Primary disability: Hearing impairment	52	48	92%	54	53	98%	42	41	98%	67	62	93%
Primary disability: Speech or language impairment	225	206	92%	195	187	96%	177	166	94%	126	116	92%
Primary disability: Visual impairment	19	17	89%	25	22	88%	32	25	78%	28	23	82%
Primary disability: Emotional disturbance	26	23	88%	36	29	81%	39	34	87%	36	33	92%
Primary disability: Orthopedic impairment	210	174	83%	245	216	88%	284	242	85%	302	244	81%

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 5: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
Primary disability: Other health impairment	347	307	88%	329	309	94%	296	271	92%	291	263	90%
Primary disability: Specific learning disability	302	292	97%	411	393	96%	419	396	95%	408	380	93%
Primary disability: Deaf-blindness	4	3	75%	3	1	33%	NA	NA	NA	6	5	83%
Primary disability: Multiple disabilities	313	258	82%	331	277	84%	348	295	85%	384	320	83%
Primary disability: Autism	2,297	2,148	94%	2,166	2,017	93%	2,088	1,937	93%	2,068	1,899	92%
Primary disability: Traumatic brain injury	29	26	90%	23	21	91%	27	20	74%	42	35	83%
Primary disability: Not classified (changed or removed after student testing)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2.B.4 CAA 2017–18 Participation—Mathematics, Grades Seven Through Eight and Grade Eleven

Student Group	Grade 7: Number Enrolled	Grade 7: Number Tested	Grade 7: Percent Tested	Grade 8: Number Enrolled	Grade 8: Number Tested	Grade 8: Percent Tested	Grade 11: Number Enrolled	Grade 11: Number Tested	Grade 11: Percent Tested
All	5,969	5,375	90%	5,808	5,229	90%	5,330	4,437	83%
Gender: Male	4,007	3,632	91%	3,905	3,532	90%	3,498	2,916	83%
Gender Female	1,962	1,743	89%	1,903	1,697	89%	1,832	1,521	83%
Ethnicity: American Indian or Alaska Native	38	34	89%	34	31	91%	40	34	85%
Ethnicity: Asian	435	402	92%	491	435	89%	413	346	84%
Ethnicity: Native Hawaiian or Other Pacific Islander	33	28	85%	26	24	92%	23	18	78%
Ethnicity: Filipino	164	152	93%	176	163	93%	163	128	79%
Ethnicity: Hispanic or Latino	3,359	3,096	92%	3,201	2,968	93%	2,841	2,430	86%
Ethnicity: Black or African American	511	465	91%	478	430	90%	499	416	83%
Ethnicity: White	1,195	984	82%	1,227	1,023	83%	1,186	931	78%
Ethnicity: Two or more races	234	214	91%	175	155	89%	165	134	81%
English proficiency: English only	3,526	3,090	88%	3,384	2,965	88%	3,183	2,599	82%
English proficiency: Initial fluent English proficient	87	84	97%	97	93	96%	83	70	84%
English proficiency: English learner	1,846	1,729	94%	1,773	1,648	93%	1,465	1,239	85%
English proficiency: Reclassified fluent English proficient	499	464	93%	545	515	94%	586	517	88%
English proficiency: To be determined	4	2	50%	3	2	67%	2	1	50%
English proficiency: English proficiency unknown	7	6	86%	6	6	100%	11	11	100%

Student Group	Grade 7: Number Enrolled	Grade 7: Number Tested	Grade 7: Percent Tested	Grade 8: Number Enrolled	Grade 8: Number Tested	Grade 8: Percent Tested	Grade 11: Number Enrolled	Grade 11: Number Tested	Grade 11: Percent Tested
Economic status: Not economically disadvantaged	2,099	1,781	85%	2,142	1,820	85%	2,018	1,580	78%
Economic status: Economically disadvantaged	3,870	3,594	93%	3,666	3,409	93%	3,312	2,857	86%
Primary disability: Intellectual disability	2,279	2,093	92%	2,255	2,084	92%	2,189	1,876	86%
Primary disability: Hearing impairment	50	47	94%	55	50	91%	58	50	86%
Primary disability: Speech or language impairment	117	109	93%	112	104	93%	51	46	90%
Primary disability: Visual impairment	24	18	75%	37	31	84%	42	29	69%
Primary disability: Emotional disturbance	58	48	83%	47	36	77%	65	39	60%
Primary disability: Orthopedic impairment	289	231	80%	274	214	78%	295	230	78%
Primary disability: Other health impairment	348	299	86%	318	280	88%	240	190	79%
Primary disability: Specific learning disability	448	423	94%	364	341	94%	334	275	82%
Primary disability: Deaf-blindness	NA	NA	NA	6	3	50%	3	3	100%
Primary disability: Multiple disabilities	324	263	81%	341	278	82%	292	230	79%
Primary disability: Autism	1,999	1,817	91%	1,973	1,785	90%	1,712	1,431	84%
Primary disability: Traumatic brain injury	33	27	82%	26	23	88%	49	38	78%
Primary disability: Not classified (changed or removed after student testing)	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix 2.C: Accessibility

Table 2.C.1 Assignment of Designated Supports and Accommodations—English Language Arts/Literacy (ELA), Grades Three through Six

Accessibility Resource	Grade 3: N	Grade 3: % of Total Tested	Grade 4: N	Grade 4: % of Total Tested	Grade 5: N	Grade 5: % of Total Tested	Grade 6: N	Grade 6: % of Total Tested
Embedded Accommodation—Streamlining	198	4%	207	4%	270	5%	276	5%
Non-Embedded Accommodation—Print on Demand	48	1%	81	2%	95	2%	98	2%
Non-Embedded Accommodation—Alternate Response Options	539	11%	610	11%	701	13%	648	12%
Non-Embedded Accommodation—Read Aloud	1,296	25%	1,484	28%	1,546	29%	1,465	27%
Non-Embedded Accommodation—Unlisted Resources	3	0%	8	0%	13	0%	0	0%
Non-Embedded Accommodation—Word Prediction	75	1%	58	1%	46	1%	52	1%
Non-Embedded Accommodation—Scribe	571	11%	614	12%	687	13%	589	11%
Non-Embedded Accommodation—Additional Instructional Supports for Alternate Assessments	667	13%	876	16%	776	15%	765	14%
Embedded Designated Support—Color Contrast	43	1%	53	1%	57	1%	67	1%
Embedded Designated Support—Masking	285	6%	326	6%	381	7%	419	8%
Embedded Designated Support—Mouse Pointer	50	1%	34	1%	33	1%	30	1%
Embedded Designated Support—Print Size	114	2%	148	3%	154	3%	190	4%
Embedded Designated Support—Permissive Mode	136	3%	130	2%	152	3%	146	3%
Embedded Designated Support—Turn off Any Universal Tool	0	NA	0	NA	0	NA	0	NA

Accessibility Resource	Grade 3: N	Grade 3: % of Total Tested	Grade 4: N	Grade 4: % of Total Tested	Grade 5: N	Grade 5: % of Total Tested	Grade 6: N	Grade 6: % of Total Tested
Non-Embedded Designated Support—Amplification	42	1%	20	0%	22	0%	30	1%
Non-Embedded Designated Support—Color Contrast	35	1%	45	1%	49	1%	55	1%
Non-Embedded Designated Support—Color Overlay	18	0%	24	0%	53	1%	42	1%
Non-Embedded Designated Support—Magnification	163	3%	164	3%	205	4%	216	4%
Non-Embedded Designated Support—Noise Buffers	472	9%	561	11%	564	11%	459	9%
Non-Embedded Designated Support—Read Aloud	1,359	27%	1,597	30%	1,893	36%	1,705	32%
Non-Embedded Designated Support—Scribe	593	12%	642	12%	786	15%	669	12%
Non-Embedded Designated Support—Separate Setting	1,439	28%	1,685	32%	1,843	35%	1,696	31%
Total Students Tested	5,102	NA	5,324	NA	5,330	NA	5,386	NA

Table 2.C.2 Assignment of Designated Supports and Accommodations—ELA, Grades Seven through Eight and Grade Eleven

Accessibility Resource	Grade 7: N	Grade 7: % of Total Tested	Grade 8: N	Grade 8: % of Total Tested	Grade 11: N	Grade 11: % of Total Tested
Embedded Accommodation—Streamlining	211	4%	174	3%	74	2%
Non-Embedded Accommodation—Print on Demand	97	2%	117	2%	41	1%
Non-Embedded Accommodation—Alternate Response Options	646	12%	591	11%	215	5%
Non-Embedded Accommodation—Read Aloud	1,509	28%	1,393	27%	630	14%
Non-Embedded Accommodation—Unlisted Resources	1	0%	2	0%	1	0%
Non-Embedded Accommodation—Word Prediction	54	1%	27	1%	57	1%
Non-Embedded Accommodation—Scribe	612	11%	522	10%	234	5%
Non-Embedded Accommodation—Additional Instructional Supports for Alternate Assessments	759	14%	635	12%	318	7%
Embedded Designated Support—Color Contrast	43	1%	44	1%	37	1%
Embedded Designated Support—Masking	411	8%	342	7%	154	3%
Embedded Designated Support—Mouse Pointer	28	1%	28	1%	37	1%
Embedded Designated Support—Print Size	185	3%	173	3%	87	2%
Embedded Designated Support—Permissive Mode	140	3%	132	3%	81	2%
Embedded Designated Support—Turn off Any Universal Tool	0	NA	0	NA	0	NA

Accessibility Resource	Grade 7: N	Grade 7: % of Total Tested	Grade 8: N	Grade 8: % of Total Tested	Grade 11: N	Grade 11: % of Total Tested
Non-Embedded Designated Support—Amplification	25	0%	30	1%	25	1%
Non-Embedded Designated Support—Color Contrast	49	1%	44	1%	21	0%
Non-Embedded Designated Support—Color Overlay	32	1%	44	1%	38	1%
Non-Embedded Designated Support—Magnification	213	4%	213	4%	111	2%
Non-Embedded Designated Support—Noise Buffers	482	9%	469	9%	207	5%
Non-Embedded Designated Support—Read Aloud	1,777	33%	1,632	31%	805	18%
Non-Embedded Designated Support—Scribe	678	13%	586	11%	282	6%
Non-Embedded Designated Support—Separate Setting	1,818	34%	1,668	32%	889	20%
Total Students Tested	5,383	NA	5,238	NA	4,457	NA

Table 2.C.3 Assignment of Designated Supports and Accommodations—Mathematics, Grades Three through Six

Accessibility Resource	Grade 3: N	Grade 3: % of Total Tested	Grade 4: N	Grade 4: % of Total Tested	Grade 5: N	Grade 5: % of Total Tested	Grade 6: N	Grade 6: % of Total Tested
Embedded Accommodation—Streamlining	197	4%	209	4%	267	5%	274	5%
Non-Embedded Accommodation—Print on Demand	47	1%	81	2%	95	2%	98	2%
Non-Embedded Accommodation—Alternate Response Options	538	11%	613	12%	694	13%	651	12%
Non-Embedded Accommodation—Unlisted Resources	3	0%	7	0%	13	0%	0	0%
Non-Embedded Accommodation—Word Prediction	75	1%	60	1%	47	1%	52	1%
Non-Embedded Accommodation—Additional Instructional Supports for Alternate Assessments	663	13%	875	16%	776	15%	764	14%
Non-Embedded Accommodation—Abacus	0	NA	0	NA	0	NA	0	NA
Non-Embedded Accommodation—Calculator	0	NA	0	NA	0	NA	0	NA
Non-Embedded Accommodation—Multiplication Table	0	NA	576	11%	857	16%	1035	19%
Non-Embedded Accommodation-100s Number Table	0	NA	743	14%	488	9%	475	9%
Embedded Designated Support —Color Contrast	41	1%	54	1%	57	1%	66	1%
Embedded Designated Support—Masking	287	6%	324	6%	379	7%	418	8%
Embedded Designated Support—Mouse Pointer	50	1%	35	1%	30	1%	29	1%
Embedded Designated Support—Print Size	115	2%	146	3%	153	3%	189	4%
Embedded Designated Support—Permissive Mode	128	3%	128	2%	151	3%	144	3%
Embedded Designated Support—Turn off Any Universal Tool	0	NA	0	NA	0	NA	0	NA

Accessibility Resource	Grade 3: N	Grade 3: % of Total Tested	Grade 4: N	Grade 4: % of Total Tested	Grade 5: N	Grade 5: % of Total Tested	Grade 6: N	Grade 6: % of Total Tested
Non-Embedded Designated Support—Amplification	42	1%	20	0%	21	0%	30	1%
Non-Embedded Designated Support—Color Contrast	34	1%	46	1%	49	1%	55	1%
Non-Embedded Designated Support—Color Overlay	17	0%	26	0%	53	1%	42	1%
Non-Embedded Designated Support—Magnification	162	3%	166	3%	203	4%	215	4%
Non-Embedded Designated Support—Noise Buffers	473	9%	562	11%	560	11%	461	9%
Non-Embedded Designated Support—Read Aloud	1,360	27%	1,593	30%	1,891	36%	1,705	32%
Non-Embedded Designated Support—Scribe	595	12%	640	12%	787	15%	671	13%
Non-Embedded Designated Support—Separate Setting	1,437	28%	1,680	32%	1,837	35%	1,690	31%
Total Students Tested	5,101	NA	5,309	NA	5,319	NA	5,366	NA

Table 2.C.4 Assignment of Designated Supports and Accommodations—Mathematics, Grades Seven through Eight and Grade Eleven

Accessibility Resource	Grade 7: N	Grade 7: % of Total Tested	Grade 8: N	Grade 8: % of Total Tested	Grade 11: N	Grade 11: % of Total Tested
Embedded Accommodation—Streamlining	212	4%	171	3%	75	2%
Non-Embedded Accommodation—Print on Demand	97	2%	115	2%	41	1%
Non-Embedded Accommodation—Alternate Response Options	644	12%	589	11%	217	5%
Non-Embedded Accommodation—Unlisted Resources	1	0%	2	0%	1	0%
Non-Embedded Accommodation—Word Prediction	54	1%	27	1%	57	1%
Non-Embedded Accommodation—Additional Instructional Supports for Alternate Assessments	752	14%	634	12%	320	7%
Non-Embedded Accommodation—Abacus	0	NA	0	NA	0	NA
Non-Embedded Accommodation—Calculator	0	NA	0	NA	0	NA
Non-Embedded Accommodation—Multiplication Table	1128	21%	1057	20%	455	10%
Non-Embedded Accommodation—100s Number Table	557	10%	178	3%	245	6%
Embedded Designated Support—Color Contrast	41	1%	45	1%	37	1%
Embedded Designated Support—Masking	410	8%	342	7%	155	3%
Embedded Designated Support—Mouse Pointer	30	1%	27	1%	38	1%
Embedded Designated Support—Print Size	181	3%	172	3%	91	2%
Embedded Designated Support—Permissive Mode	141	3%	136	3%	78	2%
Embedded Designated Support—Turn off Any Universal Tool	0	NA	0	NA	0	NA

Accessibility Resource	Grade 7: N	Grade 7: % of Total Tested	Grade 8: N	Grade 8: % of Total Tested	Grade 11: N	Grade 11: % of Total Tested
Non-Embedded Designated Support—Amplification	25	0%	28	1%	25	1%
Non-Embedded Designated Support—Color Contrast	49	1%	44	1%	22	1%
Non-Embedded Designated Support—Color Overlay	32	1%	44	1%	39	1%
Non-Embedded Designated Support—Magnification	211	4%	212	4%	112	3%
Non-Embedded Designated Support—Noise Buffers	481	9%	466	9%	208	5%
Non-Embedded Designated Support—Read Aloud	1,771	33%	1,618	31%	803	18%
Non-Embedded Designated Support—Scribe	673	13%	576	11%	281	6%
Non-Embedded Embedded Designated Support—Separate Setting	1,807	34%	1,660	32%	886	20%
Total Students Tested	5,375	NA	5,229	NA	4,437	NA

Chapter 3: Item Development and Review

This chapter provides an overview of the processes implemented by Educational Testing Service (ETS) to develop items for use on the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics. These processes include those that are entirely internal to ETS and those that are conducted in coordination with the California Department of Education (CDE), the American Institutes for Research, or both.

The chapter provides a brief description of each process and a summary of the associated specifications. More details about the specifications and the analyses associated with each process are described in other chapters that are referenced in the subsections that follow.

3.1. Item Development and Review

3.1.1. Overview

Each CAA for ELA and mathematics item is developed through a comprehensive cycle and designed to conform to principles of item writing defined by ETS. Each item in the CAA operational item bank was developed to measure a specific Core Content Connector (Connector) or the essential understanding (EU) of a Connector derived from the Common Core State Standards (CCSS). In addition, guidelines for style, fairness, and bias and sensitivity help item developers and reviewers ensure consistency across the item development process.

3.1.2. Item Specifications

ETS maintains item development specifications for the CAAs in ELA and mathematics. These specifications describe the characteristics of the items that should be written to measure each content standard and help ensure that all items developed for CAA measure the content standards consistently. Item writing emphasis is determined in consultation with the CDE.

The specifications include

- a full statement of each CCSS, Connector, and EU;
- a description of the item guidelines expected by tier for each standard;
- sample item stems for some standards;
- a general list of elements to avoid (e.g. for mathematics, the use of certain variables such as m and n in the same item, which can be difficult for students with visual impairments to distinguish);
- a description of the kinds of item stems, formats, or both stems and formats appropriate to assess each standard;
- a description of appropriate data representations (such as charts, tables, graphs, or other illustrations);
- the content limits of the standard (such as one or two variables, maximum place values of numbers);
- a description of appropriate reading passages, if applicable; and
- for ELA, guidelines for passages used to assess reading comprehension, including

- a list of topics to be avoided,
- the acceptable ranges for the number of words on a stimulus card,
- expected use of artwork, and
- the target number of tasks attached to each reading stimulus card.

3.1.3. Item Format

CAA items are designed to engage the target population. ELA and mathematics items are developed with the understanding that a test examiner delivers each item individually to a tested student and assists him or her in navigating through the test and recording the answer to each item. Note that item responses themselves must come from the student and not from prompting by the test examiner.

Students who are able may select responses using a mouse, touchscreen, or other supported input device. In some cases, students need to use other modes of communication, such as eye gaze or gesture, to indicate responses to the test examiner. The test examiner enters these responses into the testing device for the student.

The majority of items are presented in a split-screen format, with a “stimulus” on the left side of the screen and the item to be answered on the right. For ELA items, the stimulus is usually a passage or vocabulary set. For mathematics items, the stimulus is item-specific information or general mathematical knowledge. A selected number of items have a multimedia stimulus, either a short audio file, a video, an animation, or, for students with a visual impairment, alternative text read by the test examiner.

Items developed for the CAAs for ELA and mathematics may be scored as being worth one point or two points.

3.1.4. Item Types

Each Connector or EU may be assessed through one or more of nine available item types. An individual item may consist of one or more of the following:

1. **Multiple Choice (Single Select)**—Item that generally consists of a stem and a list of choices; the student can select only one choice (option) to respond. This type may also include a stimulus. Options use a radio button, but the student can select text or an image to fill in the radio button.
2. **Multiple Choice (Multiple Select)**—Item that generally consists of a stem and a list of choices; the student can select one or more choices (options) to respond. This type may also include a stimulus. Partial and summative scoring are available. Options use a radio button, but the student can select text or an image to fill in the button.
3. **Inline Choice List (Single Select)**—Item where the stem contains a single blank, and the student must fill the blank by selecting a choice from its corresponding choice list.
4. **Inline Choice List (Multiple Select)**—Item where the stem contains two or more blanks, and the student must fill each blank by selecting a choice from the corresponding choice lists. Partial and summative scoring are available.
5. **Numeric**—Item where the student responds by filling in a single entry box with a numeric value. The entry box may be standalone or in-line with text. Keys may be integers, decimals, fractions, or all or some of these.

6. **Grid Single Select**—Item where the student responds by marking a single cell in a table grid.
7. **Zone (Single Select)**—Item where the answer choices are predefined “hotspots” on an image. When the student selects (clicks on) the spot, the selection is highlighted, shaded, or outlined in red. The student selects one zone to respond.
8. **Zone (Multiple Select)**—Item where the answer choices are predefined “hotspots” on an image. When the student selects (clicks on) the spot, the selection is highlighted, shaded, or outlined in red. The student selects two or more zones to respond.
9. **Composite Objective**—Item that contains two or more item parts from the machine-scored list (item types 2–6 above); the item score, as a whole, is based on the student’s response to each individual part (machine scored).
10. **Match (Single Select)**—Item where the student responds by dragging and dropping a single choice (“source”) into the appropriate location (“target”).
11. **Match (Multiple Select)**—Item where the student responds by dragging and dropping two or more choices (“sources”) into the appropriate locations (“targets”).
12. **Bar Picturegraph (Single Select)**—Item where the student responds by manipulating a single bar on a graph.
13. **Bar Picturegraph (Multiple Select)**—Item where the student responds by manipulating two or more bars on a graph.

3.1.5. Selection of Item Writers

The items for the CAAs for ELA and mathematics are written by individual item writers with a thorough understanding of the Connectors and EU. Applications for item writing are screened by senior ETS content staff. Only those with strong content and teaching backgrounds are approved for inclusion in the training program for item writing. All item-writing participants are current or former California educators who are particularly knowledgeable about the standards assessed by the CAAs for ELA and mathematics and experienced with the test-taking population.

All item writers meet the following minimum qualifications:

- Possession of a bachelor’s degree in the relevant content area or in the field of education with special focus on a particular content area; an advanced degree in the relevant content is desirable
- Current teaching experience in California, when possible, especially experience teaching students with cognitive disabilities
- Previous experience or training in writing items for standards-based assessments, including knowledge of the many considerations that are important when developing items for special student populations
- Previous experience or training in writing items in the content areas covered by CAA grades, content areas, or both
- Familiarity, understanding, and support of the Connectors

3.2. Item Review Process

3.2.1. Overview

Items developed for the CAA for ELA and mathematics undergo an extensive item review process that is designed to provide the best standards-based assessments possible. This subsection summarizes the item review process that ensures the quality of CAA items.

Item writer submissions are carefully reviewed by ETS assessment specialists, who determine whether or not each item meets the criteria expected for submission, including accuracy and adherence to the item specifications. Items that do not meet minimal criteria are rejected, with notes for future revision submitted to authors. Items that meet the criteria are accepted into the pool and authored into the system.

Once an item is accepted for authoring—that is, once it has been entered into ETS' item bank and formatted for use in an assessment—ETS employs a series of internal reviews. These reviews use established criteria to judge the quality of item content and ensure that each item measures what it is intended to measure. These internal reviews also examine the overall quality of the test items before presentation to the CDE and California educators.

The ETS review process for the CAA includes the following:

1. Content review
2. Editorial review
3. Sensitivity review

Throughout this multistep item review process, the lead content-area assessment specialists and development team members continually evaluate the items in adherence to the rules for item development.

3.2.2. ETS Content Review

Items and stimuli undergo three reviews by content-area assessment specialists. These assessment specialists ensure that the items and stimuli are in compliance with ETS' written guidelines for clarity, style, accuracy, and appropriateness for California students as well as in compliance with the approved item specifications. Assessment specialists reviewed each item in terms of the following characteristics:

- Relevance of each item to the purpose of the test
- Match of each item to the item specifications, including the tier of item complexity
- Match of each item to the principles of quality item writing
- Match of each item to the identified standard or standards
- Difficulty of the item
- Accuracy of the content of the item
- Readability of the item or passage
- Grade-level appropriateness of the item
- Appropriateness of any illustrations, graphs, or figures

Each item is classified with the Connector, EU, or Connector and EU it is intended to measure. The assessment specialists check each item against its classification codes, both to evaluate the correctness of the classification and to ensure that the task posed by the item is relevant to the outcome it was intended to measure. The reviewers can accept the item and classification as written, suggest revisions, or recommend that the item be discarded. These steps occur prior to the CDE's review.

3.2.3. ETS Editorial Review

After the content-area assessment specialists review each item, a group of specially trained editors also review each item in preparation for consideration by the CDE and California educators. The editors check items for clarity, correctness of language, appropriateness of language for the grade level assessed, adherence to the style guidelines, and conformity with accepted item-writing practices.

3.2.4. ETS Sensitivity and Fairness Review

ETS assessment specialists who are specially trained to identify and eliminate questions that contain content or wording that could be construed to be offensive to or biased against members of specific ethnic, racial, or gender groups conduct the next level of review. These trained staff members review every item before the CDE and formal item reviews.

The review process promotes a general awareness of and responsiveness to the following:

- Diversity of background, cultural tradition, and viewpoints to be found in the test-taking population
- Changing roles and attitudes toward various groups
- Role of language in setting and changing attitudes toward various groups
- Contributions of diverse groups (including ethnic and minority groups, individuals with disabilities, and women) to the history and culture of the United States and the achievements of individuals within these groups
- Item accessibility for English learners

3.3. Content Expert Reviews

3.3.1. California Educators as Content Experts

Meetings with California educators are held at the end of the item review process as the final content expert review that items must undergo before being placed on an operational assessment. The California educators fill an advisory role to the CDE and ETS and provide guidance on matters related to item development for the CAAs for ELA and mathematics. These educators are responsible for reviewing all newly developed items for alignment to the California content standards. Meeting participants also review the items for the accuracy of content, clarity of phrasing, and quality. In their examination of test items, participants can raise concerns related to age or grade appropriateness and gender, racial, ethnic, or socioeconomic bias.

3.3.2. Composition of Item Review Meetings

California educators participating in item review meetings consist of current and former teachers, resource specialists, administrators, curricular experts, and other education professionals. Minimum qualifications to be invited to participate are

- three or more years of teaching experience in grades kindergarten through twelve and in the relevant content areas (ELA or mathematics),
- bachelor's or higher degree in a grade or content area related to ELA or mathematics, and
- knowledge and experience with the California content standards in ELA or mathematics.

Preferred qualifications include

- special education credential,
- experience with more than one type of disability, and
- three to five years of experience as a teacher or school administrator with a special education credential.

School administrators; local educational agency (LEA), county content, or program specialists; or university educators must meet the following qualifications to be invited to participate:

- Three or more years of experience as a school administrator; LEA, county content, or program specialist; or university instructor in a grade-specific area;
- Bachelor's or higher degree in a grade-specific; and
- Knowledge of and experience with the California content standards in ELA or mathematics.

Every effort is made to ensure that groups of item reviewers include a wide representation of genders and of the geographic regions and ethnic groups in California. Efforts also are made to ensure representation by members with experience serving California's diverse special education population.

[Table 3.1](#) shows the educational qualifications, present occupation, and credentials of the individuals who participated in CAA item review.

Table 3.1 CAA Item Review Qualifications, by Content Area and Total

Qualification Type	Qualification	ELA	Math	Total
Any	Total	26	27	53
Occupation	Teacher or Program Specialist, Elementary School	3	1	4
Occupation	Teacher or Program Specialist, Middle School	2	3	5
Occupation	Teacher or Program Specialist, High School	2	2	4
Occupation	Other District Personnel	0	2	2
Highest Degree Earned	Bachelor's Degree	4	0	4
Highest Degree Earned	Master's Degree	3	7	10
Highest Degree Earned	Doctorate	0	1	1
K–12 Teaching Credential	Elementary Teaching (multiple subjects)	4	2	6
K–12 Teaching Credential	Secondary Teaching (single subject)	0	1	1
K–12 Teaching Credential	Special Education	7	7	14
K–12 Teaching Credential	Reading Specialist	1	1	2
K–12 Teaching Credential	English Learner (CLAD, BCLAD)	0	0	0
K–12 Teaching Credential	Administrative	0	0	0
K–12 Teaching Credential	Other	0	0	0

Note: Numbers may not match the totals because members may have multiple occupations or teaching credentials, or are currently working toward earning their highest degree.

Item reviewers are recruited through an application process. Recommendations are solicited from LEAs and county offices of education as well as from the CDE. Applications are reviewed by ETS assessment directors, who confirm that an applicant's qualifications meet the specified criteria. Applicants who meet the criteria have their information forwarded to the CDE for further review and agreement before invitations to participate are distributed.

3.3.3. Meetings for Review of CAA for ELA and Mathematics Items

ETS content-area assessment specialists facilitate CAA for ELA and mathematics item review meetings. Each meeting begins with a brief training session on how to review items. ETS provides this training, which consists of the following topics:

- Overview of the purpose and scope of the CAA
- Overview of the CAA test design specifications and blueprints
- Analysis of the CAA item specifications
- Overview of criteria for evaluating test items
- Review and evaluation of items for bias and sensitivity issues

The criteria for evaluating items include the following:

- Overall technical quality
- Match to the Connectors
- Match to the construct being assessed by the standard
- Difficulty range
- Clarity
- Correctness of the answer
- Plausibility of the distractors
- Bias and sensitivity factors

Criteria also encompass more global factors, including the quality of the alternative text (that it describes an image in an age- and audience-appropriate manner within the context of the question) and, for ELA, the appropriateness, difficulty, and readability of reading passages. Meeting participants also are trained on how to make recommendations for revising items.

Guidelines for reviewing items are provided by ETS and approved by the CDE. The set of guidelines for reviewing items is summarized next.

Does the item

- have one and only one clearly correct answer for single-select items?
- measure the content standard?
- match the test item specifications?
- align with the construct being measured?
- test worthwhile concepts or information?

Is the stimulus, if any, for the item

- required in order to answer the item?
- likely to be interesting to students?
- clearly and correctly labeled?
- Providing all the information needed to answer the item?

3.4. Data Review Meetings

After items have been included in an operational test and administered to students, ETS prepares the items and the associated statistics for review by the CDE and California educators. Review materials include items with their statistical data along with annotated comment sheets for use by reviewers. ETS conducts an introductory training to highlight any new issues and serve as a statistical refresher. Reviewers then make decisions about which items should be included in the item bank for future assembly. If an item is considered problematic and not to be included in the item bank, it will be revised and once again follow the steps in the item development process, including field testing. ETS psychometric and content staff are available to reviewers throughout this process.

Chapter 4: Test Assembly

This chapter provides details of test assembly, including a description of the content being measured (i.e., test blueprints), the design of the multistage test (MST), and routing rules that guide students from Stage 1 to modules of Stage 2. The process of item selection, final reviews before test production, and the production process (e.g., preparation of the test forms for online test delivery) also are included.

4.1. Test Content Specifications and Test Blueprints

The California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics incorporate innovations and best practices from recent national alternate assessment initiatives, including the National Center and State Collaborative (NCSC) and the Dynamic Learning Maps. All items and tasks are developed to grade-level standards and the Core Content Connectors (Connectors) developed by the NCSC (NCSC, 2014a [reading], 2014b [writing], and 2014c [mathematics]). An essential understanding (EU) is identified for each Connector. EUs define a basic, foundational key idea or concept based on the Connector that builds increasing understanding of the grade-level content.

These Connectors are aligned with the Common Core State Standards (CCSS).

4.1.1. Test Content Specifications

The CAA assesses each CCSS through the NCSC-developed Connectors and EUs derived from the Connectors. These Connectors identify the most salient grade-level, core academic content in ELA and mathematics found in both the CCSS (Common Core State Standards Initiative, 2018) and the Learning Progression Frameworks (LPF) (NCSC, 2015), and illustrate the necessary knowledge and skills required in order to reach the learning targets within the LPF and the CCSS. Additionally, the Connectors focus on the core content, knowledge, and skills needed to help students at each grade level succeed; and identify priorities in each content area to guide the instruction for students in this population and for an alternate assessment. Finally, Connectors provide a foundation that permits teachers, parents/guardians, and the students themselves to help students with significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for post-secondary options (NCSC, 2015).

Each content standard is assessed through the Connectors and related EUs under a three-tier structure of item complexity. Detailed information on the tiered items is provided in subsection [4.2 Test Design](#).

4.1.2. Test Blueprints

The CAA test blueprints are unique to each grade level and content area (California Department of Education [CDE], 2015a [ELA] and 2015b [mathematics]). These blueprints designate the breakdown of each assessment, first by Content Category (for ELA) or Domain (for mathematics) and then by Connectors. Information on a test blueprint for a given grade and content area includes

- specific ratio of each content category and domain on overall test,
- specific Connectors to be assessed,
- specific EUs to be assessed, and
- the maximum number of items on a test.

A summary of blueprint alignment for the 2017–18 forms is presented in [Table 4.1](#), which shows the absolute percentage differences of items per content domain for each test between the 2017–18 form and the test blueprint. More information regarding the alignment of each CAA for ELA and mathematics test with the test blueprints is provided in [Table 4.A.1](#) through [Table 4.A.14](#) in [appendix 4.A](#). Similar information for the 2015–16 and 2016–17 forms is provided in [Table 4.A.15](#) and [Table 4.A.16](#).

Overall, the percent of items per content domain based on the Connector assigned during item development and those in the CAA blueprint are comparable—differences are less than 10 percent, with only one exception of 10 percent—for all grades in the 2017–18 administration.

Table 4.1. Absolute Percentage Differences of Items per Content Domain for the 2017–18 Administration

2017–18	Router + Easy	Router + Moderate	Router + Hard
ELA 3	1%~2%	1%~6%	1%~2%
ELA 4	3%~10%	1%~6%	1%~6%
ELA 5	2%~2%	2%~2%	2%~2%
ELA 6	0%~2%	0%~2%	0%~2%
ELA 7	0%~2%	0%~6%	2%~6%
ELA 8	0%~2%	0%~2%	0%~2%
ELA 11	1%~2%	1%~3%	1%~2%
Mathematics 3	0%~2%	0%~2%	0%~2%
Mathematics 4	0%~2%	0%~3%	0%~3%
Mathematics 5	0%~2%	0%~2%	0%~2%
Mathematics 6	0%~2%	0%~2%	0%~2%
Mathematics 7	0%~3%	0%~3%	0%~3%
Mathematics 8	0%~2%	0%~5%	0%~2%
Mathematics 11	0%~3%	0%~3%	0%~3%

4.2. Test Design

4.2.1. Multistage Test (MST) Design

As the simplest and most robust form of adaptive testing, an MST design consists of a number of modules. Each module can be assembled to meet a set of specifications such as item content and item difficulty and complexity; refer to subsection [3.1.2 Item Specifications](#) for additional information about the item specifications.

Educational Testing Service (ETS) employs a two-stage MST design for the CAAs for ELA and mathematics. Students at different ability levels, based on their performance on Stage 1, are routed to one of three alternative modules at Stage 2 that is appropriate for their abilities.

This design improves measurement quality and student engagement, particularly for students who represent a diverse population with a wide range of ability levels and whose ability levels may not be appropriately targeted by conventional fixed-form tests. It allows test developers to develop thoughtful test item sets (modules) that maximize the information provided about a student by routing students to test modules appropriate for their ability

levels. Compared with the fixed-form tests, the MST design provides a better balance between test standardization and individual customization.

The CAAs for ELA and mathematics test assembly design meets content and psychometric requirements for items and forms. The design contains a number of important features that are described in the following subsections.

4.2.1.1. Tiered Items

An important feature of the CAAs for ELA and mathematics MST is the usage of tiered items. Given that the target population encompasses many types of cognitive disabilities and an extremely wide range of abilities, items developed to three tiers of complexity are organized in order of increasing complexity and cognitive load. Items developed at Tier 1, considered the most accessible level, typically rely heavily on graphics. Items developed at Tier 2, considered the middle level, typically use a mix of graphics and text. Items developed at Tier 3, which is considered the most challenging level (with increased rigor and difficulty), rely more on text and less on graphics than the lower tiers. Typically:

- A Tier 1 item would provide images with dichotomous answer choices.
- A Tier 2 item would provide three answer choices with fewer images.
- A Tier 3 item would provide three or more answer choices with more complicated text and the fewest images.

As the text complexity increases for higher tier levels, the length of passages in an ELA assessment also increases. Within the same grade level, relatively speaking, a Tier 1 ELA passage contains few sentences with heavy use of graphics. A Tier 2 passage typically contains several sentences with fewer graphics. A Tier 3 passage contains a paragraph or two of text with less reliance on graphics.

Beginning in the 2017–18 development cycle, CAAs for ELA and mathematics item specifications were updated to reflect a desire for lower language complexity in these CAA content areas. The rationale behind the request was to make the items more accessible to this population. ETS made efforts to make sure that complexity is reflected in the rigor of the tasks and not in the wording and sentence structure of the item. This was achieved by reducing the amount of the text in items, as well as the elimination of high-vocabulary words. These lower text-complexity items were used as embedded field test items and in the Stage 2 modules as items without statistics.

4.2.1.2. Modules

Items and passages from each tier are carefully assembled into modules for both stages of CAAs for ELA and mathematics delivery. The Stage 1 module consists of a total of 14 items, of which 10 are operational items and 4 are embedded field test items. The operational portion of the Stage 1 module is the router with six Tier 1 items appearing first followed by four Tier 2 items. Five versions of the Stage 1 module were administered; they differed only in regard to the embedded field test items. Thus, each Stage 1 module version had the same operational items but different embedded field test items.

The five versions of the Stage 1 modules are randomly assigned at the school level statewide during online administration. In addition, the Stage 1 router is divided into two sections, Stage 1A and Stage 1B, where Stage 1A consists of the first four operational items, of which all four items are at Tier 1. Stage 1A is the Student Response Check (SRC), whereby a student's testing experience could end if he or she could not orient successfully

or provide a consistent response to any of the easiest items administered. Stage 1B consists of the remaining six operational items, of which the first two items are Tier 1 and the remaining four are Tier 2. Refer to subsection [4.2.2 ELA and Mathematics Test Design](#) for more information.

At Stage 2, each of the three modules—easy, moderate, and hard—is tailored to a particular student ability level with appropriate item sets. Each Stage 2 module consists of approximately 7 to 10 items with statistics and an average of 5 to 8 items without prior statistics. Due to the small number of items in the existing item bank, there is a small subset of items that are classified as operational even though they have no prior statistics.⁵ Items with prior statistics at Stage 1 or Stage 2 are eligible for use as anchor items in post-equating to link all operational items without prior statistics and embedded field test items on the baseline scale.

4.2.1.3. Embedded Field Test

Embedded field testing is a preferred method for building an item bank because the items are administered within an operational test setting. The field test items are not counted toward student scores. For the 2017–18 CAAs for ELA and mathematics administration, four field test items are embedded at Stage 1. Scores from these items are not included in routing decisions from Stage 1 to Stage 2.

For the CAA Stage 1 router, one core module is administered with 10 operational items that are common across five versions that support five different embedded field test sets of four items each. The five versions of Stage 1 modules are distributed by random assignment at the school level so that a large representative sample of students respond to the field test items embedded in these versions. The random assignment of specific versions ensures that a diverse sample of students take each field test set. The students do not know which items are being field tested and which items are operational; therefore, their motivation is not expected to differ over the two types of items (Patrick & Way, 2008).

4.2.1.4. Pathways

The Stage 1 and Stage 2 module combination administered to any one student is called a “pathway.” The pathway varies depending on a student’s performance on the items and the routing rules. The two-stage MST design with the Stage 1 router and three modules at Stage 2 generates four possible pathways, including an early exit pathway, defined by a student exit from the test after Stage 1.

The four possible pathways can be regarded as multiple forms of a linear test. Each MST pathway combination of the Stage 1 and Stage 2 modules is shown in [Table 4.2](#).⁶

⁵ Some Stage 2 modules had as few as three items without statistics.

⁶ Students who answer fewer than four items at Stage 1 are considered as “partial completers”; students who do not answer any items are considered as “non-completers.” “Non-completers” and “partial completers” receive the lowest possible scale score. Therefore, scores of such students are not included in the analysis. Refer to subsection [7.1.1 Incomplete and Complete Cases](#) for a list of cases where the tests are considered as “incomplete.”

Table 4.2 Four Effective Unique Forms for Each Grade and Test Configuration

Pathway	Effective Unique Form	Configuration
1.	ABO	Stage 1 items and end the test
2.	ABE	Stage 1 items and Stage 2 easy items
3.	ABM	Stage 1 items and Stage 2 medium items
4.	ABH	Stage 1 items and Stage 2 hard items

4.2.2. ELA and Mathematics Test Design

For the 2017–18 CAA administration in ELA and mathematics, most students were required to complete a full-length test: the routing test in Stage 1A and Stage 1B, as well as one of the three modules in Stage 2.

The CAAs for ELA and mathematics are designed as follows:

1. Stage 1
 - a. SRC with the four easiest Tier 1 items; router Stage 1A
 - b. Two to three Tier 1 items, three to four Tier 2 items, and three embedded field test items; router Stage 1B
2. Stage 2
 - a. Module 1—Easy
 - 15 operational items
 - Seven to 10 operational items with statistics from the 2015–16 or 2016–17 operational administration
 - Five to eight operational items without prior statistics
 - Nine Tier 1 items
 - Six Tier 2 items
 - b. Module 2—Moderate
 - 15 operational items
 - Seven to 10 operational items with statistics from the 2015–16 or 2016–17 operational administration
 - Five to eight operational items without prior statistics
 - Three Tier 1 items
 - Nine Tier 2 items
 - Three Tier 3 items
 - c. Module 3—Hard
 - 15 operational items
 - Seven to 10 operational items with statistics from the 2015–16 or 2016–17 operational administration

- Five to eight operational items without prior statistics
 - Six Tier 2 items
 - Nine Tier 3 items

4.2.2.1. Stage 1 Design

Stage 1A comprises the SRC, which consists of the four easiest Tier 1 items based on the item response theory (IRT) b -parameter values. For students who do not provide observable and reasonable responses to the items, test examiners are directed to end the assessment using the **[End Test]** button. These checks occur at the first item and the fourth item. The responsibilities of test examiners regarding these checks can be found in subsection [5.1 Test Administration](#) in [Chapter 5: Test Administration](#).

Students who do not pass the SRC are exited from the test. Stage 1B consists of six operational items with prior statistics. After the last item of Stage 1, the results from the router are used to identify students for whom meaningful measurement is unlikely to occur. These students are exited from the test instead of proceeding to Stage 2. Continuing students are routed to one of the three Stage 2 modules. Refer to subsection [7.1.1 Incomplete and Complete Cases](#) for the scoring of each situation described above.

4.2.2.2. Stage 2 Design

At Stage 2, the three modules are defined as Module 1 (Easy), Module 2 (Moderate), or Module 3 (Hard). Module 1 consists of approximately nine Tier 1 items and six Tier 2 items. Module 2 consists of approximately three Tier 1 items, nine Tier 2 items, and three Tier 3 items. Module 3 consists of approximately six Tier 2 items and nine Tier 3 items. Students are routed to one of the three modules of Stage 2 based on their performance on the Stage 1 router.

4.2.2.3. Survey of Student Characteristics (SSC)

The SSC includes three questions embedded within the assessment as the last segment of the test. The SSC is not presented to students who do not respond or orient; their testing is terminated at Item 1 or Item 4. The SSC allows a test examiner to describe the student's engagement on the test. The text of the three SSC questions is as follows:

- 1) Did you end this test early because the student's productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?
 - Yes
 - No
- 2) Please indicate your student's mode(s) of communication that was used on this test. (Select all that apply)
 - Student used a mouse, touchscreen, and/or a computer keyboard to enter responses directly in the system.
 - Student provided a verbal response.
 - Student used gestures or pointed to indicate a response.
 - Student used the accommodation of print on demand and responded (check, circle, fill-in, etc.) on paper.

- Student used an assistive/augmentative communication device.
- Student used eye gaze.
- Other

3) How engaged was your student with this test you just administered?

- 0 – not engaged at all
- 1 – minimally engaged
- 2 – moderately engaged
- 3 – fully engaged

The summary of the SSC data results is provided in subsection [8.7.5.1 Survey of Student Characteristics \(SSC\)](#).

4.2.3. Routing Rules for the 2017–18 Administration

Given that the CAA-eligible population consists of students with a wide range of cognitive disabilities, routing rules are used to minimize the test-taking burden on students, in addition to directing students to the modules that fit their ability levels. Students experiencing difficulties with the simplest tasks should not continue with more complex items. Each student should be routed to a module that is appropriate for his or her ability level.

The routing rules for the 2017–18 CAAs for ELA and mathematics administration are illustrated in [Table 4.3](#). The early exit routing rule is designed for students who demonstrate the ability to communicate and provide responses but have significant difficulties successfully completing Tier 1 items. The first threshold, t_1 , based on his or her performance on the router portion of Stage 1, determines whether a student will end the test early or continue to one of the three Stage 2 modules. The intent is to end the test early for those students who are most likely to find the second-stage testing more stressful than productive or are otherwise unable to engage with the content. For those students who continue to Stage 2, the remaining thresholds, t_2 and t_3 , determine which of the available pathways will be taken.

Table 4.3 Routing Rule Summary for the 2017–18 Administration

Condition	Decision
Router score is less than t_1	End the test after Stage 1.
Router score is greater than or equal to t_1 and less than t_2	Continue the test with Module 1 in Stage 2.
Router score is greater than or equal to t_2 and less than t_3	Continue the test with Module 2 in Stage 2.
Router score is greater than or equal to t_3	Continue the test with Module 3 in Stage 2.

The routing thresholds were estimated through a simulation using the 2016–17 CAAs for ELA and mathematics administration data. In this simulation, student ability distributions were estimated for each grade level and content area. Observed ability estimates for all scored students were tabulated and then smoothed through kernel smoothing methods (ETS, 2011). The IRT item parameters used for the simulation evaluation were estimated from the 2015–16 or 2016–17 administration. If statistics for both 2015–16 and 2016–17 administrations were available, then the most recent statistics were used.

Each simulated student was administered all items in the full MST, including the router portion of Stage 1 and all three Stage 2 modules. Following the simulation of each test, aggregated results across all the simulated students were collected, including the true ability, the score on the router portion of Stage 1, and the overall score across all modules in the full MST (a total of 55 items). For the current assessment, an ideal set of threshold values are chosen to maximize the test reliability, proportion of productive tests, and test information function by ensuring that each student is routed to the most informative Stage 2 module. The final thresholds of routing are determined in consultation with the CDE.

The raw score point values in the router portion of Stage 1 are used by the routing engine in the test delivery system to determine routing pathways for students. The router includes both 1-point and 2-point items, and the router score is the sum of item scores from the 10 operational items in the router. For example, the maximum score points for the Stage 1 for grade three ELA is 15. When a student earns fewer than 3 score points, the student's testing experience ends. When a student earns greater than or equal to 3 and fewer than 11 score points, he or she is routed to the easy Stage 2 module. When a student earns greater than or equal to 11 and fewer than 14 score points, he or she is routed to the moderate Stage 2 module. When a student earns 14 or more score points, he or she is routed to the hard Stage 2 module. A summary of the routing thresholds is presented in [Table 4.C.1](#) and [Table 4.C.2](#) in [appendix 4.C](#).

4.3. Test Production Process

4.3.1. Psychometric Criteria and Identification of Eligible Items

In addition to the blueprints (CDE, 2015a [ELA] and 2015b [mathematics]) and test design documents, statistical guidelines were developed by the ETS psychometrics team to assist in test assembly. The guidelines include the following:

- The first four items in Stage 1 comprise the SRC, which must have prior item statistics.
- Seven to 10 of the 15 items in each Stage 2 module must have prior item statistics. Items can be shared across the modules in the following ways:
 - Items included in both Easy and Moderate modules are Tier 1, Tier 2, or both types of items.
 - Items included in both Moderate and Hard modules are Tier 2, Tier 3, or both types of items.
- Any item that has prior item statistics will be used as an anchor item to place the 2017–18 tests onto the baseline scale.
- Any previously administered item that requires editing and additional field testing due to a flaw in the item cannot be used as an anchor item. The item sets that require additional field testing should be placed in Stage 2 only.
- Each test pathway with 25 items should conform to the specifications in the test blueprint.

Refer to [appendix 4.B](#) for a description of the statistical specifications used during development of the CAAs for ELA and mathematics.

4.3.2. Selection of Items

From the eligible item pool, test developers select items that, as a whole

- meet the coverage specifications of the test blueprint,
- meet the form-building guidelines developed by the ETS psychometrics team,
- represent a wide variety of item types, and
- provide a wide variety of item context.

4.3.3. Verification of Statistics

ETS test developers send the proposed assessment to the ETS psychometrics team for approval. The proposed assessment is reviewed to ensure that all statistical guidelines are met for both individual items and the assessment as a whole.

4.3.4. Content Review of Forms

After psychometric approval, the proposed assessment undergoes two additional content reviews and one editorial review. The form reviewers are content specialists who work on testing programs other than the CAA for ETS, and who thereby are able to bring a set of “fresh eyes” to the review. They are given the appropriate materials to verify the following:

- Verification of item keys
- Identification of possible clueing across the items
- Verification that individual items meet the standard
- Verification of coverage of the standards
- Identification of any possible grammatical or production errors

4.3.5. CDE Review of Forms

Following the ETS content review, all proposed assessments are sent to the CDE for review to ensure the proposed assessments meet CAAs for ELA and mathematics test blueprint requirements and to check there is no clueing between items or statistical issues. The CDE is provided with the following materials:

- Hardcopies of the proposed forms
- Modified form planners
- Comment sheets

Comments from the CDE are resolved during a virtual meeting with the ETS test development team.

4.3.6. Configuration of the Test Delivery System (TDS)

Once all the test reviews are completed and concerns, if any, have been resolved, the official ordered item sequence of the proposed forms are sent to the American Institutes for Research (AIR) for configuration of the test delivery system (TDS).

AIR’s TDS supports a variety of item layouts. Most of the item layouts have the stimulus and item response options and response area displayed side by side. In each of these item layouts, both the stimulus and response options have independent scroll bars. Each item undergoes an extensive platform review on different operating systems such as Windows, Linux, and iOS, to ensure that the item looks consistent across all platforms.

The platform review is conducted by a team at AIR consisting of a team leader and several team members. The team leader presents the item as it was approved in ETS and AIR item banks. Each team member is assigned a different platform—hardware device and operating system—and reviews the item to see that it renders as expected. This platform review

meeting ensures that all items will be presented consistently to all students regardless of testing device or operating system for standardization of the test administration.

Prior to operational deployment, the testing system and content are deployed to a staging server where they are subject to user acceptance testing (UAT) by both ETS and AIR staff. The TDS UAT serves as both a software evaluation and a content approval role.

The UAT procedures followed by the ETS staff include reviewing all items for ELA and mathematics. The possible routing outcomes, in conjunction with the separate grade- and version-specific *CAA Directions for Administration* manuals, are also checked.

Following the UAT by ETS and AIR staff, separate UAT cycles are conducted by the CDE. The UAT review provides the CDE with an opportunity to interact with the exact test that will be administered to the students. The CDE must approve the CAA UAT before the test can be released for administration to students.

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Appendix 4.A: Test Blueprints Alignment by California Alternate Assessment (CAA) Form

Notes:

- ABO refers to Stage 1 Items Only.
- ABE refers to Stage 1 + Stage 2 Easy Module.
- ABM refers to Stage 1 + Stage 2 Moderate Module.
- ABH refers to Stage 1 + Stage 2 Hard Module.

Table 4.A.1 Test Blueprints Alignment by Form—English Language Arts/Literacy (ELA), Grade Three

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	30%	4	40%	7	28%	7	28%	7	28%
Reading: Informational	25%	1	10%	6	24%	6	24%	6	24%
Reading: Vocabulary	9%	2	20%	2	8%	2	8%	2	8%
Reading: Foundation	6%	0	0%	2	8%	1	4%	2	8%
Writing	30%	3	30%	8	32%	9	36%	8	32%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.2 Test Blueprints Alignment by Form—ELA, Grade Four

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	30%	2	20%	9	36%	9	36%	9	36%
Reading: Informational	25%	3	30%	5	20%	6	24%	5	20%
Reading: Vocabulary	9%	1	10%	3	12%	2	8%	2	8%
Reading: Foundation	6%	1	10%	3	12%	2	8%	2	8%
Writing	30%	3	30%	5	20%	6	24%	7	28%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.3 Test Blueprints Alignment by Form—ELA, Grade Five

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	30%	3	30%	8	32%	8	32%	7	28%
Reading: Informational	30%	3	30%	7	28%	7	28%	8	32%
Reading: Vocabulary	10%	1	10%	2	8%	2	8%	3	12%
Writing	30%	3	30%	8	32%	8	32%	7	28%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.4 Test Blueprints Alignment by Form—ELA, Grade Six

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	20%	2	20%	5	20%	5	20%	5	20%
Reading: Informational	40%	5	50%	10	40%	10	40%	10	40%
Reading: Vocabulary	10%	0	0%	3	12%	2	8%	2	8%
Writing	30%	3	30%	7	28%	8	32%	8	32%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.5 Test Blueprints Alignment by Form—ELA, Grade Seven

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	20%	4	40%	5	20%	5	20%	6	24%
Reading: Informational	40%	2	20%	10	40%	9	36%	11	44%
Reading: Vocabulary	10%	0	0%	3	12%	2	8%	1	4%
Writing	30%	4	40%	7	28%	9	36%	7	28%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.6 Test Blueprints Alignment by Form—ELA, Grade Eight

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	20%	2	20%	5	20%	5	20%	5	20%
Reading: Informational	40%	4	40%	10	40%	10	40%	10	40%
Reading: Vocabulary	10%	1	10%	2	8%	2	8%	2	8%
Writing	30%	3	30%	8	32%	8	32%	8	32%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.7 Test Blueprints Alignment by Form—ELA, Grade Eleven

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	15%	0	0%	4	16%	3	12%	4	16%
Reading: Informational	45%	6	60%	11	44%	11	44%	11	44%
Reading: Vocabulary	10%	1	10%	2	8%	3	12%	3	12%
Writing	30%	3	30%	8	32%	8	32%	7	28%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.8 Test Blueprints Alignment by Form—Mathematics, Grade Three

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Operational & Algebraic Thinking	30%	2	20%	7	28%	8	32%	7	28%
Numbers & Operations in Base Ten and Fractions	40%	4	40%	10	40%	10	40%	10	40%
Measurement & Data and Geometry	30%	4	40%	8	32%	7	28%	8	32%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.9 Test Blueprints Alignment by Form—Mathematics, Grade Four

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Operational & Algebraic Thinking	35%	2	20%	9	36%	8	32%	9	36%
Numbers & Operations in Base Ten and Fractions	30%	1	10%	7	28%	8	32%	8	32%
Measurement & Data and Geometry	35%	7	70%	9	36%	9	36%	8	32%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.10 Test Blueprints Alignment by Form—Mathematics, Grade Five

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Operational & Algebraic Thinking	10%	1	10%	3	12%	3	12%	3	12%
Numbers & Operations in Base Ten and Fractions	60%	6	60%	15	60%	15	60%	15	60%
Measurement & Data and Geometry	30%	3	30%	7	28%	7	28%	7	28%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.11 Test Blueprints Alignment by Form—Mathematics, Grade Six

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Ratios and Proportional Relationships	30%	5	50%	8	32%	8	32%	8	32%
The Number System	30%	4	40%	7	28%	8	32%	7	28%
Expressions & Equations	20%	0	0%	5	20%	5	20%	5	20%
Geometry	10%	1	10%	3	12%	2	8%	3	12%
Statistics & Probability	10%	0	0%	2	8%	2	8%	2	8%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.12 Test Blueprints by Form—Mathematics, Grade Seven

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Ratios and Proportional Relationships	40%	5	50%	10	40%	10	40%	10	40%
The Number System	15%	1	10%	4	16%	4	16%	4	16%
Expressions & Equations	15%	1	10%	4	16%	3	12%	3	12%
Geometry	15%	1	10%	3	12%	4	16%	4	16%
Statistics & Probability	15%	2	20%	4	16%	4	16%	4	16%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.13 Test Blueprints Alignment by Form—Mathematics, Grade Eight

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
The Number System	10%	0	0%	2	8%	2	8%	3	12%
Expressions & Equations and Functions	35%	4	40%	9	36%	10	40%	9	36%
Geometry	30%	3	30%	8	32%	7	28%	7	28%
Statistics & Probability	25%	3	30%	6	24%	6	24%	6	24%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.14 Test Blueprints Alignment by Form—Mathematics, Grade Eleven

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Number and Quantity: The Real Number System and Quantities	25%	3	30%	7	28%	6	24%	6	24%
Algebra: Creating Equations, and Functions: Interpreting Functions	40%	6	60%	10	40%	10	40%	10	40%
Geometry: Similarity, Right Triangles, and Trigonometry	10%	0	0%	2	8%	2	8%	2	8%
Statistics and Probability: Interpreting Categorical and Quantitative Data	25%	1	10%	6	24%	7	28%	7	28%
Total	100%	10	100%	25	100%	25	100%	25	100%

Table 4.A.15 Absolute Percentage Differences of Items per Domain for 2015–16 Administration

2015–16	R1+Easy	R1+Moderate	R1+Hard	R2+Easy	R2+Moderate	R2+Hard
ELA 3	0%~3%	0%~5%	0%~3%	0%~3%	0%~5%	0%~3%
ELA 4	0%~2%	0%~4%	0%~4%	0%~2%	0%~4%	0%~4%
ELA 5	0%~3%	0%~3%	0%~11%	0%~3%	0%~3%	0%~7%
ELA 6	0%~19%	0%~8%	3%~12%	0%~12%	0%~3%	2%~4%
ELA 7	0%~9%	1%~3%	1%~3%	0%~9%	1%~3%	1%~3%
ELA 8	1%~8%	1%~10%	1%~8%	1%~8%	1%~8%	1%~8%
ELA 11	1%~11%	1%~15%	1%~11%	3%~8%	3%~11%	3%~8%
Mathematics 3	2%~3%	2%~3%	2%~3%	0%~2%	0%~2%	0%~2%
Mathematics 4	0%~3%	0%~3%	0%~3%	1%~4%	1%~4%	1%~4%
Mathematics 5	0%~4%	0%~4%	0%~4%	0%~4%	0%~4%	0%~4%
Mathematics 6	1%~5%	1%~5%	1%~5%	1%~8%	1%~8%	1%~8%
Mathematics 7	2%~9%	2%~9%	2%~9%	0%~7%	0%~7%	0%~7%
Mathematics 8	0%~6%	0%~6%	0%~6%	2%~3%	2%~3%	2%~3%
Mathematics 11	1%~9%	1%~9%	1%~9%	1%~6%	1%~6%	1%~6%

Table 4.A.16 Absolute Percentage Differences of Items per Domain for the 2016–17 Administration

2016–17	Router + Easy	Router + Moderate	Router + Hard
ELA 3	1%~6%	1%~3%	1%~10%
ELA 4	1%~3%	1%~3%	1%~2%
ELA 5	2%~2%	2%~2%	2%~2%
ELA 6	0%~6%	0%~2%	0%~6%
ELA 7	0%~2%	0%~2%	0%~2%
ELA 8	0%~2%	0%~2%	0%~2%
ELA 11	1%~2%	1%~2%	1%~2%
Mathematics 3	0%~2%	0%~2%	0%~2%
Mathematics 4	1%~3%	1%~3%	1%~3%
Mathematics 5	0%~2%	0%~2%	0%~2%
Mathematics 6	0%~2%	0%~2%	0%~2%
Mathematics 7	0%~3%	0%~5%	0%~3%
Mathematics 8	1%~2%	1%~2%	1%~2%
Mathematics 11	0%~2%	0%~2%	0%~2%

Appendix 4.B: Statistical Specifications for 2017–18 Test Development

Test assembly must follow guidelines to ensure the validity and reliability of test scores. These guidelines fall into two major categories: content-related and psychometric guidelines. Content-related guidelines ensure the appropriateness of item content and the alignment with standards. Psychometric guidelines provide specifications on statistical properties of the items, modules, and the entire MST.

The purpose of this specification is to summarize the specific *statistical* properties that were met when selecting items for the 2017–18 CAAs.

Statistical Properties of Individual Items

Individual items need to satisfy a number of statistical specifications to be usable in the forms.

1. Average Item Score (AIS) Range

Items that are too difficult or too easy, indicated by a low or high AIS, should not be used as they serve little purpose of differentiating test takers' abilities. The acceptable AIS range is generally between .10 and .95 for 1-point multiple-choice items and between .2 and 1.90 for 2-point items.

2. Polyserial Correlations

Nondiscriminating items, indicated by a low polyserial correlation value, should not be used. For test assembly, the recommended minimum polyserial correlation value is .20. However, given the limited number of CAA items in the item bank, for the spring 2017–18 administration, items with a polyserial correlation value between .10 and .20 could be included on the CAA forms to ensure complete test content coverage.

3. Differential Item Functioning (DIF)

Items analyzed for DIF at ETS are classified into one of three categories, A, B, or C. Category A indicates that DIF is negligible or nonsignificant, Category B indicates that DIF is slight to moderate, and Category C indicates that DIF is moderate to large. In addition, when DIF is detected, a plus or minus sign is often used in conjunction with the specific DIF category to indicate the direction of DIF: Classifications of B- or C- indicate DIF is in favor of the reference group; classifications of B+ and C+ indicate DIF is in favor of the focal group. Items that function differentially across different demographic examinee student groups that have similar overall test performance should not be used.

An item classified into category C shows moderate to large DIF and should not be included in the operational form. If it is absolutely necessary to include an item exhibiting C-DIF on a test or if such an item is found on an operational form, the item must be reviewed by a panel that includes members of the focal group(s) affected. The members of the panel should not have a vested interest in the outcome of the decision. If no explanation for the DIF can be found, the item may be scored if in an operational form or may appear on the assembled test. In the latter case, the inclusion of no C-DIF items is preferred because this circumstance is beyond reproach in most cases. Additionally, if an item exhibiting C-DIF must be selected, then a balance with regard to the C-DIF item should be considered; that is, C-DIF items should not be all C- or all C+.

Appendix 4.C: Routing Thresholds

Table 4.C.1 CAA for ELA Routing Thresholds

Test	Stage 1	Stage 2–Easy	Stage 2–Moderate	Stage 2–Hard
ELA 3	RS < 3	3 ≤ RS < 11	11 ≤ RS < 14	RS ≥ 14
ELA 4	RS < 3	3 ≤ RS < 9	9 ≤ RS < 12	RS ≥ 12
ELA 5	RS < 4	4 ≤ RS < 12	12 ≤ RS < 15	RS ≥ 15
ELA 6	RS < 3	3 ≤ RS < 8	8 ≤ RS < 13	RS ≥ 13
ELA 7	RS < 3	3 ≤ RS < 9	9 ≤ RS < 12	RS ≥ 12
ELA 8	RS < 4	4 ≤ RS < 11	11 ≤ RS < 14	RS ≥ 14
ELA 11	RS < 3	3 ≤ RS < 9	9 ≤ RS < 13	RS ≥ 13

Note: RS indicates the raw score of 10 operational items in the router portion of Stage 1.

Table 4.C.2 CAA for Mathematics Routing Thresholds

Test	Stage 1	Stage 2–Easy	Stage 2–Moderate	Stage 2–Hard
Mathematics 3	RS < 2	2 ≤ RS < 6	6 ≤ RS < 9	RS ≥ 9
Mathematics 4	RS < 2	2 ≤ RS < 9	9 ≤ RS < 13	RS ≥ 13
Mathematics 5	RS < 2	2 ≤ RS < 7	7 ≤ RS < 11	RS ≥ 11
Mathematics 6	RS < 2	2 ≤ RS < 7	7 ≤ RS < 10	RS ≥ 10
Mathematics 7	RS < 3	3 ≤ RS < 7	7 ≤ RS < 11	RS ≥ 11
Mathematics 8	RS < 2	2 ≤ RS < 7	7 ≤ RS < 11	RS ≥ 11
Mathematics 11	RS < 2	2 ≤ RS < 7	7 ≤ RS < 10	RS ≥ 10

Note: RS indicates the raw score of 10 operational items in the router portion of Stage 1.

Chapter 5: Test Administration

This chapter provides an overview of the test administration of the 2017–18 California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics and includes a system functionality overview, descriptions of the efforts and measures to ensure test security, procedures to maintain standardization, and procedures for implementation of test accommodations based on the *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014, Chapter 6).

5.1. Test Administration

The window for 2017–18 administration of the CAAs for ELA and mathematics was January 9 through July 16, 2018. Specific test administration schedules within that window were determined locally pursuant to the *California Code of Regulations*, Title 5 (5 CCR), Sections 855(a)(1), 855(a)(2), 855(b), and 855(c).

To ensure the 2017–18 test administration was a successful experience for CAA test examiners and students, Educational Testing Service (ETS) provided an online, self-guided training tutorial for CAA test examiners as well as on-site test administration workshops in various locations throughout California in January and February 2018. ETS also produced webcasts and videos for detailed information on California Assessment of Student Performance and Progress (CAASPP) test administration procedures. The on-site workshops included a session dedicated exclusively to the topic of the CAA test administration procedures. In addition, ETS developed and posted a number of test administration resources for schools and LEAs on both the public website on caaspp.org and on the secure Test Operations Management System (TOMS) website. These resources included detailed information on topics such as technology readiness, test administration, test security, accommodations, using the test delivery system, and general testing rules.

The 2017–18 CAAs for ELA and mathematics are a two-stage multistage test (MST). Refer to [Chapter 4: Test Assembly](#) for the details of the MST design. [Figure 5.1](#) presents the components of CAA test administration.

Given that the CAAs are administered to students who have the most significant cognitive disabilities, every individual student is assigned with a test examiner for a one-to-one test administration. Refer to [Chapter 4: Test Assembly](#) for the details in the MST design.

[Figure 5.1](#) displays how the CAA items are routed, with details on Stage 1, Stage 2, and the Survey of Student Characteristics. Stage 1 is the Student Response Check (SRC), which determines which tier the student falls in for Stage 2 (Tier 1, Tier 2, or Tier 3). The [**End Test**] button will be available on question 1 or question 4 should the student not pass the student response check. Some students will stop testing after Stage 1 based on their performance in Stage 1.

In Stage 2, the student is routed to either the 15 easy items in Tier 1, 15 moderate items in Tier 2, or 15 hard items in Tier 3.

The Survey of Student Characteristics is the last step, which includes questions to be completed by the test examiner. If the student does not pass the SRC, the test examiner can use the [**End Test**] button to end the test and the student stops testing in Stage 1.

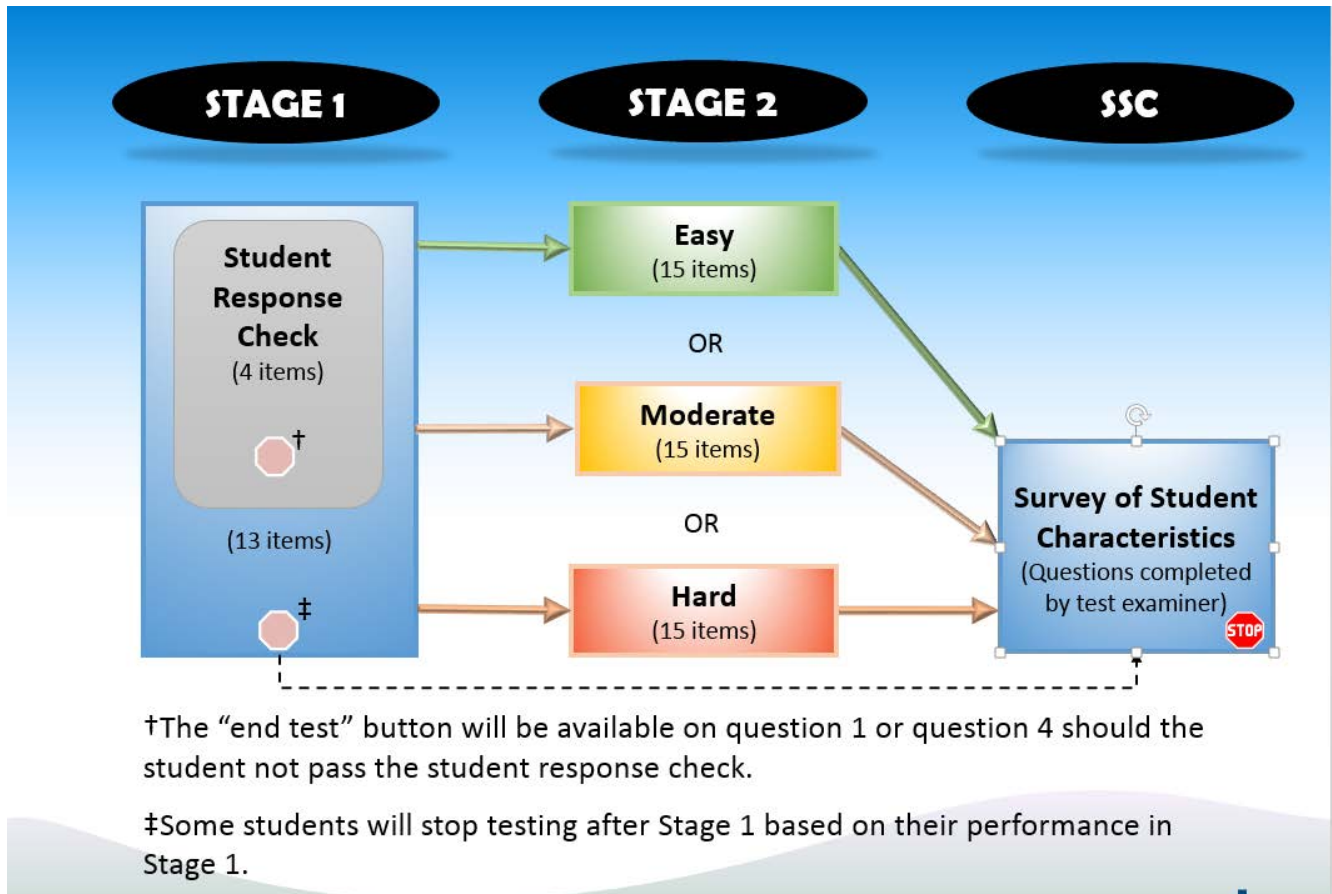


Figure 5.1 Test Components and Administration Process

5.1.1. Administration of the Student Response Check (SRC)

Test examiners respond to the SRC during the first stage of test administration for both the ELA and mathematics assessments to ensure that these CAAs are accessible and students are able to take the test. The SRC is comprised of four questions. The instructions that are provided in the *CAA Directions for Administration* include information on specific behaviors that a test examiner should observe. There are three possible outcomes from administering the first test item.

1. The student demonstrates an observable, consistent response, even though the answer to the item may be incorrect.
2. The student demonstrates an observable, but inconsistent, response.
3. The student does not demonstrate any observable responses.

If the SRC outcome is **1**, the test examiner administers the entire assessment (including the remaining items in Stage 1A and all items in stages 1B and 2).

If the outcome is **2**, the test examiner finishes the next three items and, if a consistent and observable response is elicited through the next three items, the entire assessment is administered.

If the outcome is **3**, the test examiner is instructed not to administer the assessment and ends the test. If, during testing, the student ceases to provide any observable response, the test examiner is instructed to end the test.

5.1.2. Administration of the CAAs for ELA and Mathematics

If the decision is made to continue with the test administration as a result of the SRC, students are given the following opportunities for continuing to the end of the full test or exiting early at the end of Stage 1 as shown in [Figure 5.1](#).

- After completion of the first 10 operational items (Stage 1), the test delivery system (TDS) compares the student's performance against the routing thresholds as shown in [Table 4.C.1](#) (ELA) or [Table 4.C.2](#) (mathematics) and determines whether to direct the student to Stage 2 or end testing and route directly to the Survey of Student Characteristics (SSC).
- After the completion of the full Stage 1, if a minimum score threshold is met to continue with testing, the TDS routes the student to one of the three modules of Stage 2, as shown in [Figure 5.1](#).

5.1.3. Administration of the Survey of Student Characteristics (SSC)

For the final three questions for both the ELA and mathematics assessments, the test examiner is asked to respond to SSC about the student who just tested. These questions are intended to elicit information about a student's characteristics and to explore whether the test examiners' knowledge of students can be used to improve and develop the CAAs for future years. The test examiner completes the SSC on the student's testing device through the CAASPP secure browser. The SSC was not presented for students whose tests were ended early as a result of the Student Response Check.

5.2. Test Security and Confidentiality

For the CAA test administration, every person who works with the assessments, communicates test results, or receives testing information is responsible for maintaining the security and confidentiality of the tests, including California Department of Education (CDE) staff, ETS staff, ETS subcontractors, LEA assessment coordinators, school assessment coordinators, students, parents/guardians, teachers, and cooperative educational service agency staff. ETS' Code of Ethics requires that all test information, including tangible materials (such as test items), confidential files (such as those containing personally identifiable student information), and processes related to test administration (such as the configurations of secure servers) are kept secure. To ensure security for all the tests that ETS develops or handles, ETS maintains an Office of Testing Integrity (OTI), which is described in the next subsection.

All tests within the CAASPP System, as well as the confidentiality of student information, should be protected to ensure the validity, reliability, and fairness of the results. As stated in Standard 7.9 (AERA, APA, & NCME, 2014), "The documentation should explain the steps necessary to protect test materials and to prevent inappropriate exchange of information during the test administration session" (p. 128).

This section of the *CAA for ELA and Mathematics Technical Report* describes the measures intended to prevent potential test security incidents prior to testing and the actions that were taken to handle security incidents occurring during or after the testing window using the Security and Test Administration Incident Reporting System (STAIRS) process.

5.2.1. ETS' Office of Testing Integrity (OTI)

The OTI is a division of ETS that provides quality assurance services for all testing programs managed by ETS. This division resides in the ETS legal department. The Office of Professional Standards Compliance at ETS publishes and maintains the *ETS Standards for Quality and Fairness* (2014), which supports the OTI's goals and activities. The *ETS Standards for Quality and Fairness* provides guidelines to help ETS staff design, develop, and deliver technically sound, fair, and beneficial products and services and help the public and auditors evaluate those products and services.

The OTI's mission is to

- minimize any testing security violations that can impact the fairness of testing;
- minimize and investigate any security breach that threatens the validity of the interpretation of test scores; and
- report on security activities.

The OTI helps prevent misconduct on the part of students and administrators, detects potential misconduct through empirically established indicators, and resolves situations involving misconduct in a fair and balanced way that reflects the laws and professional standards governing the integrity of testing. In its pursuit of enforcing secure testing practices, the OTI strives to safeguard the various processes involved in a test development and administration cycle.

5.2.2. Procedures to Maintain Standardization of Test Security

Test security requires the accounting of all secure materials—including online summative test items, and student data—before, during, and after each test administration. The LEA CAASPP coordinator is responsible for keeping all electronic test materials secure, keeping student information confidential, and making sure the CAASPP test site coordinators and test examiners are properly trained regarding security policies and procedures.

The CAASPP test site coordinator is responsible for mitigating test security incidents at the test site and for reporting incidents to the LEA CAASPP coordinator.

The test examiner is responsible for reporting testing incidents to the CAASPP test site coordinator and securely destroying printed and digital media for items and passages generated by the print-on-demand feature of the TDS (CDE, 2018a).

The following measures ensured the security of CAASPP System assessments administered in 2017–18:

- LEA CAASPP coordinators and test site coordinators must have signed and submitted a “CAASPP Test Security Agreement for LEA CAASPP coordinators and CAASPP test site coordinators” form to the California Technical Assistance Center before ETS granted the coordinators access to TOMS. (*California Code of Regulations*, Title 5 [5 CCR], Education, Division 1, Chapter 2, Subchapter 3.75, Article 1, Section 859[a])
- Anyone having access to the testing materials must have signed and submitted a “Test Security Affidavit for Test Examiners, Test Administrators, Proctors, Translators, Scribes, and Any Other Person Having Access to CAASPP Tests” form to the CAASPP test site coordinator before receiving access to any testing materials. (5 CCR, Section 859[c])

In addition, it was the responsibility of every participant in the CAASPP System to report immediately any violation or suspected violation of test security or confidentiality. The CAASPP test site coordinator reported to the LEA CAASPP coordinator. The LEA CAASPP coordinator reported to the CDE within 24 hours of the incident. (5 CCR, Section 859[e])

5.2.3. Security of Electronic Files Using a Firewall

A firewall software is currently used to prevent unauthorized entry to files, email, and other organization-specific information. All ETS data exchanges and internal email remain within the ETS firewall at all ETS locations, ranging from Princeton, New Jersey, to San Antonio, Texas, to Concord and Sacramento, California.

All electronic applications that are included in TOMS remain protected by the ETS firewall software at all times. Due to the sensitive nature of the student information processed by TOMS, the firewall plays a significant role in maintaining assurance of confidentiality among the users of this information.

Refer to subsection [1.9 Systems Overview and Functionality](#) in [Chapter 1: Introduction](#) for more information on TOMS.

5.2.4. Transfer of Scores via Secure Data Exchange

Due to the confidential nature of test results, ETS currently uses secure file transfer protocol (SFTP) and encryption for all data file transfers; test data is never sent via email. SFTP is a method for reliable and exclusive routing of files. Files reside on a password-protected server that only authorized users can access. ETS shares an SFTP server with the CDE. On that site, ETS posts Microsoft Word and Excel files, Adobe Acrobat PDFs, or other document files for the CDE to review; the CDE returns reviewed materials in the same manner. Files are deleted upon retrieval.

The SFTP server is used as a conduit for the transfer of files; secure test data is only temporarily stored on the shared SFTP server. Industry-standard secure protocols are used to transfer test content and student data from the ETS internal data center to any external systems.

ETS enters information about the files posted to the SFTP server in a web form on a SharePoint website. A CDE staff member checks this log throughout the day to check the status of deliverables and downloads and deletes the file from the SFTP server when its status shows it has been posted.

5.2.5. Data Management in the Secure Database

ETS currently maintains a secure database to house all student demographic data and assessment results. Information associated with each student has a database relationship to the LEA, school, and grade codes, as data is collected during operational testing. Only individuals with the appropriate credentials can access the data. ETS builds all interfaces with the most stringent security considerations, including interfaces with data encryption for databases that store test items and student data. ETS applies best and up-to-date security practices, including system-to-system authentication and authorization, in all solution designs.

All stored test content and student data is encrypted. ETS complies with the Family Educational Rights and Privacy Act (20 *United States Code [USC]* § 1232g; 34 *Code of Federal Regulations* Part 99) and the Children’s Online Privacy Protection Act (15 USC §§ 6501-6506, P.L. No. 105–277, 112 Stat. 2681–1728).

In TOMS, staff at LEAs and test sites have different levels of access appropriate to the role assigned to them.

5.2.6. Statistical Analysis on Secure Servers

During CAASPP testing, the information technology staff at ETS retrieves data files from the American Institutes for Research and loads them into a database. The ETS Data Quality Services staff extracts the data from the database and performs quality control procedures (e.g., the values of all variables are as expected) before passing files to the ETS statistical analysis group. The statistical analysis staff store the files on secure servers. All staff members involved with the data adhere to the ETS Code of Ethics and the ETS Information Protection Policies to prevent any unauthorized access to data.

5.2.7. Student Confidentiality

To meet requirements of the Every Student Succeeds Act as well as state requirements, LEAs must collect demographic data about students' ethnicity, disabilities, parent/guardian education, and so forth during the school year. ETS takes every precaution to prevent any of this information from becoming public or being used for anything other than for testing and score-reporting purposes. These procedures are applied to all documents in which student demographic data appears, such as technical reports.

5.2.8. Student Test Results

5.2.8.1. Types of Results

The following deliverables are produced for reporting of the CAAs:

- Individual Student Score Reports (printed and electronic)
- Internet reports aggregated by content area and state, county, LEA, or test site

5.2.8.2. Security of Results Files

ETS takes measures to protect files and reports that show students' scores and achievement levels. ETS is committed to safeguarding all secure information in its possession from unauthorized access, disclosure, modification, or destruction. ETS has strict information security policies in place to protect the confidentiality of both student and client data. ETS staff access to production databases is limited to personnel with a business need to access the data. User IDs for production systems must be person-specific or for systems use only.

ETS has implemented network controls for routers, gateways, switches, firewalls, network tier management, and network connectivity. Routers, gateways, and switches represent points of access between networks. However, these do not contain mass storage or represent points of vulnerability, particularly for unauthorized access or denial of service.

ETS has many facilities, policies, and procedures to protect computer files. Software and procedures such as firewalls, intrusion detection, and virus control are in place to provide for physical security, data security, and disaster recovery. ETS is certified in the BS 25999-2 standard for business continuity and conducts disaster recovery exercises annually. ETS routinely backs up all data to either disks through deduplication or to tapes, all of which are stored off site.

Access to the ETS Computer Processing Center is controlled by employee and visitor identification badges. The Center is secured by doors that only can be unlocked by the badges of personnel who have functional responsibilities within its secure perimeter. Authorized personnel accompany visitors to the ETS Computer Processing Center at all

times. Extensive smoke detection and alarm systems, as well as a preaction fire-control system, are installed in the Center.

5.2.8.3. Security of Individual Results

ETS protects individual students' results on both electronic files and paper reports during the following events:

- Scoring
- Transfer of scores by means of secure data exchange
- Reporting
- Posting of aggregate data
- Storage

In addition to protecting the confidentiality of testing materials, ETS' Code of Ethics further prohibits ETS employees from financial misuse, conflicts of interest, and unauthorized appropriation of ETS property and resources. Specific rules are also given to ETS employees and their immediate families who may take a test developed by ETS (e.g., a CAA). The ETS OTI verifies that these standards are followed throughout ETS. This verification is conducted, in part, by periodic on-site security audits of departments, with follow-up reports containing recommendations for improvement.

5.2.9. Security and Test Administration Incident Reporting System (STAIRS) Process

Test security incidents, such as improprieties, irregularities, and breaches, are prohibited behaviors that give a student an unfair advantage or compromise the secure administration of the tests, which, in turn, compromises the reliability and validity of test results (CDE, 2018b). Whether intentional or unintentional, failure by staff or students to comply with security rules constitutes a test security incident. Test security incidents have impacts on scoring and affect students' performance on the test.

LEA CAASPP coordinators and CAASPP test site coordinators must ensure that all test security and summative administration incidents are documented by filling out the secure STAIRS form for reporting, which contains selectable options to guide coordinators in their submittal. After the form is submitted, an email containing a case number and next steps will be sent to the submitter (and to the LEA CAASPP coordinator, if the form is submitted by the CAASPP test site coordinator). Coordinators cannot file an appeal without the case number that is created by submitting the *CAASPP STAIRS* form. The *CAASPP STAIRS* form provides the LEA CAASPP coordinator, the CDE, and the California Technical Assistance Center (CalTAC) with the opportunity to interact and communicate regarding the STAIRS process. (CDE, 2018b)

Incidents are then resolved when the LEA CAASPP coordinator or CAASPP test site coordinator either files an appeal to reset, re-open, invalidate, restore, or grant a grace period extension to a student's test, or by following other instructions in a system-generated email in response to the *STAIRS* form submittal.

The following types of STAIRS reports, as applicable to the CAA, are also forwarded to the CDE:

- Security breach (where secure materials are exposed)
- Accidental access to a summative assessment

- Incorrect Statewide Student Identifier used (intentionally switched)
- Restoring a test that had been reset

Appeals requests are reviewed by the CDE. When a request to submit an appeal has been approved, the coordinator receives a system-generated email with the appeal type that has been approved. The coordinator then returns to TOMS to access the Appeal System, where the appeal is filed (CDE, 2018b).

5.2.9.1. Impropriety

A testing impropriety is an unusual circumstance that has a low impact on the individual or group of students who are testing, and has a low risk of potentially affecting student performance on the test, test security, or test validity. An impropriety can be corrected and contained at a local level. An impropriety should be reported to the LEA CAASPP coordinator and CAASPP test site coordinator immediately. The coordinator reported the incident within 24 hours, using the online *CAASPP STAIRS* form.

5.2.9.2. Irregularity

A testing irregularity is an unusual circumstance that impacts an individual or a group of students who are testing and may potentially affect student performance on the test, or impact test security or test validity. These circumstances can be corrected and contained at the local level and submitted in the online Appeals System for resolution. An irregularity must be reported to the LEA CAASPP coordinator and CAASPP test site coordinator immediately. The coordinator reported the irregularity within 24 hours, using the online *CAASPP STAIRS* form.

5.2.9.3. Breach

A testing breach is an event that poses a threat to the validity of the test. Breaches require immediate attention and escalation to CalTAC (for social media breaches) or the CDE (for all other breaches) via telephone. Following the call, the CAASPP test site coordinator or LEA CAASPP coordinator must complete the online *CAASPP STAIRS* form within 24 hours. Examples may include such situations as a release of secure materials or a security or system risk. These circumstances have external implications for the CDE and may result in a decision to remove the test item(s) from the available secure item bank. A breach incident was reported to the LEA CAASPP coordinator immediately.

5.2.10. Appeals

For test security incidents reported in STAIRS that result in a need to reset, reopen, invalidate, or restore individual online student assessments, the CDE must approve the request. In most instances, an appeal will be submitted to address a test security breach or irregularity. The LEA CAASPP coordinator or CAASPP test site coordinator may submit appeals in TOMS. All submitted appeals are available for retrieval and review by the appropriate credentialed users within a given organization. However, the view of appeals is restricted according to the user role as established in TOMS (CDE, 2018c).

Types of appeals available during the 2017–18 CAASPP administration are described in [Table 5.1](#).

Table 5.1 Types of Appeals in CAASPP Testing

Type of Appeal	Description
Reset	Resetting a student’s summative assessment removes that assessment from the system and enables the student to start a new assessment from the beginning.
Invalidation	Invalidated summative assessments will be scored, and scores will be provided on the Student Score Report with a note that an irregularity occurred. The student(s) will be counted as participating in the calculation of the school’s participation rate for accountability purposes.
Re-open	Reopening a summative assessment allows a student to access an assessment that has already been submitted.
Restore	Restoring a summative assessment returns an assessment from the Reset status to its prior status. This action can only be performed on assessments that have been previously reset.

5.3. Processing and Scoring

The CAAs for ELA and mathematics are administered online only and require two internet-connected devices: a student testing device and a separate device the test examiner uses to start a test session through the Test Administrator Interface. Test examiners also used their device to open a *Directions for Administration (DFA)* document, which is used to guide the student through the test. The CAAs for ELA and mathematics require the installation of CAASPP secure browsers on student testing devices. These are the same secure browsers that are used for the other online CAASPP assessments.

All item types are designed to be machine-scorable with the exception of a small subset of constructed response (CR) items. For CR items, item-specific rubrics are included in the *DFAs* to be used by the test examiner for rating a student’s response. All rubric-based scoring is conducted and entered into the TDS by the test examiner during test administration. Scoring rubrics are included in the *DFAs*.

5.4. Procedures to Maintain Standardization

The test administration and scoring procedures are designed so that the tests are administered and scored in a standardized manner. ETS takes all necessary measures to ensure the standardization of test administration, as described in this subsection of the technical report.

5.4.1. LEA CAASPP Coordinator

An LEA CAASPP coordinator was designated by the district superintendent at the beginning of the 2017–18 school year. LEAs include public school districts, statewide benefit charter schools, State Board of Education–authorized charter schools, county office of education programs, and direct funded charter schools.

LEA CAASPP coordinators are responsible for ensuring the proper and consistent administration of the assessments that are part of the CAASPP System, including the CAAs. In addition to the responsibilities set forth in 5 CCR Section 857, their responsibilities include

- adding CAASPP test site coordinators and test examiners into TOMS;
- training CAASPP test site coordinators and test examiners regarding state requirements and CAA administration as well as security policies and procedures;
- reporting test security incidents (including testing irregularities) to the CDE;
- overseeing test administration activities;
- filing a report of a testing incident in STAIRS; and
- requesting an appeal (if the STAIRS response email indicates that an appeal is warranted).

5.4.2. CAASPP Test Site Coordinator

A CAASPP test site coordinator is trained by the LEA CAASPP coordinator for each test site (5 CCR Section 857[f]). A test site coordinator must be an employee of the LEA and must sign a security agreement (5 CCR Section 859[a]).

A test site coordinator is responsible for identifying test examiners and ensuring that they have signed CAASPP Test Security Affidavits. CAASPP test site coordinators' duties may include

- adding test examiners into TOMS;
- entering test settings for students;
- creating testing schedules and procedures for a school consistent with state and LEA policies;
- working with technology staff to ensure secure browsers are installed and any technical issues are resolved;
- monitoring testing progress during the testing window and ensuring all students participate, as appropriate;
- coordinating and verifying the correction of student data errors in the California Longitudinal Pupil Achievement Data System;
- ensuring a student's test session is rescheduled, if necessary;
- addressing testing problems;
- reporting security incidents;
- overseeing administration activities at a school site;
- filing a report of a testing incident in STAIRS; and
- requesting an appeal (if the STAIRS response email indicates that an appeal is warranted).

5.4.3. Test Examiners

Test examiners are identified by CAASPP test site coordinators as individuals who will administer the CAASPP assessments. A test examiner must be a certificated or licensed school staff member (5 CCR Section 850[ag]).

A test examiner must sign a security affidavit (5 CCR Section 859[d]). A test examiner's duties may include

- participating in training by either viewing the online test administration tutorial or attending any locally provided training;
- ensuring the physical conditions of the testing room meet the criteria for a secure test environment;
- administering the CAAs;
- reporting all test security incidents to the test site coordinator and LEA CAASPP coordinator in a manner consistent with state and LEA policies;
- viewing student information prior to testing to ensure that the correct student receives the proper test with appropriate resources and reporting potential data errors to test site coordinators and LEA CAASPP coordinators;
- monitoring student progress throughout the test session using the Test Administrator Interface; and
- complying fully with all directions provided in the Directions for Administration for the California Alternate Assessments.

5.4.4. Instructions for Test Examiners and Staff Involved in CAA Administration

5.4.4.1. Directions for Administration

Test examiners use a grade-level edition of the *Directions for Administration for the California Alternate Assessments* to administer the CAAs for ELA and mathematics to students. Test examiners must follow all directions and guidelines and read, word-for-word, the instructions to students in the administration script to ensure standardization of test administration. *DFAs* also include scoring rubrics where warranted.

Sample *Directions for Administration for the California Alternate Assessments* to be used in conjunction with the CAA practice and training tests are provided to LEAs as well (CDE, 2017a, 2018d).

5.4.4.2. CAASPP Online Test Administration Manual

The *CAASPP Online Test Administration Manual* (CDE, 2018a) contains information and instructions on overall procedures and guidelines for all LEA and test site staff involved in the administration of online assessments. Sections include the following topics:

- Roles and responsibilities of those involved with CAASPP testing
- Test administration resources
- Test security
- Administration preparation and planning
- General test administration
- Instructions for steps to take before, during, and after testing
- Overview of the student testing interface

Appendices include definitions of common terms, item types, descriptions of different aspects of the test and systems associated with the test, and checklists of activities for LEA CAASPP coordinators, CAASPP test site coordinators, and test examiners.

5.4.4.3. TOMS Pre-Administration Guide for CAASPP Testing

TOMS is a web-based application that allows LEA CAASPP coordinators to set up test administrations, add and manage users, and submit online student test settings. Test examiners access TOMS to retrieve *CAA DFAs*.

TOMS modules include the following (CDE, 2018c):

- **Test Administration Setup**—This module allows LEAs to determine and calculate dates for the LEA’s 2017–18 administration of the CAA assessments.
- **Adding and Managing Users**—This module allows LEA CAASPP coordinators to add CAASPP test site coordinators and test examiners to TOMS so that the designated user can administer, monitor, and manage the online alternate assessments.
- **Student Test Assignment**—This module allows LEA CAASPP coordinators to designate students to take the alternate assessments.
- **Online Student Test Settings**—This module allows LEA CAASPP coordinators and CAASPP test site coordinators to configure online test settings so students receive the assigned accessibility resources and accommodations for the online alternate assessments.

5.4.4.4. Other System Manuals

Other manuals were created to assist LEA CAASPP coordinators and others with the technological components of the CAASPP System and are listed next.

- **Technical Specifications and Configuration Guide for CAASPP Online Testing**—This manual provides information, tools, and recommended configuration details to help technology staff prepare computers and install the secure browser to be used for the online CAASPP assessments (CDE, 2018e).
- **Security Incidents and Appeals Procedure Guide**—This manual provides information on how to report and submit an appeal to the CDE to reset, reopen, invalidate, or restore individual online student assessments (CDE, 2018b).
- **Accessibility Guide for CAASPP Online Testing**—This manual provides descriptions of the accessibility features for online tests as well as information about supported hardware and software requirements for administering tests to students using accessibility resources, including those with a braille accommodation using the software Job Access With Speech (JAWS®) tool or a braille embosser (hardware). Students with a braille accommodation are able to take advantage of the adaptive algorithm using the TDS’s Enhanced Accessibility Mode and JAWS (CDE, 2018f).

5.5. LEA Training

ETS established and implemented a training plan for LEA assessment staff on all aspects of the assessment program. The CDE and ETS, in collaboration with the CDE Senior Assessment Fellows and other stakeholders as needed, determined the audience, topics, frequency, and mode (in-person, webcast, videos, modules, etc.) of the training, including such elements as format, participants, and logistics.

ETS conducted 16 in-person pretest workshops and presented four webcasts for the 2017–18 administration. Additionally, ETS produced a tutorial for CAA administration.

Following approval by the CDE, the ancillary materials were posted for each webcast on the CAASPP website at <http://www.caaspp.org/training/caaspp/> so the LEAs could download the training materials.

5.5.1. In-person Training

ETS provided a series of in-person trainings. Beginning in January 2018, the first in-person trainings provided were the pretest workshops, which focused on training LEA CAASPP coordinators on how to prepare for administering the CAASPP. Additionally, a two-session Post-Test Workshop was offered in May and June 2018 with the sessions “Principles of Scoring and Reporting” and “The Results Are In—Now What?”

5.5.2. Webcasts

ETS provided a series of live webcasts throughout the school year that were archived and made available for training LEA and test site staff as well as test examiners. Webcast viewers were provided with a method of electronically submitting questions to the presenters during the webcast. The webcasts were recorded and archived for on-demand viewing on the CAASPP Summative Assessment Videos and Archived Webcasts web page at <http://www.caaspp.org/training/caaspp/>. CAASPP webcasts are available to everyone and require neither preregistration nor a logon account.

5.5.3. Videos and Narrated PowerPoint Presentations

To supplement the in-person workshops and the live webcast, ETS also produced short “how-to” videos and narrated PowerPoint presentations that were available on the CAASPP Summative Assessment Videos and Archived Webcasts web page at <http://www.caaspp.org/training/caaspp/>.

Finally, ETS produces an online module, the CAA Test Examiner Tutorial, designed to teach test examiners how to administer the CAAs for ELA and mathematics. Test examiners are required to complete a training session before administering the CAAs by either completing a local training or completing this stand-alone online training module (CDE, 2017b).

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Chapter 6: Standard Setting

This chapter summarizes the standard-setting process through which California Alternate Assessment (CAA) for English language arts/literacy (ELA) and mathematics achievement levels were established. Included are an overview of the standard-setting methodology, a summary of the standard-setting procedure, the description of the performance level descriptors, and the results. The detailed standard-setting information for the CAAs for ELA and mathematics is described in the *Standard-Setting Technical Report for the California Alternate Assessments* (ETS, 2016).

6.1. Background

Standard setting refers to a class of methodologies by which one or more performance threshold scores are used to determine achievement levels. The purpose of the standard-setting process for the CAAs was to collect recommendations from California educators for the placement of the CAA threshold scores for review by the California Department of Education (CDE), with final determination by the State Board of Education (SBE). The content of the CAAs for ELA and mathematics is aligned to the Core Content Connectors (Connectors) that are derived from the Common Core State Standards (CCSS).

Educational Testing Service (ETS) conducted standard-setting workshops in 2016, following the first operational administration of the ELA and mathematics assessments. The Bookmark standard-setting method was applied to all items on each test, by grade. Refer to subsection [6.3 Standard-Setting Methodology](#) for more information about the Bookmark method.

Through the standard-setting process, input and recommendations on performance standards are solicited from California educators and local educational agencies (LEAs). The CDE reviews the input and recommendations, and the SBE establishes the standards based on these recommendations. There are three achievement levels for each test per grade and content area. In order from low to high performance, these are: Level 1—Alternate, Level 2—Alternate, and Level 3—Alternate. Two achievement threshold scores are needed to define the three achievement levels. Students with scale scores lower than the threshold score for the Level 2—Alternate achievement level are assigned to the lowest achievement level, Level 1—Alternate. Students with scale scores that are equal to or greater than the threshold score for the Level 3—Alternate achievement level are assigned to the highest achievement level, Level 3—Alternate. The rest of the students with valid scores are assigned to Level 2—Alternate.

6.2. Performance Level Descriptors (PLDs)

The CAAs for ELA and mathematics general (policy) performance level descriptors (PLDs), which were derived from the documents of the National Center and State Collaborative, describe what students at each performance level know and are able to do. General PLDs are short policy descriptors that convey the expectation at a given achievement level.

A team of LEA educators who are familiar with the Connectors and the target student population reviewed the general PLDs for California's target student population. They developed more specific descriptions for each grade and content area using the CAA blueprints and the Connectors as resources. The grade- and content-specific PLDs, together with threshold scores and the assessment results, are accessible to educators, parents, students, and the public (CDE, 2016a and 2016b).

[Table 6.1](#) provides a description of the three general PLDs, with Level 3 reflecting the highest level of achievement (CDE, 2018).

Table 6.1 Three General PLDs and CAAs for ELA and Mathematics Achievement Levels

Level	General Performance Level Descriptors	CAA Achievement Level
3	Students at this level demonstrate understanding of core subject matter in the content area. They are actively working with adapted grade-level content that focuses on the essential knowledge and skills and may need occasional prompts and assistance to complete tasks and activities.	Level 3—Alternate
2	Students at this level demonstrate foundational understanding of core subject matter in the content area when provided with frequent prompts and supports. They are actively working with adapted grade-level content that focuses on the essential knowledge and skills and may frequently need supports to complete tasks and activities.	Level 2—Alternate
1	Students at this level demonstrate limited understanding of adapted grade-level content that focuses on much of the basic knowledge and skills, even with extensive supports.	Level 1—Alternate

6.3. Standard-Setting Methodology

For the CAAs for ELA and mathematics, the Bookmark method was used for standard setting. The Bookmark method is an item-mapping procedure that allows multiple performance threshold scores to be set in an efficient manner. This method represents an appropriate balance between statistical rigor and informed opinion, as explained in the following subsection.

6.3.1. Bookmark Method

The Bookmark method (Lewis, et al., 1998; Mitzel, et al., 2001) is a commonly used item-mapping procedure in which test items are ordered from easiest to most difficult based on actual student performance; the ordered items are presented in a booklet known as an ordered item booklet (OIB). The task of each panelist is to place a “bookmark” in the OIB that differentiates content that a student with just enough content knowledge and skills to be performing at a defined achievement level would likely know from content that he or she would not likely know. A bookmark is placed in the OIB for each item defined at the border of each achievement level. For each CAA, two bookmarks were required to set three achievement levels: Level 1—Alternate, Level 2—Alternate, and Level 3—Alternate.

The Bookmark method has its basis in item response theory (IRT) analysis. IRT is used to estimate item difficulties. These estimates are used to order items from easiest to hardest and to place item difficulty estimates on the score scale. One benefit of this approach is that once panelists make judgments in the OIB, the difficulty values associated with each item have a built-in relationship to scale scores through theta, a fact that allows results to be provided to score users and policy makers on the familiar metric of the scale score.

6.4. Standard-Setting Procedures

This subsection describes what occurred prior to and during the standard-setting workshop.

6.4.1. Panelists

Prior to the standard setting, panelists were recruited from across the state to be representative of the educators of CAA-eligible students; panelists were primarily special education teachers. Special efforts were made to assemble panels that were representative of the geographic and socioeconomic diversity of California in general and the CAA educator population in particular. The educators who participated in the standard setting included representatives from across regions in California (north, south, and central) and across gender, race, and ethnic categories. The final selection of panelists invited to the workshops was made by the CDE. The total number of panelists who participated was 68. Of these, 61 teachers have experience in special education, 43 administered the CAAs, and 7 were general education teachers.

6.4.2. Materials

Panelists were provided with a letter describing the purpose and procedure of the standard-setting workshop along with a preworkshop assignment specific to their panel assignments, instructions, a note-taking form, and the links to the general PLDs and the CAA blueprints. During the workshop, panelists received training materials, a draft list of competencies to develop borderline student definitions, a set of operational materials, and evaluation forms. The set of operational materials included *Directions for Administration (DFA)* for the assessment, the OIB, bookmark recording forms, and an item map. All references such as the CCSS, the Connectors, and the essential understandings were made available for panelists during the workshop. The detailed procedure with regard to securing those materials was described in the *Standard Setting Technical Report for the California Alternate Assessments* (ETS, 2016).

6.4.3. Process

Prior to making judgments in the OIB, panelists reviewed and discussed the test blueprints and the SBE-approved PLDs, including the specific PLDs for each level, and then developed borderline student definitions as a group. Two borderline student definitions were developed, one for Level 2 and one for Level 3. For example, a borderline Level 2 student is a student at the beginning of Level 2; this student definition represents the knowledge and skills of the lowest-performing Level 2 student, and differentiates this student from the knowledge and skills of the highest-performing Level 1 student.

[Figure 6.1](#) shows where borderline students are located. This graph shows six figures representing students in the Level 1—Alternate group, six figures in the Level 2—Alternate Group, and six figures in the Level 3—Alternate Group. The arrow pointing to the leftmost figure in the Level 2 group indicates that this is the borderline Level 2 student. The arrow pointing to the leftmost figure in the Level 3 group indicates that this is the borderline Level 3 student.

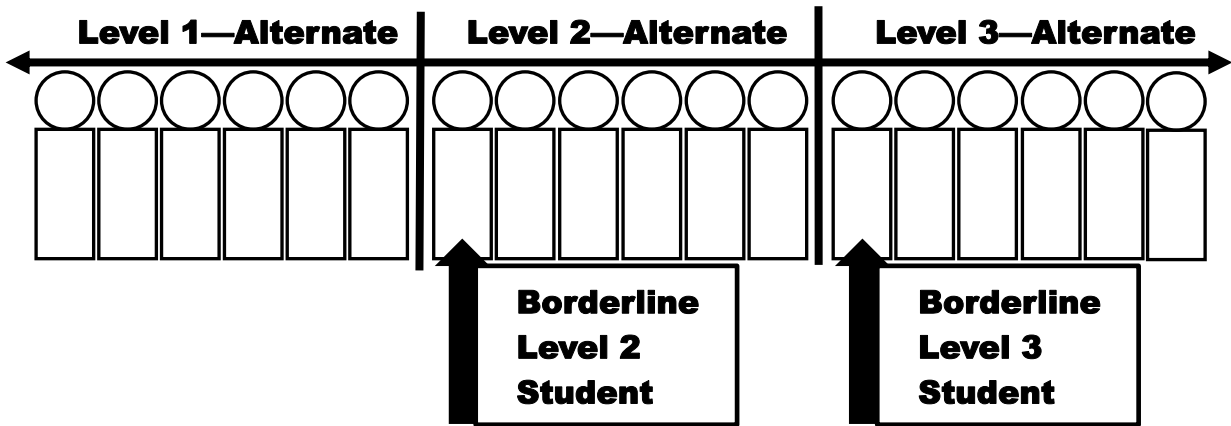


Figure 6.1. Location of Borderline Students

To make judgments and place bookmarks in the OIB, panelists reviewed each item in the OIB in sequence and considered if the student at the beginning of Level 2, known as the borderline Level 2 student, would most likely be able to answer the item correctly. A panelist placed the Level 2 bookmark on the first item encountered in the OIB that he or she believed the borderline Level 2 student would most likely not be able to address because items beyond that point were too difficult for that borderline student. The panelist continued from that point in the OIB and then stopped at the item that the borderline Level 3 student would not likely be able to address (i.e., the item that likely exceeds the ability of the borderline Level 3 student). Note that in the Bookmark method, the definition of “most likely” is related to the IRT model. That is, panelists were instructed to think of “most likely” as having a two-thirds likelihood of answering a multiple-choice item correctly. In ordering the items in the OIB, a response probability of 0.67 is employed in the IRT model; thus, the instructions to the panelists and the analytical model are aligned.⁷

The Bookmark process was implemented in three rounds. Each test-specific panel was split up and seated in small groups at separate tables to facilitate discussion. This table format provided an environment more conducive to panelists’ sharing their opinions and rationales, as some panelists may be less inclined to speak or have less opportunity to be heard in a large group. The table format also increased the independence of the threshold-score recommendations, because each group of experts provided its own recommendations, which were then aggregated across groups.

The final recommended threshold scores were based on the median of panelists’ judgment scores. At the conclusion of the workshop, the results were shared with the panelists and the CDE.

As part of the standard-setting process, the CDE analyzed the standard-setting panel’s judgments and refined the threshold scores for consistency across all the CAAs for ELA and mathematics grade levels tested. The CDE’s recommendations were then presented to the SBE for approval.

⁷ In several applications of the Bookmark method, a target probability of two-thirds is used to define “most likely.” Refer, for example, to Mitzel, et al. (2001).

6.5. Results of the Standard Setting

The SBE approved the recommendation of the final threshold scores for the CAAs. The recommendations are presented in [Table 6.2](#) (ELA) and [Table 6.3](#) (mathematics). The scales in these tables were presented and used in the standard-setting process. They range from 50 to 350 score points and are more user friendly than the theta metric. The theta score was not used because panelists might not be familiar with the concept of theta. As the theta scores range from -6.00 to 6.00 approximately, it was less accessible to panelists as well. As a result, the theta scale was transformed linearly to a score scale unique to each grade.

The tables show the percent of students statewide that would be placed at this alternate achievement standard (level) on the basis of the results of the 2015–16 CAASPP administration. Also shown in both tables is the percentage of students statewide that would be at and above this alternate achievement standard (level) on the basis of the results of the 2015–16 administration. Finally, the standard-setting threshold score is the minimum standard-setting scale score needed to achieve an alternate achievement standard (level) on the 2015–16 administration of tests. Note that threshold scores were generated solely for the standard-setting process; reporting scales were developed to report scores on the Student Score Report and public reporting.

Table 6.2 SSPI’s Recommendations for the Proposed Achievement Standards (Levels) for the CAA for ELA

Grade	% of Students in Level 1	% At or Above Level 1	% of Students in Level 2	Standard-Setting Scale Threshold Score for Level 2	% At or Above in Level 2	% of Students in Level 3	Standard-Setting Scale Threshold Score for Level 3	% At or Above in Level 3
3	54.3	100	24.7	195	45.7	21.0	220	21.0
4	60.6	100	27.8	200	39.4	11.6	225	11.6
5	57.0	100	34.5	200	43.0	8.5	225	8.5
6	57.0	100	36.2	200	43.0	6.8	230	6.8
7	59.4	100	32.2	200	40.6	8.4	225	8.4
8	49.4	100	43.0	195	50.6	7.5	225	7.5
11	46.0	100	46.8	195	54.0	7.1	225	7.1

Table 6.3 SSPI's Recommendations for the Proposed Achievement Standards (Levels) for the CAA for Mathematics

Grade	% of Students in Level 1	% At or Above Level 1	% of Students in Level 2	Standard-Setting Scale Threshold Score for Level 2	% At or Above in Level 2	% of Students in Level 3	Standard-Setting Scale Threshold Score for Level 3	% At or Above in Level 3
3	72.3	100	23.1	205	27.7	4.6	225	4.6
4	70.0	100	25.8	205	30.0	4.3	225	4.3
5	72.8	100	23.0	205	27.2	4.2	225	4.2
6	72.7	100	23.2	205	27.3	4.1	225	4.1
7	70.4	100	24.4	205	29.6	5.2	225	5.2
8	71.1	100	24.5	205	28.9	4.4	225	4.4
11	68.4	100	26.2	205	31.6	5.4	225	5.4

The reporting scale score range for each achievement level at different grades is presented in [Table 7.2](#) on page [94](#). The performance threshold score for each level is the lower bound of each scale score range. The scale score ranges do not change from year to year. Once established, they remain unchanged from administration to administration until such time that new performance standards are adopted. [Table 7.3](#) and [Table 7.4](#) on page [95](#) in [chapter 7](#) present the percentages of students meeting each achievement level in the 2017–18 administration of the CAAs for ELA and mathematics.

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Chapter 7: Scoring and Reporting

Student item responses are scored and analyzed in order to determine individual students' scores for the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics. Based on the analyses of the item responses, individual student scores (i.e., overall scale scores) are calculated and reported. In addition, student test scores are aggregated to produce summary reports for schools and local educational agencies (LEAs). This chapter describes how the various types of student responses are scored for the CAA online assessments, as well as the various types of scores and reports that are generated.

7.1. Student Test Scores

Overall scale scores and achievement levels for the CAAs for ELA and mathematics are reported at the individual student level. In order to obtain these overall scale scores and achievement levels, the ability (theta) scores need to be estimated.

Prior to the test administration, Educational Testing Service (ETS) assessment development staff review each item and determine the keys and scoring rubrics. The keys and rubrics are provided to the American Institutes for Research (AIR) for implementation in the test delivery system (TDS). After AIR finishes machine scoring of item responses, scores and responses are delivered to ETS. ETS' enterprise score key management (eSKM) system collects and calculates individual students' overall scores (e.g., total raw scores).

ETS uses two parallel scoring systems to produce and verify students' scores: the eSKM scoring system, which receives individual students' item scores and item responses from AIR and computes individual student scores for the ETS reporting system; and the score computation by ETS' Psychometric Analysis and Research team, which also computes individual student scores based on the same data files but using SAS, statistical analysis system software. The scores from the two systems are then compared for the purpose of internal quality control. Inconsistency in the total raw scores are discussed and resolved. The parallel scoring process ensures the quality and accuracy of scoring and supports the transfer of scores into the database of the student records scoring system, the Test Operations Management System (TOMS).

7.1.1. Incomplete and Complete Cases

Whether a test should be scored or reported depends on the "complete" status of the test and how much of the test was submitted for scoring. Depending on the nature of the missing data, different actions are taken.

As defined in the CAA scoring and reporting specifications, tests are considered "complete" if students respond to a minimum of four items; "partially complete" if students respond to one to three items; and "non-complete" if students log on but do not respond to any item. ETS, in consultation with the California Department of Education (CDE), implemented several rules to identify an incomplete test; these rules are presented in [Table 7.1](#), which includes the following four specifications:

1. Attemptedness/Participation rules that describe when a test is considered attempted or participated
2. When a test is scored

3. How and when incomplete tests are scored
4. When a score is reported

Table 7.1 Rules for Incomplete Tests

If the student	Classify the student as participating?	Score the student's responses?	Classify the student as attempting the test (test completion status) or is there another status?	Report a score for the student?
Logged on to the test, but answered no items	Yes	Yes, Lowest obtainable scale score (LOSS) for the test	Yes, INC0 (Non-completion)	Yes
Logged on to the test, and answered at least one item but not more than three items	Yes	Yes, Next lowest obtainable scale score for the test (LOSS+1)	Yes, INC1 (Partial completion)	Yes
Logged on to the test and answered at least four items	Yes	Yes	Yes (Completion)	Yes
Did not log on to the test	No	N/A	Not Tested	No
Logged on and answered at least one item with a special condition code (refer to subsection 7.3.2 Special Cases)	No	N/A	Not Tested	No

7.1.2. Theta Scores

The CAAs for ELA and mathematics use a two-stage multistage test (MST) design; refer to subsection [4.2 Test Design](#) in [Chapter 4: Test Assembly](#) for details about MST design. Based on this design, there are multiple pathways (combinations) of Stage 1 and Stage 2 modules; each pathway consisting of a Stage 1 module and a Stage 2 module is illustrated in [Table 4.1](#) on page [52](#). Because the tests are not vertically scaled, each test (by grade and content area) has its own theta scale. After all new items are calibrated and linked onto the reference scale, the raw score can be computed as a sum of dichotomous and polytomous item scores and can be transformed into an ability estimate (theta) by using the IRT inverse test characteristic curve (TCC) method (Stocking, 1996). With this method, the student's estimated ability is the ability value at which the expected raw score is equal to the student's raw score. Refer to subsection [8.3.2 Equating](#) for equating procedures and the IRT inverse TCC method. Note that the estimation of ability is implemented by using the

item parameters that are either in the item bank or from the calibration, and that each pathway has a unique set of item parameters.

When a conversion table from the raw score to theta score is created for each pathway (i.e., each combination of Stage 1 and Stage 2 modules), the theta score of each individual student can be obtained in the conversion table. Refer to [appendix 7.B](#) for the raw-score-to-theta-score conversion tables.

The overall theta score distributions for each grade and content area are presented in [Table 7.A.1](#) and [Table 7.A.2](#) in [appendix 7.A](#). To compare the ability distributions across pathways, the estimated theta score distributions for each grade, content area, and test pathway are presented in [Table 7.A.3](#) through [Table 7.A.16](#). The theta distributions show the ability differences between students taking different pathways

7.1.3. Scale Scores for the Total Assessment

The following requirements were used to develop and define the CAAs for ELA and mathematics reporting scale ranges:

1. Each scale score has three digits (e.g., 320, 551, or 780) where the first digit is indicative of the grade being reported. The leading digit is defined by the grade for elementary and middle school, while the high school leading digit is set to “9.” The latter two digits represent the scale score as derived from the transformation from the raw scores to the scale scores as described in the previous paragraph.
2. Score ranges are grade-specific. For example, the possible scale scores would be 300 to 399 for grade three with the lowest obtainable scale score (LOSS) at 300 and the highest obtainable scale score (HOSS) at 399. For grade four, this range is 400 to 499 with a LOSS of 400 and a HOSS of 499, and so on for the other grades. For grade eleven, the scale ranges from 900 to 999 with a LOSS of 900 and a HOSS of 999.
3. Each threshold score on the scale is the same from year to year. Also, across the grade levels, the last two digits corresponding to the Level 2—Alternate and Level 3—Alternate threshold scores are the same (refer to subsection [7.1.4 Achievement Levels](#) for a brief description of alternate achievement levels).
4. Students with incomplete tests, as shown in [Table 7.1](#), have two possible scale scores. If a student logged on to the test system but did not answer any items (INC0), this student would be assigned a scale score of LOSS (e.g., 300 for a third-grade student and 400 for a fourth-grade student). If a student logged on to the TDS and answered one but fewer than four items (INC1), he or she would be assigned a scale score of LOSS+1 (i.e., 301 for a third-grade student and 401 for a fourth-grade student).

For students who complete a CAA, their scale scores cannot be lower than LOSS+3 or higher than the HOSS as a result of truncation in the scale score transformation listed in [Table 8.6](#). For example, the scale scores for grade three are truncated at a minimum of 303 and a maximum of 399. As a result, the range of student ability estimates [-6, +6] are transformed to the scale score range [303, 399] for grade three and [403, 499] for grade four. The scale score ranges for other grades follow the same pattern.

In addition to the special requirements of the CAA reporting scale, an equating procedure is implemented to place scores on the basis of different forms or administrations on the reference scales to make scores comparable.

First, to express the students' ability estimates on the scale score metric of CAA tests, the inverse TCC procedure is used to convert each possible raw score to an ability estimate (theta score). Refer to subsection [8.3.2.3.1 Inverse Test Characteristic Curve \(TCC\) Procedure](#) for details of this procedure.

Second, theta scores are transformed linearly to the appropriate CAA for ELA and mathematics scale scores. Refer to subsection [8.3.2.3.2 Transformation from Theta Scores to Scale Scores](#) for details of the transformation. The slopes and intercepts for such linear transformations are presented in [Table 8.6](#). Once the theta scores are transformed, the theta-to-scale score relationship can be mapped to the raw scores.

Finally, the raw-to-scale score conversion tables are established. The complete raw-to-scale score conversion tables for each CAA pathway are presented in [Table 7.B.1](#) through [Table 7.B.14](#) in [appendix 7.B](#). The raw scores, theta scores, transformed scale scores, and the number and percentage of students at each raw score are listed in those tables. Refer to [Table 4.A.1](#) through [Table 4.A.14](#) in [Appendix 4.B: Statistical Specification for 2017–18 Test Development](#) for pathways of each test.

7.1.4. Achievement Levels

CAA reporting scales classify each student's performance into one of the three achievement levels,⁸ with Level 1—Alternate indicating the lowest level of performance and Level 3—Alternate indicating the highest level of performance. The range of possible scale scores is divided into three achievement levels. Student test results are reported in the following overall achievement levels:

Level 1—Alternate: Student demonstrates a limited understanding of core concepts in ELA and mathematics.

Level 2—Alternate: Student demonstrates a foundational understanding of core concepts in ELA and mathematics.

Level 3—Alternate: Student demonstrates an understanding of core concepts in ELA and mathematics.

The scale score ranges defining the various achievement levels and grades are presented in [Table 7.2](#).

Table 7.2 CAAs for ELA and Mathematics Reporting Scale Score Ranges for Each Achievement Level and Grade

Grade	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate
3	300–344	345–359	360–399
4	400–444	445–459	460–499
5	500–544	545–559	560–599
6	600–644	645–659	660–699
7	700–744	745–759	760–799
8	800–844	845–859	860–899
11	900–944	945–959	960–999

⁸ Detailed information regarding the determination of the achievement levels can be found in the *CAA Standard Setting Technical Report* (ETS, 2016).

7.2. Overview of Score Aggregation Procedures

To provide meaningful results to the stakeholders, test scores for a given grade and content area are aggregated at the school, LEA or direct funded charter school, county, and state levels. The aggregated scores are generated for the selected groups of interest (gender, ethnicity, primary disability, etc.) and for the total population. This subsection contains a description of the types of aggregation that are performed on the CAA for ELA and mathematics summary test scores.

7.2.1. Individual Student Score Distributions and Summary Statistics

Summary statistics that describe student performance on each test are presented in [Table 7.3](#). Included in the table are the number of students taking each test and the means and standard deviations of student scores expressed in terms of both scale scores and theta scores.

Table 7.3 Mean and Standard Deviation of Scale and Theta Scores

Content Area and Grade	Number of Students Tested	Scale Score Mean	Scale Score SD	Theta Score* Mean	Theta Score* SD
ELA 3	5,102	340	25	-1.04	2.56
ELA 4	5,324	438	23	-0.91	2.42
ELA 5	5,330	539	23	-0.88	2.43
ELA 6	5,386	639	20	-0.81	2.26
ELA 7	5,383	738	23	-0.92	2.41
ELA 8	5,238	840	21	-0.92	2.33
ELA 11	4,457	943	22	-0.66	2.37
Mathematics 3	5,101	335	21	-1.06	2.44
Mathematics 4	5,309	434	21	-1.05	2.33
Mathematics 5	5,319	535	21	-1.01	2.38
Mathematics 6	5,366	635	20	-1.02	2.38
Mathematics 7	5,375	735	20	-0.89	2.24
Mathematics 8	5,229	834	20	-1.01	2.35
Mathematics 11	4,437	935	21	-0.84	2.20

* The incomplete cases are not included in the analysis. The number of students who did not complete a test or who did not answer any items is shown in [Table 7.A.1](#) and [Table 7.A.2](#) in [appendix 7.A](#).

The number and percentage of students at each achievement level for each test is presented in [Table 7.4](#).

Table 7.4 Numbers and Percentages of Students in Achievement Levels

Content Area and Grade	Level 1 N	Level 1 %	Level 2 N	Level 2 %	Level 3 N	Level 3 %
ELA 3	2,593	51	1,419	28	1,090	21
ELA 4	2,929	55	1,419	27	976	18
ELA 5	2,735	51	1,607	30	988	19
ELA 6	2,922	54	1,870	35	594	11
ELA 7	2,973	55	1,445	27	965	18
ELA 8	2,527	48	2,038	39	673	13
ELA 11	1,954	44	1,556	35	947	21
Mathematics 3	3,179	62	1,515	30	407	8
Mathematics 4	3,470	65	1,400	26	439	8
Mathematics 5	3,348	63	1,518	29	453	9
Mathematics 6	3,586	67	1,392	26	388	7
Mathematics 7	3,516	65	1,472	27	387	7
Mathematics 8	3,350	64	1,529	29	350	7
Mathematics 11	2,886	65	1,135	26	416	9

Figure 7.1 presents the percentages of students at each achievement level by grade for ELA.

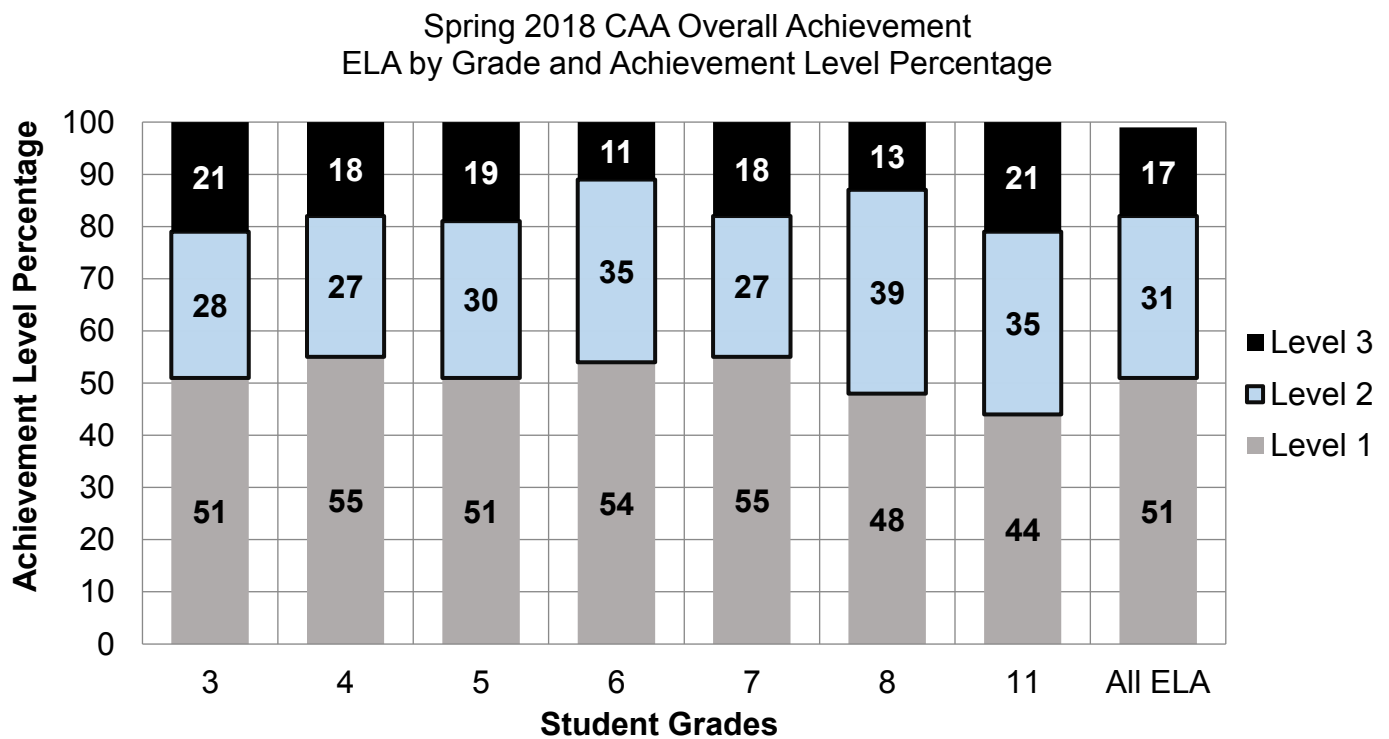


Figure 7.1 Percentage of Students at Each Achievement Level in ELA

[Figure 7.2](#) presents the percentages of students at each achievement level by grade for mathematics.

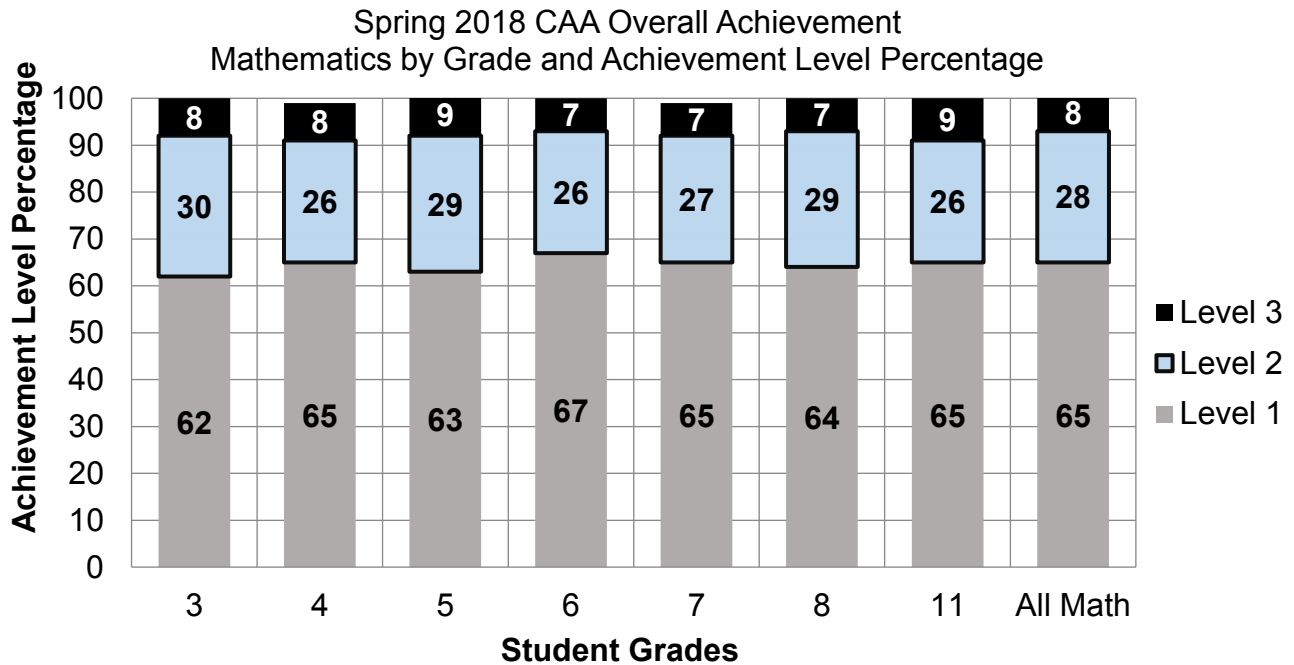


Figure 7.2 Percentage of Students at Each Achievement Level in Mathematics

The selected percentiles of the scale score distributions are presented in [Table 7.C.1](#) and [Table 7.C.2](#) in [appendix 7.C](#). CAA reporting scale score distribution information for each grade and content area is available in [Table 7.C.3](#) through [Table 7.C.16](#) starting on page [149](#).

7.2.2. Group Scores

Statistics summarizing student performance by content area and grade for selected groups of students are provided in [appendix 7.D](#). In [Table 7.D.1](#) through [Table 7.D.14](#), students are grouped by demographic characteristics, including gender, ethnicity, English-language fluency, economic status (disadvantaged or not), primary disability, migrant status, and ethnicity by economic status. For each demographic student group, the number of students with a valid scale score, scale score means and standard deviations, and the percentage of students in each achievement level are included in the tables.

[Table 7.5](#) provides definitions of the demographic student groups. To protect student privacy, when the number of students in a student group is 10 or fewer, the summary statistics are not reported and are presented as “NA.”

Table 7.5 Demographic Student Groups to Be Reported

Category	Student Groups
Gender	<ul style="list-style-type: none"> • Male • Female
Ethnicity	<ul style="list-style-type: none"> • American Indian or Alaska Native • Asian • Native Hawaiian or Other Pacific Islander • Filipino • Hispanic or Latino • Black or African American • White • Two or more races
English-Language Fluency	<ul style="list-style-type: none"> • English only • Initial fluent English proficient • English learner • Reclassified fluent English proficient • To be determined • English proficiency Unknown
Economic Status	<ul style="list-style-type: none"> • Not economically disadvantaged • Economically disadvantaged
Primary Disability Type	<ul style="list-style-type: none"> • Intellectual disability • Hearing Impairment • Speech or language impairment • Visual Impairment • Emotional disturbance • Orthopedic impairment • Other health impairment • Specific learning disability • Deaf-blindness • Multiple disabilities • Autism • Traumatic brain injury • Not classified⁹
Migrant Status	<ul style="list-style-type: none"> • Eligible for the Title I Part C Migrant Program (Migrant) • Not eligible for the Title I Part C Migrant Program (Nonmigrant)

⁹ Disability information was changed or removed after student testing.

7.3. Reports Produced and Scores for Each Report

Score summaries are reported for different purposes for the CAAs for ELA and mathematics online assessments. The four major purposes are to

1. help facilitate conversations between parents/guardians and teachers about student performance;
2. serve as a tool to help parents/guardians and teachers work together to improve student learning;
3. help schools and school districts identify strengths and areas that need improvement in their educational programs; and
4. provide the public and policymakers with information about student achievement.

This subsection provides detailed descriptions of the uses and applications of the California Assessment of Student Performance and Progress (CAASPP) reporting for students. CAAs for ELA and mathematics, as one of the components in CAASPP, are reported through the CAASPP reporting system.

7.3.1. Online Reporting

TOMS is a secure website hosted by ETS that permits LEA users to manage the CAASPP online summative assessments and to inform the TDS. This system uses a role-specific design to restrict access to certain tools and applications based on the user's designated role. Specific functions of TOMS include the following:

- Manage user access privileges
- Manage test administration calendars and testing windows
- Manage student test assignments
- Manage and confirm the accuracy of students' test settings (i.e., designated supports and accommodations) prior to testing
- Generate and download various reports

In addition, TOMS communicates with the Online Reporting System (ORS) that provides authorized users with interactive and cumulative online reports for ELA and mathematics at the student, school, and LEA levels. The ORS provides access to two CAASPP functions: Score Reports, which provide preliminary score data for each administered test available in the reporting system; and Completion Status Reports, which provide completion data for students taking the test in the reporting system.

Based on CAA reporting requirements for ELA and mathematics, the ORS generates preliminary summative reports containing information describing student knowledge and skills. The online aggregate reports provide data at the student, classroom, school, and LEA levels and are available to be downloaded in PDF, Excel, and comma-separated value formats.

7.3.2. Special Cases

Student scores are not reported for the following cases:

- Student was absent from the test administration
- Student moved or had a medical emergency during testing
- Student's parent/guardian requested exemption from testing

- Student did not log on to test systems
- Student was administered out-of-grade level tests
- Student was invalidated in the system (not reported in aggregated reporting)

7.3.3. Types of Score Reports

CAASPP reports fall into three categories. The specific reports within each category are presented in this subsection.

7.3.3.1. Student Score Report

The CAA Student Score Report is the official score report for parents or guardians and describes the student's results, including scale scores and achievement levels, for both ELA and mathematics.

Scores for students who use accommodations or designated supports are reported in the same way as for students without accommodations or designated supports. Detailed information about accessibility resources is described in subsection [2.5.1 Universal Tools, Designated Supports, and Accommodations](#) in [chapter 2](#).

LEAs receive printed Student Score Reports and distribute them to parents/guardians and students' schools. This report is also provided in a printable PDF file that the LEA CAASPP coordinator may download from TOMS. CAA Student Score Reports that include individual student results are not distributed beyond the student's school. Further information about the Student Score Report and other reports is provided on the CDE CAASPP Student Score Report Information web page at <https://www.cde.ca.gov/ta/tg/ca/caasppsrinfo.asp>.

7.3.3.2. School Report

The school performance report provides group information by content area, including the school's average scale score and the percentage of students at each achievement level. This report also provides a list of students' scale scores and achievement levels.

The school scale score report is presented as a dashboard to provide group information by content area. It includes a histogram showing the distribution of students' scale scores.

7.3.3.3. District Report

The district performance report provides school-level information by content area, including the school average scale score and the percentage of students at each achievement level.

This report lists all the proficiency information for each school, including the testing status as shown in subsection [7.3.2 Special Cases](#), number of students who completed testing, average scale score, and percentage of students in each achievement level.

The district scale score report is presented as a dashboard to provide cumulative information. A histogram is included to show the frequency of schools with mean scale scores in each score interval.

The CAASPP aggregate reports and student data files for the LEA are available for the LEA CAASPP coordinator to download from TOMS. The LEA CAASPP coordinator forwards the appropriate reports to test sites.

Internet reports are described on the CDE website and are accessible to the public online at <http://caaspp.cde.ca.gov/>.

Preliminary individual student scores are also available to LEAs prior to the release of final reports via electronic reporting that can be accessed using the ORS. This application permits LEAs to view preliminary results for all tests taken.

7.3.4. Score Report Applications

CAAs for ELA and mathematics test results provide parents or guardians with information about their child’s progress. The results are a tool for increasing communication and collaboration between parents or guardians and teachers. These results are one measure of student’s academic performance and provide limited information. Like any important measure of student performance, they should be viewed with other available information such as progress on individualized education program goals, assignments, and teacher conferences. Results can be used to communicate with a student’s teachers about how to help the student progress in ELA and mathematics.

Schools may use the CAAs for ELA and mathematics results to help make decisions about how to support student achievement. CAA results, however, should never be used as the only source of information to make important decisions about a child’s education.

CAAs for ELA and mathematics results help schools and LEAs identify strengths and weaknesses in their instructional programs. Each year, staff from schools and LEAs examine CAA test results at each grade level and content area tested. Their findings are used to help determine

- the extent to which students are learning the alternate achievement standards,
- instructional areas that can be improved,
- teaching strategies that can be developed to address needs of students, and
- decisions about how to use funds to help ensure that students achieve the alternate achievement standards.

7.3.5. Criteria for Interpreting Individual Test Scores

LEAs may use the CAA results to help inform decisions around instructional needs, but the CAA results should not be used in isolation to make inferences about instructional needs. It is important to remember that results from a single test can provide only limited information. Other relevant information should be considered as well. It is advisable for parents to evaluate their child’s strengths and weaknesses in the relevant topics by reviewing classroom work and progress reports in addition to the student’s CAAs for ELA and mathematics results. It is also important to note that a student’s score in a content area contains measurement error and could vary to some extent if the student were retested.

7.3.6. Criteria for Interpreting Group Score Reports

The information presented in various reports must be interpreted with caution when making performance comparisons. When comparing scale scores and achievement-level results, the user is limited to the comparisons within a content area and grade level. The score scales for ELA and mathematics are not comparable to each other, nor are the score scales comparable across grade levels. The user may compare scale scores for the same content area and grade, within a school, between schools, or between a school and its district, its county, or the state. For more details on the criteria for interpreting information provided on the score reports, refer to the *2017–18 CAASPP Post-Test Guide* (CDE, 2018).

References

California Department of Education. (2018). *2017–18 CAASPP post-test guide: Technical information for student score reports for CAASPP LEA and test site coordinators and research specialists*. Sacramento, CA: California Department of Education. Retrieved from http://www.caaspp.org/rsc/pdfs/CAASPP-post-test_guide.2017-18.pdf

Educational Testing Service. (2016). *Standard-setting technical report for the California Alternate Assessments: English language arts/literacy and mathematics grades three through eight and grade eleven*. Princeton, NJ: Educational Testing Service. Retrieved from <http://www.cde.ca.gov/ta/tg/ca/documents/caa16standardsetting.pdf>

Stocking, M. L. (1996). An alternative method for scoring adaptive tests. *Journal of Educational and Behavioral Statistics*, 21, 365–389.

Appendix 7.A: Theta Scores (Estimated Ability Values) of Students Taking Each Test

Notes:

- An expression that opens with a parenthesis and closes with a bracket indicates that a value is greater than the first number and is less than or equal to the second number. For example, “(0.5, 2]” indicates a value greater than 0.5 but less than or equal to 2.
- To protect student privacy, when the number of students in a student group is 10 or fewer, the summary statistics of performance are not reported and are presented as “NA.”

Table 7.A.1 Frequency Distribution of Theta for Overall Scores—English Language Arts/Literacy (ELA)

Theta Score	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
Incomplete	975	869	865	807	826	863	617
[−6.0, −6.0]	3	5	1	3	2	1	1
(−6.0, −5.5]	NA	NA	NA	NA	NA	NA	NA
(−5.5, −5.0]	NA	NA	6	NA	22	NA	NA
(−5.0, −4.5]	13	18	15	NA	NA	9	19
(−4.5, −4.0]	NA	NA	29	9	43	NA	41
(−4.0, −3.5]	32	39	13	20	47	14	13
(−3.5, −3.0]	16	39	30	10	32	63	17
(−3.0, −2.5]	43	39	31	43	41	22	14
(−2.5, −2.0]	78	60	65	70	50	21	40
(−2.0, −1.5]	137	123	147	142	157	69	102
(−1.5, −1.0]	327	408	409	278	418	215	291
(−1.0, −0.5]	611	740	515	852	560	617	464
(−0.5, 0.0]	722	600	759	838	775	1,121	713
(0.0, 0.5]	749	774	705	842	896	934	588
(0.5, 1.0]	517	753	752	700	641	709	590
(1.0, 1.5]	453	510	602	502	432	374	452
(1.5, 2.0]	219	197	260	177	302	118	307
(2.0, 2.5]	91	77	60	45	94	45	124
(2.5, 3.0]	57	34	25	44	20	24	44
(3.0, 3.5]	33	25	27	NA	17	16	12
(3.5, 4.0]	16	11	11	4	NA	2	NA
(4.0, 4.5]	NA	NA	NA	NA	4	NA	6
(4.5, 5.0]	NA	NA	NA	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA	NA	NA	NA
(5.5, 6.0]	10	3	3	NA	4	1	2

Table 7.A.2 Frequency Distribution of Theta for Overall Scores—Mathematics

Theta Score	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
Incomplete	989	938	946	980	852	955	635
[−6.0, −6.0]	10	4	11	12	12	3	14
(−6.0, −5.5]	NA	NA	NA	NA	NA	NA	NA
(−5.5, −5.0]	NA	NA	NA	NA	NA	NA	NA
(−5.0, −4.5]	NA	NA	NA	NA	NA	NA	NA
(−4.5, −4.0]	NA	18	NA	NA	NA	NA	NA
(−4.0, −3.5]	49	NA	39	NA	27	13	38
(−3.5, −3.0]	NA	11	16	49	NA	NA	25
(−3.0, −2.5]	26	39	24	19	74	21	21
(−2.5, −2.0]	49	56	27	16	13	41	51
(−2.0, −1.5]	52	93	85	37	46	36	42
(−1.5, −1.0]	115	223	153	106	159	157	169
(−1.0, −0.5]	436	559	599	470	642	484	532
(−0.5, 0.0]	1,118	1,186	1,137	1,494	1,231	1,363	1,009
(0.0, 0.5]	998	1,154	1,111	1,178	1,278	1,257	925
(0.5, 1.0]	852	712	718	617	654	549	571
(1.0, 1.5]	293	208	311	269	216	225	241
(1.5, 2.0]	52	74	104	63	104	81	112
(2.0, 2.5]	32	21	17	40	40	33	17
(2.5, 3.0]	17	4	13	6	12	4	25
(3.0, 3.5]	8	9	4	5	14	6	NA
(3.5, 4.0]	3	NA	NA	4	NA	NA	9
(4.0, 4.5]	1	NA	2	NA	1	1	NA
(4.5, 5.0]	NA	NA	NA	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA	NA	NA	NA
(5.5, 6.0]	1	NA	2	1	NA	NA	1

Table 7.A.3 Frequency Distribution of Theta by Pathway for ELA, Grade Three

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	973	2	NA	NA
[-6.0, -6.0]	3	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	13	NA	NA	NA
(-4.5, -4.0]	NA	NA	NA	NA
(-4.0, -3.5]	28	4	NA	NA
(-3.5, -3.0]	1	15	NA	NA
(-3.0, -2.5]	3	40	NA	NA
(-2.5, -2.0]	4	74	NA	NA
(-2.0, -1.5]	6	131	NA	NA
(-1.5, -1.0]	3	317	7	NA
(-1.0, -0.5]	NA	557	53	1
(-0.5, 0.0]	NA	434	283	5
(0.0, 0.5]	NA	234	457	58
(0.5, 1.0]	NA	23	302	192
(1.0, 1.5]	NA	2	229	222
(1.5, 2.0]	NA	NA	46	173
(2.0, 2.5]	NA	NA	23	68
(2.5, 3.0]	NA	NA	7	50
(3.0, 3.5]	NA	NA	NA	33
(3.5, 4.0]	NA	NA	NA	16
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	10

Table 7.A.4 Frequency Distribution of Theta by Pathway for ELA, Grade Four

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	869	NA	NA	NA
[-6.0, -6.0]	5	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	18	NA	NA	NA
(-4.5, -4.0]	NA	NA	NA	NA
(-4.0, -3.5]	39	NA	NA	NA
(-3.5, -3.0]	16	23	NA	NA
(-3.0, -2.5]	7	32	NA	NA
(-2.5, -2.0]	1	59	NA	NA
(-2.0, -1.5]	7	108	8	NA
(-1.5, -1.0]	2	398	8	NA
(-1.0, -0.5]	NA	613	127	NA
(-0.5, 0.0]	NA	256	326	18
(0.0, 0.5]	NA	66	624	84
(0.5, 1.0]	NA	2	348	403
(1.0, 1.5]	NA	NA	152	358
(1.5, 2.0]	NA	NA	25	172
(2.0, 2.5]	NA	NA	3	74
(2.5, 3.0]	NA	NA	NA	34
(3.0, 3.5]	NA	NA	NA	25
(3.5, 4.0]	NA	NA	NA	11
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	3

Table 7.A.5 Frequency Distribution of Theta by Pathway for ELA, Grade Five

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	859	6	NA	NA
[-6.0, -6.0]	1	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	6	NA	NA	NA
(-5.0, -4.5]	15	NA	NA	NA
(-4.5, -4.0]	29	NA	NA	NA
(-4.0, -3.5]	7	6	NA	NA
(-3.5, -3.0]	16	14	NA	NA
(-3.0, -2.5]	4	27	NA	NA
(-2.5, -2.0]	2	63	NA	NA
(-2.0, -1.5]	10	128	9	NA
(-1.5, -1.0]	4	390	15	NA
(-1.0, -0.5]	NA	392	119	4
(-0.5, 0.0]	NA	276	474	9
(0.0, 0.5]	NA	53	481	171
(0.5, 1.0]	NA	2	389	361
(1.0, 1.5]	NA	NA	168	434
(1.5, 2.0]	NA	NA	13	247
(2.0, 2.5]	NA	NA	6	54
(2.5, 3.0]	NA	NA	NA	25
(3.0, 3.5]	NA	NA	NA	27
(3.5, 4.0]	NA	NA	NA	11
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	3

Table 7.A.6 Frequency Distribution of Theta by Pathway for ELA, Grade Six

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	802	5	NA	NA
[-6.0, -6.0]	3	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	NA	NA	NA	NA
(-4.5, -4.0]	9	NA	NA	NA
(-4.0, -3.5]	20	NA	NA	NA
(-3.5, -3.0]	8	2	NA	NA
(-3.0, -2.5]	17	26	NA	NA
(-2.5, -2.0]	13	46	11	NA
(-2.0, -1.5]	7	99	36	NA
(-1.5, -1.0]	3	152	115	8
(-1.0, -0.5]	NA	78	759	15
(-0.5, 0.0]	NA	5	741	92
(0.0, 0.5]	NA	NA	273	569
(0.5, 1.0]	NA	NA	89	611
(1.0, 1.5]	NA	NA	7	495
(1.5, 2.0]	NA	NA	NA	177
(2.0, 2.5]	NA	NA	NA	45
(2.5, 3.0]	NA	NA	NA	44
(3.0, 3.5]	NA	NA	NA	NA
(3.5, 4.0]	NA	NA	NA	4
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	NA

Table 7.A.7 Frequency Distribution of Theta by Pathway for ELA, Grade Seven

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	826	NA	NA	NA
[-6.0, -6.0]	2	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	22	NA	NA	NA
(-5.0, -4.5]	NA	NA	NA	NA
(-4.5, -4.0]	43	NA	NA	NA
(-4.0, -3.5]	23	24	NA	NA
(-3.5, -3.0]	3	29	NA	NA
(-3.0, -2.5]	5	36	NA	NA
(-2.5, -2.0]	3	47	NA	NA
(-2.0, -1.5]	2	142	13	NA
(-1.5, -1.0]	NA	394	24	NA
(-1.0, -0.5]	NA	430	126	4
(-0.5, 0.0]	NA	347	410	18
(0.0, 0.5]	NA	56	781	59
(0.5, 1.0]	NA	2	369	270
(1.0, 1.5]	NA	NA	144	288
(1.5, 2.0]	NA	NA	39	263
(2.0, 2.5]	NA	NA	NA	94
(2.5, 3.0]	NA	NA	NA	20
(3.0, 3.5]	NA	NA	NA	17
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	4
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	4

Table 7.A.8 Frequency Distribution of Theta by Pathway for ELA, Grade Eight

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	862	1	NA	NA
[-6.0, -6.0]	1	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	9	NA	NA	NA
(-4.5, -4.0]	NA	NA	NA	NA
(-4.0, -3.5]	14	NA	NA	NA
(-3.5, -3.0]	56	7	NA	NA
(-3.0, -2.5]	9	13	NA	NA
(-2.5, -2.0]	NA	21	NA	NA
(-2.0, -1.5]	5	64	NA	NA
(-1.5, -1.0]	5	197	13	NA
(-1.0, -0.5]	1	547	69	NA
(-0.5, 0.0]	NA	705	410	6
(0.0, 0.5]	NA	135	712	87
(0.5, 1.0]	NA	26	359	324
(1.0, 1.5]	NA	NA	127	247
(1.5, 2.0]	NA	NA	20	98
(2.0, 2.5]	NA	NA	1	44
(2.5, 3.0]	NA	NA	NA	24
(3.0, 3.5]	NA	NA	NA	16
(3.5, 4.0]	NA	NA	NA	2
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	1

Table 7.A.9 Frequency Distribution of Theta by Pathway for ELA, Grade Eleven

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	617	NA	NA	NA
[-6.0, -6.0]	1	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	19	NA	NA	NA
(-4.5, -4.0]	41	NA	NA	NA
(-4.0, -3.5]	6	7	NA	NA
(-3.5, -3.0]	4	13	NA	NA
(-3.0, -2.5]	NA	14	NA	NA
(-2.5, -2.0]	4	36	NA	NA
(-2.0, -1.5]	4	98	NA	NA
(-1.5, -1.0]	1	268	22	NA
(-1.0, -0.5]	NA	313	150	1
(-0.5, 0.0]	NA	178	533	2
(0.0, 0.5]	NA	41	524	23
(0.5, 1.0]	NA	11	410	169
(1.0, 1.5]	NA	NA	197	255
(1.5, 2.0]	NA	NA	18	289
(2.0, 2.5]	NA	NA	1	123
(2.5, 3.0]	NA	NA	NA	44
(3.0, 3.5]	NA	NA	NA	12
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	6
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	2

Table 7.A.10 Frequency Distribution of Theta by Pathway for Mathematics, Grade Three

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	983	6	NA	NA
[-6.0, -6.0]	10	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	NA	NA	NA	NA
(-4.5, -4.0]	NA	NA	NA	NA
(-4.0, -3.5]	49	NA	NA	NA
(-3.5, -3.0]	NA	NA	NA	NA
(-3.0, -2.5]	13	13	NA	NA
(-2.5, -2.0]	12	37	NA	NA
(-2.0, -1.5]	4	39	9	NA
(-1.5, -1.0]	8	79	28	NA
(-1.0, -0.5]	1	307	125	3
(-0.5, 0.0]	NA	157	843	118
(0.0, 0.5]	NA	28	493	477
(0.5, 1.0]	NA	NA	53	799
(1.0, 1.5]	NA	NA	NA	293
(1.5, 2.0]	NA	NA	NA	52
(2.0, 2.5]	NA	NA	NA	32
(2.5, 3.0]	NA	NA	NA	17
(3.0, 3.5]	NA	NA	NA	8
(3.5, 4.0]	NA	NA	NA	3
(4.0, 4.5]	NA	NA	NA	1
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	1

Table 7.A.11 Frequency Distribution of Theta by Pathway for Mathematics, Grade Four

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	926	12	NA	NA
[-6.0, -6.0]	4	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	NA	NA	NA	NA
(-4.5, -4.0]	18	NA	NA	NA
(-4.0, -3.5]	NA	NA	NA	NA
(-3.5, -3.0]	7	4	NA	NA
(-3.0, -2.5]	13	26	NA	NA
(-2.5, -2.0]	8	48	NA	NA
(-2.0, -1.5]	8	85	NA	NA
(-1.5, -1.0]	4	206	13	NA
(-1.0, -0.5]	2	489	68	NA
(-0.5, 0.0]	NA	522	661	3
(0.0, 0.5]	NA	49	1,023	82
(0.5, 1.0]	NA	NA	392	320
(1.0, 1.5]	NA	NA	72	136
(1.5, 2.0]	NA	NA	8	66
(2.0, 2.5]	NA	NA	1	20
(2.5, 3.0]	NA	NA	1	3
(3.0, 3.5]	NA	NA	NA	9
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	NA

Table 7.A.12 Frequency Distribution of Theta by Pathway for Mathematics, Grade Five

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	941	5	NA	NA
[-6.0, -6.0]	11	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	NA	NA	NA	NA
(-4.5, -4.0]	NA	NA	NA	NA
(-4.0, -3.5]	39	NA	NA	NA
(-3.5, -3.0]	9	7	NA	NA
(-3.0, -2.5]	12	12	NA	NA
(-2.5, -2.0]	7	20	NA	NA
(-2.0, -1.5]	6	72	7	NA
(-1.5, -1.0]	2	127	24	NA
(-1.0, -0.5]	2	417	180	NA
(-0.5, 0.0]	NA	252	862	23
(0.0, 0.5]	NA	25	800	286
(0.5, 1.0]	NA	NA	181	537
(1.0, 1.5]	NA	NA	10	301
(1.5, 2.0]	NA	NA	1	103
(2.0, 2.5]	NA	NA	NA	17
(2.5, 3.0]	NA	NA	NA	13
(3.0, 3.5]	NA	NA	NA	4
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	2
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	2

Table 7.A.13 Frequency Distribution of Theta by Pathway for Mathematics, Grade Six

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	974	6	NA	NA
[-6.0, -6.0]	12	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	NA	NA	NA	NA
(-4.5, -4.0]	NA	NA	NA	NA
(-4.0, -3.5]	NA	NA	NA	NA
(-3.5, -3.0]	49	NA	NA	NA
(-3.0, -2.5]	12	7	NA	NA
(-2.5, -2.0]	7	9	NA	NA
(-2.0, -1.5]	6	31	NA	NA
(-1.5, -1.0]	6	97	3	NA
(-1.0, -0.5]	3	439	28	NA
(-0.5, 0.0]	NA	863	614	17
(0.0, 0.5]	NA	194	754	230
(0.5, 1.0]	NA	5	263	349
(1.0, 1.5]	NA	NA	20	249
(1.5, 2.0]	NA	NA	3	60
(2.0, 2.5]	NA	NA	1	39
(2.5, 3.0]	NA	NA	NA	6
(3.0, 3.5]	NA	NA	NA	5
(3.5, 4.0]	NA	NA	NA	4
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	1

Table 7.A.14 Frequency Distribution of Theta by Pathway for Mathematics, Grade Seven

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	848	4	NA	NA
[-6.0, -6.0]	12	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	NA	NA	NA	NA
(-4.5, -4.0]	NA	NA	NA	NA
(-4.0, -3.5]	27	NA	NA	NA
(-3.5, -3.0]	NA	NA	NA	NA
(-3.0, -2.5]	66	8	NA	NA
(-2.5, -2.0]	5	8	NA	NA
(-2.0, -1.5]	3	43	NA	NA
(-1.5, -1.0]	3	97	59	NA
(-1.0, -0.5]	4	385	242	11
(-0.5, 0.0]	NA	127	827	277
(0.0, 0.5]	NA	5	504	769
(0.5, 1.0]	NA	NA	63	591
(1.0, 1.5]	NA	NA	2	214
(1.5, 2.0]	NA	NA	1	103
(2.0, 2.5]	NA	NA	NA	40
(2.5, 3.0]	NA	NA	NA	12
(3.0, 3.5]	NA	NA	NA	14
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	1
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	NA

Table 7.A.15 Frequency Distribution of Theta by Pathway for Mathematics, Grade Eight

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	946	9	NA	NA
[-6.0, -6.0]	3	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	NA	NA	NA	NA
(-4.5, -4.0]	NA	NA	NA	NA
(-4.0, -3.5]	13	NA	NA	NA
(-3.5, -3.0]	NA	NA	NA	NA
(-3.0, -2.5]	17	4	NA	NA
(-2.5, -2.0]	20	21	NA	NA
(-2.0, -1.5]	5	31	NA	NA
(-1.5, -1.0]	4	111	42	NA
(-1.0, -0.5]	1	229	251	3
(-0.5, 0.0]	1	221	1,037	104
(0.0, 0.5]	NA	17	650	590
(0.5, 1.0]	NA	NA	98	451
(1.0, 1.5]	NA	NA	4	221
(1.5, 2.0]	NA	NA	1	80
(2.0, 2.5]	NA	NA	NA	33
(2.5, 3.0]	NA	NA	NA	4
(3.0, 3.5]	NA	NA	NA	6
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	1
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	NA

Table 7.A.16 Frequency Distribution of Theta by Pathway for Mathematics, Grade Eleven

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	629	6	NA	NA
[-6.0, -6.0]	14	NA	NA	NA
(-6.0, -5.5]	NA	NA	NA	NA
(-5.5, -5.0]	NA	NA	NA	NA
(-5.0, -4.5]	NA	NA	NA	NA
(-4.5, -4.0]	NA	NA	NA	NA
(-4.0, -3.5]	38	NA	NA	NA
(-3.5, -3.0]	11	14	NA	NA
(-3.0, -2.5]	4	17	NA	NA
(-2.5, -2.0]	8	43	NA	NA
(-2.0, -1.5]	3	39	NA	NA
(-1.5, -1.0]	2	150	17	NA
(-1.0, -0.5]	NA	475	53	4
(-0.5, 0.0]	NA	397	552	60
(0.0, 0.5]	NA	73	603	249
(0.5, 1.0]	NA	2	110	459
(1.0, 1.5]	NA	NA	1	240
(1.5, 2.0]	NA	NA	NA	112
(2.0, 2.5]	NA	NA	NA	17
(2.5, 3.0]	NA	NA	NA	25
(3.0, 3.5]	NA	NA	NA	NA
(3.5, 4.0]	NA	NA	NA	9
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	1

Appendix 7.B: Raw Score, Theta, and Scale Score Distributions for Each Pathway on Each Test

Notes:

- An incomplete test was assigned either the lowest obtainable scale score (LOSS) or lowest scale score +1 (LOSS+1).
- When a student was logged on to the test delivery system but did not answer any item, LOSS was assigned as 300 for grade three, 400 for grade four, . . . , 900 for grade 11.
- When a student was logged on and answered fewer than four items, LOSS+1 was assigned, such as 301 for grade three, 401 for grade four, . . . , 901 for grade eleven.
- For those incomplete test cases, raw scores were overwritten as zero and theta scores were not estimated.
- Percentages for some pathways may not sum up to exactly 100 due to rounding.
- In [Table 7.B.1](#) through [Table 7.B.14](#), the pathway indicates the set of modules a given student received:

Pathway	Combination of Modules
Early Exit	Stage 1 (as router) and Exit the test
Easy	Stage 1 (as router) and Stage 2 Easy Module
Moderate	Stage 1 (as router) and Stage 2 Moderate Module
Hard	Stage 1 (as router) and Stage 2 Hard Module

Table 7.B.1 Raw-Score-to-Scale-Score Distribution for ELA, Grade Three

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	300	706	68%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	301	267	26%	NA	301	2	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	303	3	0%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
1	-4.753	303	13	1%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
2	-3.995	303	26	3%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
3	-3.525	303	2	0%	-3.525	303	4	0%	NA	303	NA	NA	NA	303	NA	NA
4	-3.173	303	1	0%	-3.173	303	15	1%	NA	307	NA	NA	NA	305	NA	NA
5	-2.886	305	2	0%	-2.886	305	22	1%	NA	311	NA	NA	NA	309	NA	NA
6	-2.641	308	1	0%	-2.641	308	18	1%	NA	315	NA	NA	NA	313	NA	NA
7	NA	312	NA	NA	-2.426	312	17	1%	NA	318	NA	NA	NA	316	NA	NA
8	-2.231	315	2	0%	-2.231	315	34	2%	NA	321	NA	NA	NA	319	NA	NA
9	-2.054	317	2	0%	-2.054	317	23	1%	NA	324	NA	NA	NA	322	NA	NA
10	-1.889	320	3	0%	-1.889	320	45	2%	NA	326	NA	NA	NA	325	NA	NA
11	-1.735	322	2	0%	-1.735	322	34	2%	-1.313	328	1	0%	NA	327	NA	NA
12	-1.590	324	1	0%	-1.590	324	52	3%	-1.170	330	3	0%	NA	330	NA	NA
13	-1.451	326	2	0%	-1.451	326	64	3%	-1.033	333	3	0%	NA	332	NA	NA
14	-1.317	328	1	0%	-1.317	328	73	4%	-0.901	334	7	1%	-0.935	334	1	0%
15	NA	330	NA	NA	-1.187	330	95	5%	-0.772	336	9	1%	NA	336	NA	NA
16	NA	332	NA	NA	-1.061	332	85	5%	-0.647	338	17	1%	NA	338	NA	NA
17	NA	334	NA	NA	-0.937	334	126	7%	-0.524	340	20	1%	NA	340	NA	NA
18	NA	336	NA	NA	-0.814	336	123	7%	-0.402	342	47	3%	NA	342	NA	NA

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	338	NA	NA	-0.692	338	169	9%	-0.282	344	60	4%	-0.260	344	2	0%
20	NA	339	NA	NA	-0.570	339	139	8%	-0.161	346	84	6%	-0.129	346	3	0%
21	NA	341	NA	NA	-0.448	341	131	7%	-0.040	347	92	7%	0.001	348	7	1%
22	NA	343	NA	NA	-0.325	343	118	6%	0.082	349	104	7%	0.132	350	14	2%
23	NA	345	NA	NA	-0.200	345	92	5%	0.207	351	117	8%	0.264	352	18	2%
24	NA	347	NA	NA	-0.071	347	93	5%	0.335	353	106	8%	0.398	354	19	2%
25	NA	349	NA	NA	0.061	349	88	5%	0.467	355	130	9%	0.534	356	37	4%
26	NA	351	NA	NA	0.199	351	63	3%	0.605	357	110	8%	0.674	358	36	4%
27	NA	353	NA	NA	0.344	353	47	3%	0.752	359	106	8%	0.819	360	58	7%
28	NA	355	NA	NA	0.500	355	36	2%	0.909	362	86	6%	0.970	363	61	7%
29	NA	358	NA	NA	0.669	358	17	1%	1.080	364	103	7%	1.129	365	60	7%
30	NA	361	NA	NA	0.857	361	6	0%	1.270	367	74	5%	1.299	367	76	9%
31	NA	364	NA	NA	1.072	364	2	0%	1.486	370	52	4%	1.483	370	86	10%
32	NA	368	NA	NA	NA	368	NA	NA	1.743	374	46	3%	1.687	373	87	11%
33	NA	373	NA	NA	NA	373	NA	NA	2.063	379	23	2%	1.921	377	86	10%
34	NA	379	NA	NA	NA	379	NA	NA	2.500	386	7	1%	2.197	381	68	8%
35	NA	390	NA	NA	NA	390	NA	NA	NA	396	NA	NA	2.545	386	50	6%
36	NA	399	NA	NA	NA	399	NA	NA	NA	399	NA	NA	3.022	393	33	4%
37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.809	399	16	2%
38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.000	399	10	1%

Table 7.B.2 Raw-Score-to-Scale-Score Distribution for ELA, Grade Four

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	400	628	65%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	401	241	25%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	403	5	1%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
1	-4.665	403	18	2%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
2	-3.917	403	39	4%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
3	-3.456	403	8	1%	-3.456	403	12	1%	NA	403	NA	NA	NA	403	NA	NA
4	-3.112	403	8	1%	-3.112	403	11	1%	NA	403	NA	NA	NA	409	NA	NA
5	-2.832	403	6	1%	-2.832	403	13	1%	NA	407	NA	NA	NA	413	NA	NA
6	-2.593	406	1	0%	-2.593	406	19	1%	NA	411	NA	NA	NA	417	NA	NA
7	-2.381	409	1	0%	-2.381	409	21	1%	NA	414	NA	NA	NA	420	NA	NA
8	NA	412	NA	NA	-2.191	412	18	1%	NA	417	NA	NA	NA	423	NA	NA
9	NA	415	NA	NA	-2.016	415	20	1%	-1.685	420	3	0%	NA	426	NA	NA
10	-1.853	417	1	0%	-1.853	417	27	2%	-1.515	422	5	0%	NA	429	NA	NA
11	-1.700	420	3	0%	-1.700	420	29	2%	-1.356	425	1	0%	NA	431	NA	NA
12	-1.555	422	3	0%	-1.555	422	52	3%	-1.203	427	3	0%	NA	434	NA	NA
13	-1.416	424	1	0%	-1.416	424	69	4%	-1.057	429	4	0%	NA	436	NA	NA
14	-1.282	426	1	0%	-1.282	426	75	5%	-0.915	431	5	0%	-0.446	438	1	0%
15	NA	428	NA	NA	-1.152	428	120	8%	-0.777	433	16	1%	NA	440	NA	NA
16	NA	430	NA	NA	-1.024	430	134	9%	-0.642	435	42	3%	-0.158	443	6	1%
17	NA	432	NA	NA	-0.899	432	163	10%	-0.510	437	64	4%	-0.019	445	11	1%
18	NA	433	NA	NA	-0.774	433	158	10%	-0.379	439	72	4%	0.120	447	10	1%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	435	NA	NA	-0.649	435	132	8%	-0.249	441	109	7%	0.257	449	30	3%
20	NA	437	NA	NA	-0.524	437	160	10%	-0.119	443	145	9%	0.395	451	44	4%
21	NA	439	NA	NA	-0.396	439	114	7%	0.011	445	140	9%	0.535	453	79	7%
22	NA	441	NA	NA	-0.266	441	81	5%	0.142	447	161	10%	0.678	455	92	8%
23	NA	443	NA	NA	-0.132	443	61	4%	0.275	449	156	10%	0.824	457	113	10%
24	NA	445	NA	NA	0.008	445	33	2%	0.411	451	167	10%	0.977	460	119	10%
25	NA	447	NA	NA	0.154	447	21	1%	0.550	453	128	8%	1.138	462	99	8%
26	NA	450	NA	NA	0.310	450	7	0%	0.694	455	120	7%	1.310	465	116	10%
27	NA	452	NA	NA	0.477	452	5	0%	0.844	458	100	6%	1.497	467	143	12%
28	NA	455	NA	NA	0.659	455	2	0%	1.003	460	63	4%	1.704	471	104	9%
29	NA	458	NA	NA	NA	458	NA	NA	1.172	463	55	3%	1.939	474	68	6%
30	NA	461	NA	NA	NA	461	NA	NA	1.356	465	34	2%	2.214	478	74	6%
31	NA	465	NA	NA	NA	465	NA	NA	1.559	468	14	1%	2.555	483	34	3%
32	NA	471	NA	NA	NA	471	NA	NA	1.789	472	11	1%	3.013	490	25	2%
33	NA	477	NA	NA	NA	477	NA	NA	2.059	476	3	0%	3.759	499	11	1%
34	NA	489	NA	NA	NA	489	NA	NA	NA	481	NA	NA	6.000	499	3	0%
35	NA	499	NA	NA	NA	499	NA	NA	NA	488	NA	NA	NA	NA	NA	NA
36	NA	NA	NA	NA	NA	NA	NA	NA	NA	499	NA	NA	NA	NA	NA	NA
37	NA	NA	NA	NA	NA	NA	NA	NA	NA	499	NA	NA	NA	NA	NA	NA

Table 7.B.3 Raw-Score-to Scale-Score Distribution for ELA, Grade Five

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	500	694	73%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	501	165	17%	NA	501	6	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	503	1	0%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
1	-5.269	503	6	1%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
2	-4.513	503	15	2%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
3	-4.043	503	29	3%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
4	-3.688	503	7	1%	-3.688	503	6	0%	NA	503	NA	NA	NA	503	NA	NA
5	-3.397	503	11	1%	-3.397	503	7	1%	NA	503	NA	NA	NA	503	NA	NA
6	-3.145	503	5	1%	-3.145	503	7	1%	NA	503	NA	NA	NA	503	NA	NA
7	-2.920	503	3	0%	-2.920	503	9	1%	NA	506	NA	NA	NA	506	NA	NA
8	-2.714	504	1	0%	-2.714	504	10	1%	NA	509	NA	NA	NA	509	NA	NA
9	NA	507	NA	NA	-2.523	507	8	1%	NA	512	NA	NA	NA	513	NA	NA
10	-2.344	510	1	0%	-2.344	510	20	1%	NA	515	NA	NA	NA	516	NA	NA
11	-2.173	512	1	0%	-2.173	512	19	1%	NA	517	NA	NA	NA	519	NA	NA
12	NA	515	NA	NA	-2.011	515	24	2%	-1.680	520	5	0%	NA	522	NA	NA
13	-1.854	517	5	1%	-1.854	517	24	2%	-1.522	522	4	0%	NA	525	NA	NA
14	-1.704	519	3	0%	-1.704	519	43	3%	-1.371	524	4	0%	NA	528	NA	NA
15	-1.558	522	2	0%	-1.558	522	61	5%	-1.224	527	6	0%	-0.988	530	1	0%
16	-1.416	524	1	0%	-1.416	524	63	5%	-1.081	529	5	0%	-0.823	533	1	0%
17	-1.277	526	3	0%	-1.277	526	98	7%	-0.942	531	10	1%	-0.666	535	1	0%
18	NA	528	NA	NA	-1.141	528	98	7%	-0.806	533	23	1%	-0.514	537	1	0%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	530	NA	NA	-1.007	530	131	10%	-0.671	535	30	2%	NA	539	NA	NA
20	NA	532	NA	NA	-0.874	532	146	11%	-0.539	537	56	3%	-0.226	542	3	0%
21	NA	534	NA	NA	-0.741	534	125	9%	-0.407	539	92	6%	-0.089	544	6	0%
22	NA	536	NA	NA	-0.608	536	121	9%	-0.276	541	103	6%	0.046	546	12	1%
23	NA	538	NA	NA	-0.474	538	119	9%	-0.145	543	129	8%	0.180	548	36	3%
24	NA	540	NA	NA	-0.338	540	68	5%	-0.013	545	150	9%	0.312	550	48	4%
25	NA	542	NA	NA	-0.200	542	53	4%	0.119	547	169	10%	0.445	552	75	6%
26	NA	544	NA	NA	-0.057	544	36	3%	0.254	549	154	9%	0.579	554	107	8%
27	NA	546	NA	NA	0.092	546	25	2%	0.392	551	158	9%	0.716	556	119	9%
28	NA	549	NA	NA	0.246	549	19	1%	0.535	553	134	8%	0.858	558	135	10%
29	NA	551	NA	NA	0.410	551	9	1%	0.684	555	150	9%	1.007	560	148	11%
30	NA	554	NA	NA	0.585	554	2	0%	0.843	558	105	6%	1.164	562	151	11%
31	NA	557	NA	NA	NA	557	NA	NA	1.016	560	80	5%	1.333	565	135	10%
32	NA	560	NA	NA	NA	560	NA	NA	1.206	563	53	3%	1.518	568	103	8%
33	NA	563	NA	NA	NA	563	NA	NA	1.424	566	35	2%	1.723	571	85	6%
34	NA	567	NA	NA	NA	567	NA	NA	1.681	570	13	1%	1.956	574	59	4%
35	NA	572	NA	NA	NA	572	NA	NA	2.002	575	6	0%	2.231	578	54	4%
36	NA	579	NA	NA	NA	579	NA	NA	NA	582	NA	NA	2.572	584	25	2%
37	NA	590	NA	NA	NA	590	NA	NA	NA	593	NA	NA	3.032	590	27	2%
38	NA	599	NA	NA	NA	599	NA	NA	NA	599	NA	NA	3.782	599	11	1%
39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.000	599	3	0%

Table 7.B.4 Raw-Score-to Scale-Score Distribution for ELA, Grade Six

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	600	594	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	601	208	24%	NA	601	5	1%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	603	3	0%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
1	-4.478	603	9	1%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
2	-3.722	603	20	2%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
3	-3.259	604	8	1%	-3.259	604	2	0%	NA	603	NA	NA	NA	605	NA	NA
4	-2.921	608	10	1%	-2.921	608	8	2%	NA	606	NA	NA	NA	609	NA	NA
5	-2.652	612	7	1%	-2.652	612	18	4%	NA	610	NA	NA	NA	612	NA	NA
6	-2.429	615	8	1%	-2.429	615	14	3%	NA	613	NA	NA	NA	615	NA	NA
7	-2.237	617	3	0%	-2.237	617	10	2%	NA	615	NA	NA	NA	618	NA	NA
8	-2.068	619	2	0%	-2.068	619	22	5%	-2.194	618	4	0%	NA	620	NA	NA
9	-1.916	621	2	0%	-1.916	621	20	5%	-2.025	620	7	0%	NA	623	NA	NA
10	-1.777	623	2	0%	-1.777	623	14	3%	-1.870	622	15	1%	NA	625	NA	NA
11	-1.648	624	2	0%	-1.648	624	34	8%	-1.725	623	11	1%	NA	626	NA	NA
12	-1.527	626	1	0%	-1.527	626	31	8%	-1.588	625	10	0%	NA	628	NA	NA
13	-1.412	627	1	0%	-1.412	627	51	12%	-1.457	627	15	1%	-1.202	630	4	0%
14	-1.301	629	1	0%	-1.301	629	40	10%	-1.331	628	24	1%	-1.064	632	4	0%
15	-1.193	630	1	0%	-1.193	630	36	9%	-1.208	630	36	2%	-0.928	633	1	0%
16	NA	631	NA	NA	-1.087	631	25	6%	-1.088	631	40	2%	-0.792	635	4	0%
17	NA	633	NA	NA	-0.983	633	25	6%	-0.970	633	97	5%	-0.657	637	3	0%
18	NA	634	NA	NA	-0.879	634	21	5%	-0.853	634	119	6%	-0.522	638	7	0%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	635	NA	NA	-0.776	635	14	3%	-0.736	636	184	9%	-0.386	640	17	1%
20	NA	637	NA	NA	-0.671	637	8	2%	-0.619	637	159	8%	-0.249	642	35	2%
21	NA	638	NA	NA	-0.564	638	10	2%	-0.501	639	200	10%	-0.110	644	40	2%
22	NA	639	NA	NA	-0.455	639	4	1%	-0.381	640	203	10%	0.031	645	84	4%
23	NA	641	NA	NA	-0.342	641	1	0%	-0.258	642	211	10%	0.174	647	117	6%
24	NA	642	NA	NA	NA	642	NA	NA	-0.132	643	177	9%	0.318	649	160	8%
25	NA	644	NA	NA	NA	644	NA	NA	-0.001	645	150	7%	0.466	651	208	10%
26	NA	645	NA	NA	NA	645	NA	NA	0.135	647	120	6%	0.616	653	202	10%
27	NA	647	NA	NA	NA	647	NA	NA	0.278	648	88	4%	0.770	655	215	10%
28	NA	649	NA	NA	NA	649	NA	NA	0.428	650	65	3%	0.930	657	194	9%
29	NA	651	NA	NA	NA	651	NA	NA	0.589	652	50	2%	1.096	659	172	8%
30	NA	653	NA	NA	NA	653	NA	NA	0.761	655	24	1%	1.272	661	167	8%
31	NA	656	NA	NA	NA	656	NA	NA	0.949	657	15	1%	1.460	663	156	8%
32	NA	658	NA	NA	NA	658	NA	NA	1.158	659	6	0%	1.667	666	98	5%
33	NA	662	NA	NA	NA	662	NA	NA	1.394	662	1	0%	1.899	669	79	4%
34	NA	666	NA	NA	NA	666	NA	NA	NA	666	NA	NA	2.170	672	45	2%
35	NA	672	NA	NA	NA	672	NA	NA	NA	670	NA	NA	2.505	676	28	1%
36	NA	681	NA	NA	NA	681	NA	NA	NA	676	NA	NA	2.957	682	16	1%
37	NA	699	NA	NA	NA	699	NA	NA	NA	685	NA	NA	3.697	691	4	0%
38	NA	NA	NA	NA	NA	NA	NA	NA	NA	699	NA	NA	NA	699	NA	NA

Table 7.B.5 Raw-Score-to-Scale-Score Distribution for ELA, Grade Seven

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	700	571	61%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	701	255	27%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	703	2	0%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
1	-5.187	703	22	2%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
2	-4.417	703	43	5%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
3	-3.934	703	16	2%	-3.934	703	5	0%	NA	703	NA	NA	NA	703	NA	NA
4	-3.568	703	7	1%	-3.568	703	19	1%	NA	703	NA	NA	NA	703	NA	NA
5	-3.265	703	1	0%	-3.265	703	14	1%	NA	703	NA	NA	NA	707	NA	NA
6	-3.003	703	2	0%	-3.003	703	15	1%	NA	707	NA	NA	NA	712	NA	NA
7	-2.768	703	2	0%	-2.768	703	19	1%	NA	711	NA	NA	NA	717	NA	NA
8	-2.552	707	3	0%	-2.552	707	17	1%	NA	714	NA	NA	NA	721	NA	NA
9	-2.352	710	1	0%	-2.352	710	24	2%	-1.825	718	7	0%	NA	724	NA	NA
10	-2.164	713	2	0%	-2.164	713	23	2%	-1.619	721	6	0%	NA	728	NA	NA
11	-1.985	715	2	0%	-1.985	715	32	2%	-1.425	724	7	0%	NA	731	NA	NA
12	NA	718	NA	NA	-1.814	718	42	3%	-1.240	726	6	0%	NA	734	NA	NA
13	NA	720	NA	NA	-1.651	720	68	5%	-1.063	729	11	1%	-0.542	737	4	0%
14	NA	723	NA	NA	-1.493	723	54	4%	-0.894	732	18	1%	-0.370	739	7	1%
15	NA	725	NA	NA	-1.341	725	88	6%	-0.730	734	43	2%	-0.208	742	3	0%
16	NA	727	NA	NA	-1.193	727	125	8%	-0.571	736	65	3%	-0.054	744	8	1%
17	NA	729	NA	NA	-1.049	729	127	8%	-0.416	739	107	6%	0.094	746	9	1%
18	NA	731	NA	NA	-0.907	731	147	10%	-0.265	741	151	8%	0.237	749	17	2%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	733	NA	NA	-0.768	733	145	10%	-0.115	743	152	8%	0.376	751	33	3%
20	NA	736	NA	NA	-0.631	736	138	9%	0.033	745	198	10%	0.513	753	51	5%
21	NA	738	NA	NA	-0.493	738	126	8%	0.182	748	210	11%	0.649	755	63	6%
22	NA	740	NA	NA	-0.355	740	95	6%	0.332	750	187	10%	0.786	757	84	8%
23	NA	742	NA	NA	-0.215	742	68	5%	0.485	752	186	10%	0.926	759	72	7%
24	NA	744	NA	NA	-0.071	744	58	4%	0.643	755	152	8%	1.069	761	99	10%
25	NA	746	NA	NA	0.077	746	26	2%	0.808	757	125	7%	1.219	763	102	10%
26	NA	748	NA	NA	0.232	748	24	2%	0.984	760	92	5%	1.377	766	87	8%
27	NA	751	NA	NA	0.396	751	6	0%	1.173	763	89	5%	1.546	768	103	10%
28	NA	754	NA	NA	0.572	754	2	0%	1.382	766	55	3%	1.731	771	98	9%
29	NA	756	NA	NA	NA	756	NA	NA	1.617	769	24	1%	1.938	774	62	6%
30	NA	760	NA	NA	NA	760	NA	NA	1.893	773	15	1%	2.174	778	49	5%
31	NA	763	NA	NA	NA	763	NA	NA	NA	778	NA	NA	2.453	782	45	4%
32	NA	767	NA	NA	NA	767	NA	NA	NA	785	NA	NA	2.802	787	20	2%
33	NA	773	NA	NA	NA	773	NA	NA	NA	796	NA	NA	3.274	794	17	2%
34	NA	780	NA	NA	NA	780	NA	NA	NA	799	NA	NA	4.041	799	4	0%
35	NA	791	NA	NA	NA	791	NA	NA	NA	NA	NA	NA	6.000	799	4	0%
36	NA	799	NA	NA	NA	799	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7.B.6 Raw-Score-to-Scale-Score Distribution for ELA, Grade Eight

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	800	646	67%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	801	216	22%	NA	801	1	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	803	1	0%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
1	-4.664	803	9	1%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
2	-3.900	803	14	1%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
3	-3.424	805	46	5%	NA	805	NA	NA	NA	806	NA	NA	NA	805	NA	NA
4	-3.064	809	10	1%	-3.064	809	7	0%	NA	810	NA	NA	NA	809	NA	NA
5	-2.768	813	7	1%	-2.768	813	7	0%	NA	814	NA	NA	NA	813	NA	NA
6	-2.514	816	2	0%	-2.514	816	6	0%	NA	817	NA	NA	NA	817	NA	NA
7	NA	819	NA	NA	-2.287	819	6	0%	NA	820	NA	NA	NA	820	NA	NA
8	NA	821	NA	NA	-2.082	821	15	1%	NA	823	NA	NA	NA	823	NA	NA
9	-1.893	824	2	0%	-1.893	824	16	1%	NA	826	NA	NA	NA	825	NA	NA
10	-1.718	826	2	0%	-1.718	826	19	1%	NA	828	NA	NA	NA	828	NA	NA
11	-1.554	828	1	0%	-1.554	828	29	2%	-1.400	830	5	0%	NA	830	NA	NA
12	-1.399	830	5	1%	-1.399	830	38	2%	-1.239	832	2	0%	NA	832	NA	NA
13	NA	832	NA	NA	-1.252	832	55	3%	-1.088	834	6	0%	NA	834	NA	NA
14	NA	834	NA	NA	-1.112	834	104	6%	-0.944	836	4	0%	NA	836	NA	NA
15	NA	835	NA	NA	-0.978	835	96	6%	-0.807	837	11	1%	NA	838	NA	NA
16	NA	837	NA	NA	-0.849	837	123	7%	-0.675	839	23	1%	NA	840	NA	NA
17	-0.724	838	1	0%	-0.724	838	139	8%	-0.547	841	31	2%	NA	841	NA	NA
18	NA	840	NA	NA	-0.602	840	189	11%	-0.422	842	61	4%	-0.350	843	1	0%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	841	NA	NA	-0.483	841	179	10%	-0.300	844	86	5%	-0.220	845	1	0%
20	NA	843	NA	NA	-0.364	843	164	10%	-0.179	845	121	7%	-0.091	846	4	0%
21	NA	844	NA	NA	-0.246	844	142	8%	-0.058	847	142	8%	0.036	848	7	1%
22	NA	846	NA	NA	-0.128	846	116	7%	0.063	848	163	10%	0.163	850	16	2%
23	NA	847	NA	NA	-0.008	847	104	6%	0.186	850	183	11%	0.290	851	25	3%
24	NA	849	NA	NA	0.116	849	57	3%	0.311	851	203	12%	0.420	853	39	5%
25	NA	851	NA	NA	0.243	851	52	3%	0.439	853	163	10%	0.552	854	68	8%
26	NA	852	NA	NA	0.376	852	26	2%	0.572	855	147	9%	0.688	856	80	9%
27	NA	854	NA	NA	0.516	854	15	1%	0.710	856	132	8%	0.830	858	83	10%
28	NA	856	NA	NA	0.667	856	9	1%	0.857	858	80	5%	0.978	860	93	11%
29	NA	858	NA	NA	0.830	858	2	0%	1.013	860	58	3%	1.136	862	88	10%
30	NA	860	NA	NA	NA	860	NA	NA	1.181	862	48	3%	1.305	864	88	10%
31	NA	863	NA	NA	NA	863	NA	NA	1.364	865	21	1%	1.490	866	71	8%
32	NA	866	NA	NA	NA	866	NA	NA	1.569	867	14	1%	1.696	869	48	6%
33	NA	869	NA	NA	NA	869	NA	NA	1.801	870	6	0%	1.930	872	50	6%
34	NA	873	NA	NA	NA	873	NA	NA	2.075	873	1	0%	2.206	875	44	5%
35	NA	879	NA	NA	NA	879	NA	NA	NA	878	NA	NA	2.546	879	24	3%
36	NA	888	NA	NA	NA	888	NA	NA	NA	883	NA	NA	3.004	885	16	2%
37	NA	899	NA	NA	NA	899	NA	NA	NA	893	NA	NA	3.750	894	2	0%
38	NA	NA	NA	NA	NA	NA	NA	NA	NA	899	NA	NA	6.000	899	1	0%

Table 7.B.7 Raw-Score-to-Scale-Score Distribution for ELA, Grade Eleven

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	900	472	68%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	901	145	21%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	903	1	0%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
1	-4.786	903	19	3%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
2	-4.027	903	41	6%	NA	903	NA	NA	NA	904	NA	NA	NA	904	NA	NA
3	-3.555	903	6	1%	-3.555	903	7	1%	NA	910	NA	NA	NA	910	NA	NA
4	-3.201	907	4	1%	-3.201	907	13	1%	NA	915	NA	NA	NA	915	NA	NA
5	NA	911	NA	NA	-2.911	911	9	1%	NA	918	NA	NA	NA	919	NA	NA
6	NA	914	NA	NA	-2.662	914	5	1%	NA	921	NA	NA	NA	922	NA	NA
7	-2.441	917	3	0%	-2.441	917	8	1%	NA	924	NA	NA	NA	925	NA	NA
8	-2.242	919	1	0%	-2.242	919	11	1%	NA	927	NA	NA	NA	928	NA	NA
9	NA	922	NA	NA	-2.058	922	17	2%	-1.492	929	4	0%	NA	930	NA	NA
10	-1.888	924	2	0%	-1.888	924	22	2%	-1.331	931	1	0%	NA	932	NA	NA
11	-1.728	926	2	0%	-1.728	926	39	4%	-1.180	933	5	0%	NA	934	NA	NA
12	NA	928	NA	NA	-1.577	928	37	4%	-1.039	935	12	1%	NA	936	NA	NA
13	NA	930	NA	NA	-1.433	930	43	4%	-0.904	936	16	1%	-0.731	938	1	0%
14	-1.295	931	1	0%	-1.295	931	63	6%	-0.775	938	25	1%	NA	940	NA	NA
15	NA	933	NA	NA	-1.162	933	70	7%	-0.649	939	44	2%	NA	942	NA	NA
16	NA	935	NA	NA	-1.032	935	92	9%	-0.526	941	65	4%	NA	944	NA	NA
17	NA	936	NA	NA	-0.906	936	80	8%	-0.404	942	88	5%	-0.153	946	2	0%
18	NA	938	NA	NA	-0.782	938	93	10%	-0.281	944	126	7%	NA	947	NA	NA

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	939	NA	NA	-0.659	939	83	8%	-0.158	946	141	8%	0.118	949	3	0%
20	NA	941	NA	NA	-0.537	941	57	6%	-0.033	947	178	10%	0.252	951	9	1%
21	NA	942	NA	NA	-0.415	942	73	7%	0.095	949	179	10%	0.385	952	11	1%
22	NA	944	NA	NA	-0.292	944	48	5%	0.227	950	177	10%	0.519	954	23	2%
23	NA	945	NA	NA	-0.168	945	23	2%	0.365	952	168	9%	0.653	956	31	3%
24	NA	947	NA	NA	-0.041	947	34	3%	0.510	954	153	8%	0.790	957	48	5%
25	NA	949	NA	NA	0.089	949	20	2%	0.662	956	144	8%	0.931	959	67	7%
26	NA	950	NA	NA	0.224	950	11	1%	0.825	958	113	6%	1.077	961	83	9%
27	NA	952	NA	NA	0.364	952	10	1%	1.001	960	100	5%	1.229	963	81	9%
28	NA	954	NA	NA	0.512	954	8	1%	1.192	962	59	3%	1.391	965	91	10%
29	NA	956	NA	NA	0.669	956	3	0%	1.405	965	38	2%	1.565	967	89	10%
30	NA	958	NA	NA	NA	958	NA	NA	1.645	968	14	1%	1.754	969	118	13%
31	NA	960	NA	NA	NA	960	NA	NA	1.926	972	4	0%	1.965	972	82	9%
32	NA	963	NA	NA	NA	963	NA	NA	2.271	976	1	0%	2.205	975	71	8%
33	NA	966	NA	NA	NA	966	NA	NA	NA	982	NA	NA	2.487	979	52	6%
34	NA	969	NA	NA	NA	969	NA	NA	NA	991	NA	NA	2.835	983	44	5%
35	NA	973	NA	NA	NA	973	NA	NA	NA	999	NA	NA	3.302	989	12	1%
36	NA	979	NA	NA	NA	979	NA	NA	NA	NA	NA	NA	4.060	998	6	1%
37	NA	989	NA	NA	NA	989	NA	NA	NA	NA	NA	NA	6.000	999	2	0%
38	NA	999	NA	NA	NA	999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7.B.8 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Three

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	300	761	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	301	222	21%	NA	301	6	1%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	303	10	1%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
1	-3.579	303	49	5%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
2	-2.848	303	13	1%	-2.848	303	13	2%	NA	303	NA	NA	NA	303	NA	NA
3	-2.406	303	10	1%	-2.406	303	15	2%	NA	303	NA	NA	NA	303	NA	NA
4	-2.084	303	2	0%	-2.084	303	22	3%	NA	303	NA	NA	NA	309	NA	NA
5	-1.828	307	2	0%	-1.828	307	21	3%	NA	308	NA	NA	NA	315	NA	NA
6	-1.613	311	2	0%	-1.613	311	18	3%	-1.527	313	9	1%	NA	319	NA	NA
7	-1.428	315	1	0%	-1.428	315	21	3%	-1.332	316	7	0%	NA	323	NA	NA
8	-1.265	318	5	0%	-1.265	318	17	3%	-1.159	320	11	1%	NA	327	NA	NA
9	-1.117	320	2	0%	-1.117	320	41	6%	-1.002	323	10	1%	-0.614	330	3	0%
10	-0.981	323	1	0%	-0.981	323	50	8%	-0.858	325	25	2%	-0.454	333	7	0%
11	NA	325	NA	NA	-0.855	325	55	8%	-0.724	328	39	3%	-0.304	336	17	1%
12	NA	327	NA	NA	-0.736	327	66	10%	-0.598	330	61	4%	-0.160	338	28	2%
13	NA	330	NA	NA	-0.623	330	58	9%	-0.478	332	104	7%	-0.022	341	66	4%
14	NA	332	NA	NA	-0.514	332	78	12%	-0.363	334	141	9%	0.112	343	118	7%
15	NA	334	NA	NA	-0.408	334	51	8%	-0.252	337	189	12%	0.244	346	159	9%
16	NA	336	NA	NA	-0.304	336	47	7%	-0.143	339	210	14%	0.374	348	200	11%
17	NA	338	NA	NA	-0.200	338	35	5%	-0.035	341	199	13%	0.503	351	265	15%
18	NA	339	NA	NA	-0.097	339	24	4%	0.072	343	194	13%	0.633	353	222	12%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	341	NA	NA	0.008	341	13	2%	0.180	345	169	11%	0.765	356	171	9%
20	NA	343	NA	NA	0.114	343	10	2%	0.289	347	87	6%	0.900	358	141	8%
21	NA	345	NA	NA	0.224	345	4	1%	0.401	349	43	3%	1.039	361	102	6%
22	NA	348	NA	NA	0.337	348	1	0%	0.517	351	27	2%	1.183	363	85	5%
23	NA	350	NA	NA	NA	350	NA	NA	0.638	353	17	1%	1.335	366	64	4%
24	NA	352	NA	NA	NA	352	NA	NA	0.766	356	7	0%	1.496	369	42	2%
25	NA	355	NA	NA	NA	355	NA	NA	0.903	358	2	0%	1.669	373	38	2%
26	NA	358	NA	NA	NA	358	NA	NA	NA	361	NA	NA	1.856	376	14	1%
27	NA	361	NA	NA	NA	361	NA	NA	NA	364	NA	NA	2.062	380	22	1%
28	NA	364	NA	NA	NA	364	NA	NA	NA	368	NA	NA	2.291	384	10	1%
29	NA	368	NA	NA	NA	368	NA	NA	NA	372	NA	NA	2.552	389	13	1%
30	NA	373	NA	NA	NA	373	NA	NA	NA	376	NA	NA	2.856	395	4	0%
31	NA	379	NA	NA	NA	379	NA	NA	NA	383	NA	NA	3.227	399	8	0%
32	NA	387	NA	NA	NA	387	NA	NA	NA	391	NA	NA	3.718	399	3	0%
33	NA	399	NA	NA	NA	399	NA	NA	NA	399	NA	NA	4.499	399	1	0%
34	NA	399	NA	NA	NA	399	NA	NA	NA	399	NA	NA	6.000	399	1	0%

Table 7.B.9 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Four

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	400	782	79%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	401	144	15%	NA	401	12	1%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	403	4	0%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
1	-4.217	403	18	2%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
2	-3.461	403	7	1%	-3.461	403	4	0%	NA	403	NA	NA	NA	403	NA	NA
3	-2.996	403	4	0%	-2.996	403	12	1%	NA	403	NA	NA	NA	403	NA	NA
4	-2.650	403	9	1%	-2.650	403	14	1%	NA	403	NA	NA	NA	403	NA	NA
5	-2.371	403	6	1%	-2.371	403	24	2%	NA	403	NA	NA	NA	404	NA	NA
6	-2.135	403	2	0%	-2.135	403	24	2%	NA	406	NA	NA	NA	409	NA	NA
7	-1.928	405	5	1%	-1.928	405	23	2%	NA	410	NA	NA	NA	413	NA	NA
8	-1.744	409	2	0%	-1.744	409	29	2%	NA	413	NA	NA	NA	417	NA	NA
9	-1.576	412	1	0%	-1.576	412	33	2%	-1.309	417	8	0%	NA	421	NA	NA
10	-1.422	415	3	0%	-1.422	415	37	3%	-1.143	420	5	0%	NA	425	NA	NA
11	-1.278	417	1	0%	-1.278	417	48	3%	-0.988	423	12	1%	NA	428	NA	NA
12	NA	420	NA	NA	-1.143	420	48	3%	-0.841	426	7	0%	NA	431	NA	NA
13	NA	422	NA	NA	-1.016	422	73	5%	-0.702	428	21	1%	-0.408	434	2	0%
14	NA	425	NA	NA	-0.894	425	81	6%	-0.568	431	28	1%	NA	436	NA	NA
15	-0.776	427	2	0%	-0.776	427	118	8%	-0.438	433	61	3%	-0.116	439	1	0%
16	NA	429	NA	NA	-0.663	429	142	10%	-0.312	435	127	6%	0.024	442	6	1%
17	NA	431	NA	NA	-0.552	431	148	10%	-0.188	438	192	9%	0.161	444	11	2%
18	NA	433	NA	NA	-0.443	433	151	10%	-0.065	440	281	13%	0.296	447	26	4%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	435	NA	NA	-0.335	435	140	10%	0.058	442	299	13%	0.432	449	39	6%
20	NA	437	NA	NA	-0.228	437	95	7%	0.180	445	275	12%	0.567	452	74	12%
21	NA	439	NA	NA	-0.121	439	88	6%	0.304	447	250	11%	0.703	454	84	13%
22	NA	441	NA	NA	-0.013	441	48	3%	0.431	449	199	9%	0.841	457	93	15%
23	NA	443	NA	NA	0.097	443	27	2%	0.560	452	142	6%	0.983	460	69	11%
24	NA	445	NA	NA	0.211	445	16	1%	0.695	454	110	5%	1.129	462	53	8%
25	NA	447	NA	NA	0.328	447	5	0%	0.835	457	86	4%	1.280	465	46	7%
26	NA	450	NA	NA	0.450	450	1	0%	0.983	460	54	2%	1.439	468	37	6%
27	NA	452	NA	NA	NA	452	NA	NA	1.141	463	46	2%	1.607	471	28	4%
28	NA	455	NA	NA	NA	455	NA	NA	1.311	466	18	1%	1.787	475	17	3%
29	NA	458	NA	NA	NA	458	NA	NA	1.497	469	8	0%	1.982	478	21	3%
30	NA	461	NA	NA	NA	461	NA	NA	1.704	473	6	0%	2.199	483	14	2%
31	NA	464	NA	NA	NA	464	NA	NA	1.940	478	2	0%	2.444	487	6	1%
32	NA	468	NA	NA	NA	468	NA	NA	2.217	483	1	0%	2.731	493	3	0%
33	NA	473	NA	NA	NA	473	NA	NA	2.559	489	1	0%	3.084	499	9	1%
34	NA	479	NA	NA	NA	479	NA	NA	NA	498	NA	NA	NA	499	NA	NA
35	NA	487	NA	NA	NA	487	NA	NA	NA	499	NA	NA	NA	499	NA	NA
36	NA	499	NA	NA	NA	499	NA	NA	NA	499	NA	NA	NA	499	NA	NA
37	NA	499	NA	NA	NA	499	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7.B.10 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Five

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	500	799	78%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	501	142	14%	NA	501	5	1%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	503	11	1%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
1	-3.781	503	39	4%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
2	-3.043	503	9	1%	-3.043	503	7	1%	NA	503	NA	NA	NA	503	NA	NA
3	-2.593	503	12	1%	-2.593	503	12	1%	NA	503	NA	NA	NA	503	NA	NA
4	-2.263	503	7	1%	-2.263	503	20	2%	NA	503	NA	NA	NA	508	NA	NA
5	-1.997	504	2	0%	-1.997	504	26	3%	NA	504	NA	NA	NA	513	NA	NA
6	-1.774	508	2	0%	-1.774	508	22	2%	NA	508	NA	NA	NA	517	NA	NA
7	-1.580	512	2	0%	-1.580	512	24	3%	-1.552	512	7	0%	NA	521	NA	NA
8	-1.408	515	1	0%	-1.408	515	26	3%	-1.366	516	5	0%	NA	525	NA	NA
9	-1.252	518	1	0%	-1.252	518	45	5%	-1.196	519	7	0%	NA	528	NA	NA
10	NA	521	NA	NA	-1.109	521	56	6%	-1.041	522	12	1%	NA	531	NA	NA
11	-0.976	523	1	0%	-0.976	523	76	8%	-0.896	525	17	1%	-0.430	533	3	0%
12	NA	525	NA	NA	-0.852	525	77	8%	-0.759	527	22	1%	-0.297	536	1	0%
13	NA	528	NA	NA	-0.734	528	94	10%	-0.630	529	57	3%	-0.169	538	6	0%
14	-0.622	530	1	0%	-0.622	530	78	8%	-0.506	532	84	4%	-0.045	540	13	1%
15	NA	532	NA	NA	-0.514	532	92	10%	-0.386	534	134	6%	0.075	543	29	2%
16	NA	534	NA	NA	-0.410	534	72	8%	-0.270	536	181	9%	0.194	545	54	4%
17	NA	536	NA	NA	-0.307	536	59	6%	-0.156	538	251	12%	0.311	547	86	7%
18	NA	537	NA	NA	-0.207	537	46	5%	-0.043	540	296	14%	0.427	549	117	9%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	539	NA	NA	-0.107	539	47	5%	0.069	543	271	13%	0.544	552	145	11%
20	NA	541	NA	NA	-0.008	541	28	3%	0.181	545	207	10%	0.662	554	140	11%
21	NA	543	NA	NA	0.093	543	11	1%	0.295	547	187	9%	0.782	556	123	10%
22	NA	545	NA	NA	0.194	545	11	1%	0.410	549	135	7%	0.904	558	129	10%
23	NA	547	NA	NA	0.298	547	3	0%	0.528	551	83	4%	1.031	561	97	8%
24	NA	549	NA	NA	NA	549	NA	NA	0.649	553	57	3%	1.161	563	74	6%
25	NA	551	NA	NA	NA	551	NA	NA	0.776	556	25	1%	1.298	566	72	6%
26	NA	553	NA	NA	NA	553	NA	NA	0.909	558	16	1%	1.443	568	58	5%
27	NA	556	NA	NA	NA	556	NA	NA	1.049	561	6	0%	1.597	571	41	3%
28	NA	558	NA	NA	NA	558	NA	NA	1.200	564	3	0%	1.763	574	35	3%
29	NA	561	NA	NA	NA	561	NA	NA	1.363	567	1	0%	1.944	578	27	2%
30	NA	564	NA	NA	NA	564	NA	NA	NA	570	NA	NA	2.146	582	12	1%
31	NA	567	NA	NA	NA	567	NA	NA	1.742	574	1	0%	2.376	586	5	0%
32	NA	571	NA	NA	NA	571	NA	NA	NA	578	NA	NA	2.647	591	11	1%
33	NA	576	NA	NA	NA	576	NA	NA	NA	583	NA	NA	2.983	597	2	0%
34	NA	582	NA	NA	NA	582	NA	NA	NA	590	NA	NA	3.437	599	4	0%
35	NA	590	NA	NA	NA	590	NA	NA	NA	598	NA	NA	4.178	599	2	0%
36	NA	599	NA	NA	NA	599	NA	NA	NA	599	NA	NA	6.000	599	2	0%
37	NA	599	NA	NA	NA	599	NA	NA	NA	599	NA	NA	NA	NA	NA	NA

Table 7.B.11 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Six

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	600	841	79%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	601	133	12%	NA	601	6	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	603	12	1%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
1	-3.221	603	49	5%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
2	-2.510	603	12	1%	-2.510	603	7	0%	NA	603	NA	NA	NA	603	NA	NA
3	-2.088	603	7	1%	-2.088	603	9	1%	NA	603	NA	NA	NA	607	NA	NA
4	-1.785	608	3	0%	-1.785	608	16	1%	NA	609	NA	NA	NA	613	NA	NA
5	-1.547	612	3	0%	-1.547	612	15	1%	NA	614	NA	NA	NA	617	NA	NA
6	-1.349	616	2	0%	-1.349	616	27	2%	NA	618	NA	NA	NA	621	NA	NA
7	-1.180	619	3	0%	-1.180	619	25	2%	-1.062	621	3	0%	NA	625	NA	NA
8	-1.030	622	1	0%	-1.030	622	45	3%	-0.897	624	8	0%	NA	628	NA	NA
9	NA	625	NA	NA	-0.895	625	69	4%	-0.747	627	5	0%	NA	630	NA	NA
10	-0.771	627	2	0%	-0.771	627	91	6%	-0.608	630	15	1%	-0.447	633	2	0%
11	-0.655	629	1	0%	-0.655	629	129	8%	-0.478	632	32	2%	-0.322	635	2	0%
12	NA	631	NA	NA	-0.546	631	150	9%	-0.354	635	76	5%	-0.203	637	2	0%
13	NA	633	NA	NA	-0.441	633	199	12%	-0.235	637	122	7%	-0.089	640	11	1%
14	NA	635	NA	NA	-0.341	635	191	12%	-0.119	639	172	10%	0.022	642	18	2%
15	NA	637	NA	NA	-0.242	637	175	11%	-0.005	641	212	13%	0.130	644	29	3%
16	NA	639	NA	NA	-0.145	639	160	10%	0.108	643	228	14%	0.237	646	45	5%
17	NA	640	NA	NA	-0.049	640	138	8%	0.220	645	205	12%	0.344	648	58	6%
18	NA	642	NA	NA	0.048	642	84	5%	0.334	648	179	11%	0.451	650	80	8%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	644	NA	NA	0.146	644	44	3%	0.449	650	142	8%	0.559	652	88	9%
20	NA	646	NA	NA	0.246	646	36	2%	0.567	652	107	6%	0.669	654	102	11%
21	NA	648	NA	NA	0.349	648	24	1%	0.689	654	91	5%	0.782	656	85	9%
22	NA	650	NA	NA	0.456	650	6	0%	0.817	657	37	2%	0.899	658	74	8%
23	NA	652	NA	NA	0.570	652	3	0%	0.952	659	28	2%	1.023	660	67	7%
24	NA	654	NA	NA	0.691	654	1	0%	1.096	662	6	0%	1.153	663	76	8%
25	NA	657	NA	NA	0.823	657	1	0%	1.252	665	10	1%	1.293	666	60	6%
26	NA	659	NA	NA	NA	659	NA	NA	1.423	668	4	0%	1.445	668	46	5%
27	NA	663	NA	NA	NA	663	NA	NA	1.615	672	3	0%	1.613	672	29	3%
28	NA	666	NA	NA	NA	666	NA	NA	NA	676	NA	NA	1.801	675	31	3%
29	NA	670	NA	NA	NA	670	NA	NA	2.096	681	1	0%	2.020	679	23	2%
30	NA	676	NA	NA	NA	676	NA	NA	NA	687	NA	NA	2.280	684	16	2%
31	NA	684	NA	NA	NA	684	NA	NA	NA	695	NA	NA	2.608	690	6	1%
32	NA	697	NA	NA	NA	697	NA	NA	NA	699	NA	NA	3.057	699	5	1%
33	NA	699	NA	NA	NA	699	NA	NA	NA	699	NA	NA	3.798	699	4	0%
34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.000	699	1	0%

Table 7.B.12 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Seven

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	700	632	65%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	701	216	22%	NA	701	4	1%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	703	12	1%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
1	-3.695	703	27	3%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
2	-2.972	703	61	6%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
3	-2.539	703	5	1%	-2.539	703	8	1%	NA	703	NA	NA	NA	703	NA	NA
4	-2.227	703	5	1%	-2.227	703	8	1%	NA	703	NA	NA	NA	705	NA	NA
5	-1.982	704	2	0%	-1.982	704	13	2%	NA	707	NA	NA	NA	710	NA	NA
6	NA	708	NA	NA	-1.780	708	20	3%	NA	711	NA	NA	NA	714	NA	NA
7	-1.607	711	1	0%	-1.607	711	10	1%	-1.458	714	15	1%	NA	717	NA	NA
8	-1.456	714	1	0%	-1.456	714	19	3%	-1.300	717	7	0%	NA	720	NA	NA
9	NA	717	NA	NA	-1.320	717	19	3%	-1.158	720	10	1%	NA	723	NA	NA
10	-1.197	719	1	0%	-1.197	719	27	4%	-1.028	722	27	2%	NA	726	NA	NA
11	-1.084	721	1	0%	-1.084	721	32	5%	-0.908	724	27	2%	-0.704	728	4	0%
12	-0.978	723	1	0%	-0.978	723	48	7%	-0.794	726	47	3%	-0.583	730	7	0%
13	-0.878	725	2	0%	-0.878	725	49	7%	-0.686	728	64	4%	-0.466	733	10	0%
14	-0.783	727	1	0%	-0.783	727	59	9%	-0.582	730	104	6%	-0.352	735	19	1%
15	NA	728	NA	NA	-0.691	728	82	12%	-0.481	732	120	7%	-0.239	737	47	2%
16	NA	730	NA	NA	-0.602	730	77	11%	-0.382	734	163	10%	-0.126	739	77	4%
17	NA	732	NA	NA	-0.515	732	70	10%	-0.284	736	179	11%	-0.014	741	124	6%
18	NA	733	NA	NA	-0.429	733	54	8%	-0.186	738	198	12%	0.099	743	158	8%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	735	NA	NA	-0.344	735	38	6%	-0.089	740	167	10%	0.214	745	189	9%
20	NA	736	NA	NA	-0.258	736	23	3%	0.010	741	136	8%	0.331	748	217	11%
21	NA	738	NA	NA	-0.172	738	8	1%	0.109	743	162	10%	0.451	750	205	10%
22	NA	740	NA	NA	-0.084	740	4	1%	0.211	745	88	5%	0.573	752	167	8%
23	NA	741	NA	NA	0.005	741	2	0%	0.315	747	82	5%	0.699	754	174	9%
24	NA	743	NA	NA	0.097	743	2	0%	0.423	749	36	2%	0.828	757	129	6%
25	NA	745	NA	NA	0.193	745	1	0%	0.534	751	36	2%	0.963	759	121	6%
26	NA	747	NA	NA	NA	747	NA	NA	0.651	753	19	1%	1.103	762	91	4%
27	NA	749	NA	NA	NA	749	NA	NA	0.772	756	6	0%	1.249	765	70	3%
28	NA	751	NA	NA	NA	751	NA	NA	0.901	758	2	0%	1.403	768	53	3%
29	NA	753	NA	NA	NA	753	NA	NA	1.038	761	2	0%	1.567	771	38	2%
30	NA	756	NA	NA	NA	756	NA	NA	NA	764	NA	NA	1.743	774	29	1%
31	NA	758	NA	NA	NA	758	NA	NA	NA	767	NA	NA	1.935	778	36	2%
32	NA	762	NA	NA	NA	762	NA	NA	NA	770	NA	NA	2.147	782	22	1%
33	NA	765	NA	NA	NA	765	NA	NA	1.718	774	1	0%	2.388	786	18	1%
34	NA	769	NA	NA	NA	769	NA	NA	NA	778	NA	NA	2.670	791	12	1%
35	NA	775	NA	NA	NA	775	NA	NA	NA	783	NA	NA	3.017	798	6	0%
36	NA	781	NA	NA	NA	781	NA	NA	NA	789	NA	NA	3.483	799	8	0%
37	NA	790	NA	NA	NA	790	NA	NA	NA	797	NA	NA	4.237	799	1	0%
38	NA	799	NA	NA	NA	799	NA	NA	NA	799	NA	NA	NA	799	NA	NA
39	NA	799	NA	NA	NA	799	NA	NA	NA	799	NA	NA	NA	NA	NA	NA

Table 7.B.13 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Eight

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	800	766	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	801	180	18%	NA	801	9	1%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	803	3	0%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
1	-3.656	803	13	1%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
2	-2.931	803	17	2%	-2.931	803	4	1%	NA	803	NA	NA	NA	803	NA	NA
3	-2.496	803	14	1%	-2.496	803	11	2%	NA	803	NA	NA	NA	803	NA	NA
4	-2.181	803	6	1%	-2.181	803	10	2%	NA	804	NA	NA	NA	806	NA	NA
5	-1.933	805	3	0%	-1.933	805	10	2%	NA	809	NA	NA	NA	811	NA	NA
6	-1.726	809	1	0%	-1.726	809	14	2%	NA	813	NA	NA	NA	816	NA	NA
7	-1.549	812	1	0%	-1.549	812	7	1%	-1.323	816	7	0%	NA	819	NA	NA
8	-1.393	815	1	0%	-1.393	815	17	3%	-1.158	820	14	1%	NA	822	NA	NA
9	NA	818	NA	NA	-1.253	818	23	4%	-1.010	822	21	1%	NA	825	NA	NA
10	-1.126	820	2	0%	-1.126	820	33	5%	-0.875	825	26	1%	NA	828	NA	NA
11	-1.007	822	1	0%	-1.007	822	38	6%	-0.750	827	44	2%	-0.585	830	3	0%
12	-0.897	824	1	0%	-0.897	824	51	8%	-0.632	829	70	3%	-0.463	833	2	0%
13	NA	826	NA	NA	-0.792	826	58	9%	-0.521	832	111	5%	-0.346	835	10	1%
14	NA	828	NA	NA	-0.691	828	51	8%	-0.415	834	147	7%	-0.235	837	12	1%
15	NA	830	NA	NA	-0.594	830	69	11%	-0.312	835	191	9%	-0.128	839	37	2%
16	-0.500	832	1	0%	-0.500	832	68	11%	-0.213	837	236	11%	-0.023	841	43	3%
17	NA	834	NA	NA	-0.407	834	50	8%	-0.115	839	245	12%	0.080	843	81	5%
18	NA	835	NA	NA	-0.315	835	36	6%	-0.019	841	218	10%	0.181	845	113	8%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	837	NA	NA	-0.224	837	32	5%	0.077	843	185	9%	0.281	847	125	8%
20	NA	839	NA	NA	-0.132	839	23	4%	0.173	845	157	8%	0.382	848	119	8%
21	NA	841	NA	NA	-0.039	841	12	2%	0.270	846	133	6%	0.483	850	152	10%
22	NA	842	NA	NA	0.055	842	9	1%	0.369	848	99	5%	0.586	852	135	9%
23	NA	844	NA	NA	0.152	844	2	0%	0.470	850	76	4%	0.690	854	126	8%
24	NA	846	NA	NA	0.252	846	4	1%	0.575	852	43	2%	0.797	856	101	7%
25	NA	848	NA	NA	0.357	848	1	0%	0.683	854	26	1%	0.907	858	89	6%
26	NA	850	NA	NA	0.466	850	1	0%	0.797	856	18	1%	1.021	860	78	5%
27	NA	852	NA	NA	NA	852	NA	NA	0.917	858	11	1%	1.139	863	66	4%
28	NA	855	NA	NA	NA	855	NA	NA	1.046	861	3	0%	1.263	865	37	2%
29	NA	857	NA	NA	NA	857	NA	NA	NA	864	NA	NA	1.393	867	40	3%
30	NA	860	NA	NA	NA	860	NA	NA	1.336	866	1	0%	1.532	870	34	2%
31	NA	863	NA	NA	NA	863	NA	NA	1.504	870	1	0%	1.680	873	22	1%
32	NA	867	NA	NA	NA	867	NA	NA	NA	873	NA	NA	1.841	876	24	2%
33	NA	872	NA	NA	NA	872	NA	NA	NA	877	NA	NA	2.017	879	14	1%
34	NA	877	NA	NA	NA	877	NA	NA	NA	882	NA	NA	2.214	883	13	1%
35	NA	885	NA	NA	NA	885	NA	NA	NA	888	NA	NA	2.438	887	6	0%
36	NA	899	NA	NA	NA	899	NA	NA	NA	896	NA	NA	2.703	892	4	0%
37	NA	899	NA	NA	NA	899	NA	NA	NA	899	NA	NA	3.033	898	3	0%
38	NA	NA	NA	NA	NA	NA	NA	NA	NA	899	NA	NA	3.480	899	3	0%
39	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.214	899	1	0%
40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	899	NA	NA

Table 7.B.14 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Eleven

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	900	499	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	901	130	18%	NA	901	6	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	903	14	2%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
1	-3.773	903	38	5%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
2	-3.041	903	11	2%	-3.041	903	14	1%	NA	903	NA	NA	NA	903	NA	NA
3	-2.600	903	4	1%	-2.600	903	17	1%	NA	903	NA	NA	NA	903	NA	NA
4	-2.280	903	4	1%	-2.280	903	18	1%	NA	904	NA	NA	NA	909	NA	NA
5	-2.026	903	4	1%	-2.026	903	25	2%	NA	908	NA	NA	NA	913	NA	NA
6	-1.816	907	2	0%	-1.816	907	18	1%	NA	912	NA	NA	NA	917	NA	NA
7	-1.635	911	1	0%	-1.635	911	21	2%	-1.370	916	4	0%	NA	920	NA	NA
8	-1.476	914	1	0%	-1.476	914	26	2%	-1.214	919	7	1%	NA	923	NA	NA
9	-1.333	916	1	0%	-1.333	916	32	3%	-1.072	921	6	0%	NA	926	NA	NA
10	NA	919	NA	NA	-1.202	919	36	3%	-0.941	924	1	0%	-0.702	928	2	0%
11	NA	921	NA	NA	-1.081	921	56	5%	-0.818	926	11	1%	-0.578	930	2	0%
12	NA	923	NA	NA	-0.968	923	86	7%	-0.703	928	16	1%	-0.459	933	3	0%
13	NA	925	NA	NA	-0.862	925	85	7%	-0.592	930	25	2%	-0.344	935	2	0%
14	NA	927	NA	NA	-0.760	927	87	7%	-0.485	932	65	5%	-0.232	937	9	1%
15	NA	929	NA	NA	-0.662	929	109	9%	-0.381	934	93	7%	-0.122	939	19	2%
16	NA	931	NA	NA	-0.566	931	108	9%	-0.279	936	117	9%	-0.012	941	27	2%
17	NA	932	NA	NA	-0.473	932	90	7%	-0.177	938	133	10%	0.098	943	29	2%
18	NA	934	NA	NA	-0.381	934	98	8%	-0.077	940	144	11%	0.208	945	54	5%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	936	NA	NA	-0.289	936	63	5%	0.025	942	151	11%	0.319	947	81	7%
20	NA	938	NA	NA	-0.197	938	64	5%	0.127	944	145	11%	0.432	949	85	7%
21	NA	939	NA	NA	-0.103	939	45	4%	0.232	946	135	10%	0.548	952	88	7%
22	NA	941	NA	NA	-0.008	941	37	3%	0.340	948	97	7%	0.668	954	135	11%
23	NA	943	NA	NA	0.090	943	25	2%	0.453	950	75	6%	0.792	956	120	10%
24	NA	945	NA	NA	0.192	945	26	2%	0.571	952	49	4%	0.921	959	116	10%
25	NA	947	NA	NA	0.299	947	13	1%	0.697	954	31	2%	1.058	961	92	8%
26	NA	949	NA	NA	0.412	949	9	1%	0.833	957	19	1%	1.204	964	91	8%
27	NA	951	NA	NA	0.535	951	2	0%	0.981	960	11	1%	1.362	967	57	5%
28	NA	954	NA	NA	NA	954	NA	NA	1.146	963	1	0%	1.534	970	49	4%
29	NA	957	NA	NA	NA	957	NA	NA	NA	966	NA	NA	1.728	974	39	3%
30	NA	960	NA	NA	NA	960	NA	NA	NA	970	NA	NA	1.950	978	24	2%
31	NA	964	NA	NA	NA	964	NA	NA	NA	975	NA	NA	2.215	983	17	1%
32	NA	968	NA	NA	NA	968	NA	NA	NA	981	NA	NA	2.546	989	14	1%
33	NA	974	NA	NA	NA	974	NA	NA	NA	990	NA	NA	2.997	997	11	1%
34	NA	982	NA	NA	NA	982	NA	NA	NA	999	NA	NA	3.739	999	9	1%
35	NA	995	NA	NA	NA	995	NA	NA	NA	999	NA	NA	6.000	999	1	0%
36	NA	999	NA	NA	NA	999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix 7.C: Scale Scores

Table 7.C.1 Percentiles of Scale Scores in English Language Arts/Literacy (ELA)

Percentile	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
p1	300	400	500	600	700	800	900
p10	300	400	500	600	700	800	900
p20	303	415	517	626	715	828	930
p30	330	430	530	634	729	838	938
p40	338	437	538	639	736	842	944
p50	344	441	543	642	742	845	947
p60	349	447	549	647	748	848	950
p70	355	453	554	651	752	851	956
p80	362	458	558	655	757	856	960
p90	370	465	565	661	766	860	967
p99	393	483	584	672	782	875	983

Table 7.C.2 Percentiles of Scale Scores in Mathematics

Percentile	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
p1	300	400	500	600	700	800	900
p10	300	400	500	600	700	800	900
p20	303	403	504	603	717	805	916
p30	330	427	529	631	730	830	929
p40	336	433	536	635	734	835	934
p50	339	438	539	639	739	839	938
p60	343	442	543	642	743	843	942
p70	347	445	547	645	745	846	947
p80	351	449	552	650	750	850	952
p90	358	457	558	656	757	856	959
p99	380	478	578	679	782	876	983

Note: In [Table 7.C.3](#) through [Table 7.C.16](#), an expression that opens and closes with a bracket indicates that a value is greater than or equal to the first number and is less than or equal to the second number. For example, “[345, 347]” indicates a value greater than or equal to 345 but less than or equal to 347.

Table 7.C.3 Frequency Distribution of Overall Scale Scores—ELA, Grade Three

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[300, 302]	975	975	19%	19%
[303, 305]	88	1,063	2%	21%
[306, 308]	19	1,082	0%	21%
[309, 311]	0	1,082	0%	21%
[312, 314]	17	1,099	0%	22%
[315, 317]	61	1,160	1%	23%
[318, 320]	48	1,208	1%	24%
[321, 323]	36	1,244	1%	24%
[324, 326]	119	1,363	2%	27%
[327, 329]	75	1,438	1%	28%
[330, 332]	183	1,621	4%	32%
[333, 335]	137	1,758	3%	34%
[336, 338]	318	2,076	6%	41%
[339, 341]	290	2,366	6%	46%
[342, 344]	227	2,593	4%	51%
[345, 347]	364	2,957	7%	58%
[348, 350]	213	3,170	4%	62%
[351, 353]	351	3,521	7%	69%
[354, 356]	222	3,743	4%	73%
[357, 359]	269	4,012	5%	79%
[360, 362]	150	4,162	3%	82%
[363, 365]	226	4,388	4%	86%
[366, 368]	150	4,538	3%	89%
[369, 371]	138	4,676	3%	92%
[372, 374]	133	4,809	3%	94%
[375, 377]	86	4,895	2%	96%
[378, 380]	23	4,918	0%	96%
[381, 383]	68	4,986	1%	98%
[384, 386]	57	5,043	1%	99%
[387, 389]	0	5,043	0%	99%
[390, 392]	0	5,043	0%	99%
[393, 395]	33	5,076	1%	99%
[396, 398]	0	5,076	0%	99%
[399, 399]	26	5,102	1%	100%

Table 7.C.4 Frequency Distribution of Overall Scale Scores—ELA, Grade Four

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[400, 402]	869	869	16%	16%
[403, 405]	120	989	2%	19%
[406, 408]	20	1,009	0%	19%
[409, 411]	22	1,031	0%	19%
[412, 414]	18	1,049	0%	20%
[415, 417]	48	1,097	1%	21%
[418, 420]	35	1,132	1%	21%
[421, 423]	60	1,192	1%	22%
[424, 426]	147	1,339	3%	25%
[427, 429]	127	1,466	2%	28%
[430, 432]	302	1,768	6%	33%
[433, 435]	348	2,116	7%	40%
[436, 438]	225	2,341	4%	44%
[439, 441]	376	2,717	7%	51%
[442, 444]	212	2,929	4%	55%
[445, 447]	376	3,305	7%	62%
[448, 450]	193	3,498	4%	66%
[451, 453]	423	3,921	8%	74%
[454, 456]	214	4,135	4%	78%
[457, 459]	213	4,348	4%	82%
[460, 462]	281	4,629	5%	87%
[463, 465]	205	4,834	4%	91%
[466, 468]	157	4,991	3%	94%
[469, 471]	104	5,095	2%	96%
[472, 474]	79	5,174	1%	97%
[475, 477]	3	5,177	0%	97%
[478, 480]	74	5,251	1%	99%
[481, 483]	34	5,285	1%	99%
[484, 486]	0	5,285	0%	99%
[487, 489]	0	5,285	0%	99%
[490, 492]	25	5,310	0%	100%
[493, 495]	0	5,310	0%	100%
[496, 498]	0	5,310	0%	100%
[499, 499]	14	5,324	0%	100%

Table 7.C.5 Frequency Distribution of Overall Scale Scores—ELA, Grade Five

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[500, 502]	865	865	16%	16%
[503, 505]	117	982	2%	18%
[506, 508]	8	990	0%	19%
[509, 511]	21	1,011	0%	19%
[512, 514]	20	1,031	0%	19%
[515, 517]	53	1,084	1%	20%
[518, 520]	51	1,135	1%	21%
[521, 523]	67	1,202	1%	23%
[524, 526]	169	1,371	3%	26%
[527, 529]	109	1,480	2%	28%
[530, 532]	288	1,768	5%	33%
[533, 535]	180	1,948	3%	37%
[536, 538]	297	2,245	6%	42%
[539, 541]	263	2,508	5%	47%
[542, 544]	227	2,735	4%	51%
[545, 547]	356	3,091	7%	58%
[548, 550]	257	3,348	5%	63%
[551, 553]	376	3,724	7%	70%
[554, 556]	378	4,102	7%	77%
[557, 559]	240	4,342	5%	81%
[560, 562]	379	4,721	7%	89%
[563, 565]	188	4,909	4%	92%
[566, 568]	138	5,047	3%	95%
[569, 571]	98	5,145	2%	97%
[572, 574]	59	5,204	1%	98%
[575, 577]	6	5,210	0%	98%
[578, 580]	54	5,264	1%	99%
[581, 583]	0	5,264	0%	99%
[584, 586]	25	5,289	0%	99%
[587, 589]	0	5,289	0%	99%
[590, 592]	27	5,316	1%	100%
[593, 595]	0	5,316	0%	100%
[596, 598]	0	5,316	0%	100%
[599, 599]	14	5,330	0%	100%

Table 7.C.6 Frequency Distribution of Overall Scale Scores—ELA, Grade Six

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[600, 602]	807	807	15%	15%
[603, 605]	42	849	1%	16%
[606, 608]	18	867	0%	16%
[609, 611]	0	867	0%	16%
[612, 614]	25	892	0%	17%
[615, 617]	35	927	1%	17%
[618, 620]	35	962	1%	18%
[621, 623]	64	1,026	1%	19%
[624, 626]	78	1,104	1%	20%
[627, 629]	132	1,236	2%	23%
[630, 632]	146	1,382	3%	26%
[633, 635]	281	1,663	5%	31%
[636, 638]	371	2,034	7%	38%
[639, 641]	425	2,459	8%	46%
[642, 644]	463	2,922	9%	54%
[645, 647]	471	3,393	9%	63%
[648, 650]	313	3,706	6%	69%
[651, 653]	460	4,166	9%	77%
[654, 656]	239	4,405	4%	82%
[657, 659]	387	4,792	7%	89%
[660, 662]	168	4,960	3%	92%
[663, 665]	156	5,116	3%	95%
[666, 668]	98	5,214	2%	97%
[669, 671]	79	5,293	1%	98%
[672, 674]	45	5,338	1%	99%
[675, 677]	28	5,366	1%	100%
[678, 680]	0	5,366	0%	100%
[681, 683]	16	5,382	0%	100%
[684, 686]	0	5,382	0%	100%
[687, 689]	0	5,382	0%	100%
[690, 692]	4	5,386	0%	100%
[693, 695]	0	5,386	0%	100%
[696, 698]	0	5,386	0%	100%
[699, 699]	0	5,386	0%	100%

Table 7.C.7 Frequency Distribution of Overall Scale Scores—ELA, Grade Seven

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[700, 702]	826	826	15%	15%
[703, 705]	167	993	3%	18%
[706, 708]	20	1,013	0%	19%
[709, 711]	25	1,038	0%	19%
[712, 714]	25	1,063	0%	20%
[715, 717]	34	1,097	1%	20%
[718, 720]	117	1,214	2%	23%
[721, 723]	60	1,274	1%	24%
[724, 726]	101	1,375	2%	26%
[727, 729]	263	1,638	5%	30%
[730, 732]	165	1,803	3%	33%
[733, 735]	188	1,991	3%	37%
[736, 738]	333	2,324	6%	43%
[739, 741]	360	2,684	7%	50%
[742, 744]	289	2,973	5%	55%
[745, 747]	233	3,206	4%	60%
[748, 750]	438	3,644	8%	68%
[751, 753]	276	3,920	5%	73%
[754, 756]	217	4,137	4%	77%
[757, 759]	281	4,418	5%	82%
[760, 762]	191	4,609	4%	86%
[763, 765]	191	4,800	4%	89%
[766, 768]	245	5,045	5%	94%
[769, 771]	122	5,167	2%	96%
[772, 774]	77	5,244	1%	97%
[775, 777]	0	5,244	0%	97%
[778, 780]	49	5,293	1%	98%
[781, 783]	45	5,338	1%	99%
[784, 786]	0	5,338	0%	99%
[787, 789]	20	5,358	0%	100%
[790, 792]	0	5,358	0%	100%
[793, 795]	17	5,375	0%	100%
[796, 798]	0	5,375	0%	100%
[799, 799]	8	5,383	0%	100%

Table 7.C.8 Frequency Distribution of Overall Scale Scores—ELA, Grade Eight

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[800, 802]	863	863	16%	16%
[803, 805]	70	933	1%	18%
[806, 808]	0	933	0%	18%
[809, 811]	17	950	0%	18%
[812, 814]	14	964	0%	18%
[815, 817]	8	972	0%	19%
[818, 820]	6	978	0%	19%
[821, 823]	15	993	0%	19%
[824, 826]	39	1,032	1%	20%
[827, 829]	30	1,062	1%	20%
[830, 832]	105	1,167	2%	22%
[833, 835]	206	1,373	4%	26%
[836, 838]	278	1,651	5%	32%
[839, 841]	422	2,073	8%	40%
[842, 844]	454	2,527	9%	48%
[845, 847]	488	3,015	9%	58%
[848, 850]	426	3,441	8%	66%
[851, 853]	508	3,949	10%	75%
[854, 856]	451	4,400	9%	84%
[857, 859]	165	4,565	3%	87%
[860, 862]	287	4,852	5%	93%
[863, 865]	109	4,961	2%	95%
[866, 868]	85	5,046	2%	96%
[869, 871]	54	5,100	1%	97%
[872, 874]	51	5,151	1%	98%
[875, 877]	44	5,195	1%	99%
[878, 880]	24	5,219	0%	100%
[881, 883]	0	5,219	0%	100%
[884, 886]	16	5,235	0%	100%
[887, 889]	0	5,235	0%	100%
[890, 892]	0	5,235	0%	100%
[893, 895]	2	5,237	0%	100%
[896, 898]	0	5,237	0%	100%
[899, 899]	1	5,238	0%	100%

Table 7.C.9 Frequency Distribution of Overall Scale Scores—ELA, Grade Eleven

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[900, 902]	617	617	14%	14%
[903, 905]	74	691	2%	16%
[906, 908]	17	708	0%	16%
[909, 911]	9	717	0%	16%
[912, 914]	5	722	0%	16%
[915, 917]	11	733	0%	16%
[918, 920]	12	745	0%	17%
[921, 923]	17	762	0%	17%
[924, 926]	65	827	1%	19%
[927, 929]	41	868	1%	19%
[930, 932]	108	976	2%	22%
[933, 935]	179	1,155	4%	26%
[936, 938]	215	1,370	5%	31%
[939, 941]	249	1,619	6%	36%
[942, 944]	335	1,954	8%	44%
[945, 947]	378	2,332	8%	52%
[948, 950]	390	2,722	9%	61%
[951, 953]	198	2,920	4%	66%
[954, 956]	362	3,282	8%	74%
[957, 959]	228	3,510	5%	79%
[960, 962]	242	3,752	5%	84%
[963, 965]	210	3,962	5%	89%
[966, 968]	103	4,065	2%	91%
[969, 971]	118	4,183	3%	94%
[972, 974]	86	4,269	2%	96%
[975, 977]	72	4,341	2%	97%
[978, 980]	52	4,393	1%	99%
[981, 983]	44	4,437	1%	100%
[984, 986]	0	4,437	0%	100%
[987, 989]	12	4,449	0%	100%
[990, 992]	0	4,449	0%	100%
[993, 995]	0	4,449	0%	100%
[996, 998]	6	4,455	0%	100%
[999, 999]	2	4,457	0%	100%

Table 7.C.10 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Three

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[300, 302]	989	989	19%	19%
[303, 305]	134	1,123	3%	22%
[306, 308]	23	1,146	0%	22%
[309, 311]	20	1,166	0%	23%
[312, 314]	9	1,175	0%	23%
[315, 317]	29	1,204	1%	24%
[318, 320]	76	1,280	1%	25%
[321, 323]	61	1,341	1%	26%
[324, 326]	80	1,421	2%	28%
[327, 329]	105	1,526	2%	30%
[330, 332]	304	1,830	6%	36%
[333, 335]	199	2,029	4%	40%
[336, 338]	316	2,345	6%	46%
[339, 341]	512	2,857	10%	56%
[342, 344]	322	3,179	6%	62%
[345, 347]	419	3,598	8%	71%
[348, 350]	244	3,842	5%	75%
[351, 353]	531	4,373	10%	86%
[354, 356]	178	4,551	3%	89%
[357, 359]	143	4,694	3%	92%
[360, 362]	102	4,796	2%	94%
[363, 365]	85	4,881	2%	96%
[366, 368]	64	4,945	1%	97%
[369, 371]	42	4,987	1%	98%
[372, 374]	38	5,025	1%	99%
[375, 377]	14	5,039	0%	99%
[378, 380]	22	5,061	0%	99%
[381, 383]	0	5,061	0%	99%
[384, 386]	10	5,071	0%	99%
[387, 389]	13	5,084	0%	100%
[390, 392]	0	5,084	0%	100%
[393, 395]	4	5,088	0%	100%
[396, 398]	0	5,088	0%	100%
[399, 399]	13	5,101	0%	100%

Table 7.C.11 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Four

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[400, 402]	938	938	18%	18%
[403, 405]	156	1,094	3%	21%
[406, 408]	0	1,094	0%	21%
[409, 411]	31	1,125	1%	21%
[412, 414]	34	1,159	1%	22%
[415, 417]	97	1,256	2%	24%
[418, 420]	53	1,309	1%	25%
[421, 423]	85	1,394	2%	26%
[424, 426]	88	1,482	2%	28%
[427, 429]	283	1,765	5%	33%
[430, 432]	176	1,941	3%	37%
[433, 435]	481	2,422	9%	46%
[436, 438]	287	2,709	5%	51%
[439, 441]	418	3,127	8%	59%
[442, 444]	343	3,470	6%	65%
[445, 447]	572	4,042	11%	76%
[448, 450]	239	4,281	5%	81%
[451, 453]	216	4,497	4%	85%
[454, 456]	194	4,691	4%	88%
[457, 459]	179	4,870	3%	92%
[460, 462]	176	5,046	3%	95%
[463, 465]	92	5,138	2%	97%
[466, 468]	55	5,193	1%	98%
[469, 471]	36	5,229	1%	98%
[472, 474]	6	5,235	0%	99%
[475, 477]	17	5,252	0%	99%
[478, 480]	23	5,275	0%	99%
[481, 483]	15	5,290	0%	100%
[484, 486]	0	5,290	0%	100%
[487, 489]	7	5,297	0%	100%
[490, 492]	0	5,297	0%	100%
[493, 495]	3	5,300	0%	100%
[496, 498]	0	5,300	0%	100%
[499, 499]	9	5,309	0%	100%

Table 7.C.12 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Five

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[500, 502]	946	946	18%	18%
[503, 505]	145	1,091	3%	21%
[506, 508]	24	1,115	0%	21%
[509, 511]	0	1,115	0%	21%
[512, 514]	33	1,148	1%	22%
[515, 517]	32	1,180	1%	22%
[518, 520]	53	1,233	1%	23%
[521, 523]	145	1,378	3%	26%
[524, 526]	94	1,472	2%	28%
[527, 529]	173	1,645	3%	31%
[530, 532]	255	1,900	5%	36%
[533, 535]	209	2,109	4%	40%
[536, 538]	544	2,653	10%	50%
[539, 541]	384	3,037	7%	57%
[542, 544]	311	3,348	6%	63%
[545, 547]	548	3,896	10%	73%
[548, 550]	252	4,148	5%	78%
[551, 553]	285	4,433	5%	83%
[554, 556]	288	4,721	5%	89%
[557, 559]	145	4,866	3%	91%
[560, 562]	103	4,969	2%	93%
[563, 565]	77	5,046	1%	95%
[566, 568]	131	5,177	2%	97%
[569, 571]	41	5,218	1%	98%
[572, 574]	36	5,254	1%	99%
[575, 577]	0	5,254	0%	99%
[578, 580]	27	5,281	1%	99%
[581, 583]	12	5,293	0%	100%
[584, 586]	5	5,298	0%	100%
[587, 589]	0	5,298	0%	100%
[590, 592]	11	5,309	0%	100%
[593, 595]	0	5,309	0%	100%
[596, 598]	2	5,311	0%	100%
[599, 599]	8	5,319	0%	100%

Table 7.C.13 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Six

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[600, 602]	980	980	18%	18%
[603, 605]	96	1,076	2%	20%
[606, 608]	19	1,095	0%	20%
[609, 611]	0	1,095	0%	20%
[612, 614]	18	1,113	0%	21%
[615, 617]	29	1,142	1%	21%
[618, 620]	28	1,170	1%	22%
[621, 623]	49	1,219	1%	23%
[624, 626]	77	1,296	1%	24%
[627, 629]	228	1,524	4%	28%
[630, 632]	197	1,721	4%	32%
[633, 635]	470	2,191	9%	41%
[636, 638]	299	2,490	6%	46%
[639, 641]	693	3,183	13%	59%
[642, 644]	403	3,586	8%	67%
[645, 647]	286	3,872	5%	72%
[648, 650]	489	4,361	9%	81%
[651, 653]	198	4,559	4%	85%
[654, 656]	279	4,838	5%	90%
[657, 659]	140	4,978	3%	93%
[660, 662]	73	5,051	1%	94%
[663, 665]	86	5,137	2%	96%
[666, 668]	110	5,247	2%	98%
[669, 671]	0	5,247	0%	98%
[672, 674]	32	5,279	1%	98%
[675, 677]	31	5,310	1%	99%
[678, 680]	23	5,333	0%	99%
[681, 683]	1	5,334	0%	99%
[684, 686]	16	5,350	0%	100%
[687, 689]	0	5,350	0%	100%
[690, 692]	6	5,356	0%	100%
[693, 695]	0	5,356	0%	100%
[696, 698]	0	5,356	0%	100%
[699, 699]	10	5,366	0%	100%

Table 7.C.14 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Seven

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[700, 702]	852	852	16%	16%
[703, 705]	141	993	3%	18%
[706, 708]	20	1,013	0%	19%
[709, 711]	11	1,024	0%	19%
[712, 714]	35	1,059	1%	20%
[715, 717]	26	1,085	0%	20%
[718, 720]	38	1,123	1%	21%
[721, 723]	109	1,232	2%	23%
[724, 726]	125	1,357	2%	25%
[727, 729]	210	1,567	4%	29%
[730, 732]	378	1,945	7%	36%
[733, 735]	284	2,229	5%	41%
[736, 738]	455	2,684	8%	50%
[739, 741]	510	3,194	9%	59%
[742, 744]	322	3,516	6%	65%
[745, 747]	360	3,876	7%	72%
[748, 750]	458	4,334	9%	81%
[751, 753]	222	4,556	4%	85%
[754, 756]	180	4,736	3%	88%
[757, 759]	252	4,988	5%	93%
[760, 762]	93	5,081	2%	95%
[763, 765]	70	5,151	1%	96%
[766, 768]	53	5,204	1%	97%
[769, 771]	38	5,242	1%	98%
[772, 774]	30	5,272	1%	98%
[775, 777]	0	5,272	0%	98%
[778, 780]	36	5,308	1%	99%
[781, 783]	22	5,330	0%	99%
[784, 786]	18	5,348	0%	99%
[787, 789]	0	5,348	0%	99%
[790, 792]	12	5,360	0%	100%
[793, 795]	0	5,360	0%	100%
[796, 798]	6	5,366	0%	100%
[799, 799]	9	5,375	0%	100%

Table 7.C.15 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Eight

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[800, 802]	955	955	18%	18%
[803, 805]	91	1,046	2%	20%
[806, 808]	0	1,046	0%	20%
[809, 811]	15	1,061	0%	20%
[812, 814]	8	1,069	0%	20%
[815, 817]	25	1,094	0%	21%
[818, 820]	72	1,166	1%	22%
[821, 823]	60	1,226	1%	23%
[824, 826]	136	1,362	3%	26%
[827, 829]	165	1,527	3%	29%
[830, 832]	252	1,779	5%	34%
[833, 835]	436	2,215	8%	42%
[836, 838]	280	2,495	5%	48%
[839, 841]	578	3,073	11%	59%
[842, 844]	277	3,350	5%	64%
[845, 847]	532	3,882	10%	74%
[848, 850]	448	4,330	9%	83%
[851, 853]	178	4,508	3%	86%
[854, 856]	271	4,779	5%	91%
[857, 859]	100	4,879	2%	93%
[860, 862]	81	4,960	2%	95%
[863, 865]	103	5,063	2%	97%
[866, 868]	41	5,104	1%	98%
[869, 871]	35	5,139	1%	98%
[872, 874]	22	5,161	0%	99%
[875, 877]	24	5,185	0%	99%
[878, 880]	14	5,199	0%	99%
[881, 883]	13	5,212	0%	100%
[884, 886]	0	5,212	0%	100%
[887, 889]	6	5,218	0%	100%
[890, 892]	4	5,222	0%	100%
[893, 895]	0	5,222	0%	100%
[896, 898]	3	5,225	0%	100%
[899, 899]	4	5,229	0%	100%

Table 7.C.16 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Eleven

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[900, 902]	635	635	14%	14%
[903, 905]	149	784	3%	18%
[906, 908]	20	804	0%	18%
[909, 911]	22	826	0%	19%
[912, 914]	27	853	1%	19%
[915, 917]	37	890	1%	20%
[918, 920]	43	933	1%	21%
[921, 923]	148	1,081	3%	24%
[924, 926]	97	1,178	2%	27%
[927, 929]	214	1,392	5%	31%
[930, 932]	290	1,682	7%	38%
[933, 935]	196	1,878	4%	42%
[936, 938]	386	2,264	9%	51%
[939, 941]	272	2,536	6%	57%
[942, 944]	350	2,886	8%	65%
[945, 947]	309	3,195	7%	72%
[948, 950]	266	3,461	6%	78%
[951, 953]	139	3,600	3%	81%
[954, 956]	286	3,886	6%	88%
[957, 959]	135	4,021	3%	91%
[960, 962]	103	4,124	2%	93%
[963, 965]	92	4,216	2%	95%
[966, 968]	57	4,273	1%	96%
[969, 971]	49	4,322	1%	97%
[972, 974]	39	4,361	1%	98%
[975, 977]	0	4,361	0%	98%
[978, 980]	24	4,385	1%	99%
[981, 983]	17	4,402	0%	99%
[984, 986]	0	4,402	0%	99%
[987, 989]	14	4,416	0%	100%
[990, 992]	0	4,416	0%	100%
[993, 995]	0	4,416	0%	100%
[996, 998]	11	4,427	0%	100%
[999, 999]	10	4,437	0%	100%

Appendix 7.D: Demographic Summaries

Notes:

- To protect privacy when the number of students in a student group is 10 or fewer, the summary statistics at the test and reporting levels are not reported and are presented as “NA” in the tables in appendix 7.D.
- Percentages in these tables may not sum up to 100 due to rounding.

Table 7.D.1 Demographic Summary for ELA, Grade Three

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,102	340	25	51%	28%	21%
Male	3,540	340	25	51%	28%	21%
Female	1,562	340	25	51%	28%	22%
American Indian or Alaska Native	34	342	26	38%	32%	29%
Asian	398	336	23	58%	29%	14%
Native Hawaiian or Other Pacific Islander	23	337	25	57%	30%	13%
Filipino	131	336	24	54%	34%	11%
Hispanic or Latino	2,921	340	25	50%	28%	22%
Black or African American	388	340	25	52%	26%	22%
White	957	340	26	51%	24%	24%
Two or more races	250	338	24	51%	32%	17%
English only	3,124	340	25	51%	26%	22%
Initial fluent English proficient	36	332	26	58%	33%	8%
English learner	1,764	341	24	49%	30%	21%
Reclassified fluent English proficient	169	336	25	57%	25%	17%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Intellectual disability	1,592	338	22	56%	31%	14%
Hearing impairment	48	342	24	42%	35%	23%
Speech or language impairment	205	357	18	19%	34%	48%
Visual impairment	18	334	33	56%	6%	39%
Emotional disturbance	23	361	14	17%	35%	48%
Orthopedic impairment	172	326	27	67%	21%	12%
Other health impairment	308	351	23	36%	25%	39%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Specific learning disability	288	368	14	3%	22%	75%
Deaf-blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	260	319	22	82%	14%	3%
Autism	2,159	338	24	54%	28%	17%
Traumatic brain injury	26	337	25	54%	31%	15%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,666	336	25	58%	25%	17%
Economically disadvantaged	3,436	342	25	48%	29%	23%
Migrant	23	342	23	48%	26%	26%
Nonmigrant	5,079	340	25	51%	28%	21%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	6	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	238	335	22	61%	28%	11%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	7	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	82	338	24	50%	38%	12%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	600	336	26	57%	24%	20%
Black or African American (Primary ethnicity—Not economically disadvantaged)	107	336	25	64%	19%	17%
White (Primary ethnicity—Not economically disadvantaged)	501	337	25	58%	24%	18%
Two or more races (Primary ethnicity—Not economically disadvantaged)	125	337	24	52%	31%	17%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	28	343	26	36%	32%	32%
Asian (Primary ethnicity—Economically disadvantaged)	160	338	24	52%	30%	18%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	16	342	22	50%	38%	13%
Filipino (Primary ethnicity—Economically disadvantaged)	49	333	22	61%	29%	10%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,321	342	25	48%	29%	23%
Black or African American (Primary ethnicity—Economically disadvantaged)	281	342	25	47%	29%	23%
White (Primary ethnicity—Economically disadvantaged)	456	344	27	44%	25%	31%
Two or more races (Primary ethnicity—Economically disadvantaged)	125	339	24	50%	33%	17%

Table 7.D.2 Demographic Summary for ELA, Grade Four

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,324	438	23	55%	27%	18%
Male	3,600	439	23	54%	27%	19%
Female	1,724	438	22	57%	26%	18%
American Indian or Alaska Native	30	448	22	37%	33%	30%
Asian	419	434	21	64%	26%	10%
Native Hawaiian or Other Pacific Islander	29	440	17	55%	34%	10%
Filipino	126	429	23	63%	29%	8%
Hispanic or Latino	3,049	439	23	53%	28%	19%
Black or African American	418	437	23	59%	25%	16%
White	1,020	439	23	55%	24%	21%
Two or more races	233	434	24	60%	21%	18%
English only	3,217	438	23	55%	26%	19%
Initial fluent English proficient	48	434	22	67%	23%	10%
English learner	1,792	438	22	55%	28%	17%
Reclassified fluent English proficient	259	440	21	51%	34%	15%
To be determined	5	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Intellectual disability	1,786	436	20	62%	26%	11%
Hearing impairment	53	446	22	30%	42%	28%
Speech or language impairment	187	453	16	22%	36%	41%
Visual impairment	22	431	29	64%	23%	14%
Emotional disturbance	29	458	19	17%	24%	59%
Orthopedic impairment	217	429	26	67%	18%	15%
Other health impairment	308	447	21	38%	31%	31%
Specific learning disability	394	461	14	8%	33%	59%
Deaf-blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	276	418	21	84%	12%	4%
Autism	2,030	436	22	59%	27%	14%
Traumatic brain injury	21	440	23	52%	33%	14%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,722	434	23	63%	22%	14%
Economically disadvantaged	3,602	440	22	51%	29%	20%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	43	445	20	40%	42%	19%
Nonmigrant	5,281	438	23	55%	27%	18%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	13	446	22	46%	23%	31%
Asian (Primary ethnicity—Not economically disadvantaged)	248	432	20	70%	23%	7%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	10	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	80	426	23	71%	21%	8%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	592	435	24	61%	23%	16%
Black or African American (Primary ethnicity—Not economically disadvantaged)	114	432	22	69%	24%	7%
White (Primary ethnicity—Not economically disadvantaged)	551	436	24	61%	21%	18%
Two or more races (Primary ethnicity—Not economically disadvantaged)	114	430	23	67%	22%	11%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	17	450	24	29%	41%	29%
Asian (Primary ethnicity—Economically disadvantaged)	171	436	22	56%	32%	13%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	19	442	14	47%	42%	11%
Filipino (Primary ethnicity—Economically disadvantaged)	46	435	22	50%	41%	9%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,457	440	22	51%	29%	20%
Black or African American (Primary ethnicity—Economically disadvantaged)	304	439	23	55%	25%	19%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	469	442	22	49%	27%	24%
Two or more races (Primary ethnicity—Economically disadvantaged)	119	438	25	54%	21%	25%

Table 7.D.3 Demographic Summary for ELA, Grade Five

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,330	539	23	51%	30%	19%
Male	3,643	539	23	51%	30%	19%
Female	1,687	538	22	53%	30%	17%
American Indian or Alaska Native	32	549	21	31%	38%	31%
Asian	412	535	22	60%	28%	12%
Native Hawaiian or Other Pacific Islander	27	532	24	56%	37%	7%
Filipino	130	535	22	59%	32%	9%
Hispanic or Latino	3,098	540	23	49%	31%	20%
Black or African American	397	540	22	52%	31%	17%
White	1,035	538	24	53%	27%	20%
Two or more races	199	536	24	56%	28%	16%
English only	3,095	538	23	52%	29%	19%
Initial fluent English proficient	40	534	21	68%	23%	10%
English learner	1,844	539	22	51%	31%	18%
Reclassified fluent English proficient	342	543	22	41%	37%	23%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Intellectual disability	1,893	537	21	56%	31%	13%
Hearing impairment	41	545	21	32%	49%	20%
Speech or language impairment	168	555	12	14%	50%	36%
Visual impairment	24	522	26	71%	17%	13%
Emotional disturbance	34	554	16	26%	35%	38%
Orthopedic impairment	242	525	25	71%	18%	11%
Other health impairment	273	547	22	38%	33%	30%
Specific learning disability	397	560	13	10%	35%	55%
Deaf-blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	293	520	22	82%	15%	3%
Autism	1,944	538	22	54%	30%	16%
Traumatic brain injury	21	543	26	38%	29%	33%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,782	535	23	59%	27%	14%
Economically disadvantaged	3,548	541	22	47%	32%	21%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	30	547	20	37%	30%	33%
Nonmigrant	5,300	539	23	51%	30%	18%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	240	534	22	60%	30%	10%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	2	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	85	537	21	55%	34%	11%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	588	534	24	59%	25%	16%
Black or African American (Primary ethnicity—Not economically disadvantaged)	119	536	21	62%	29%	9%
White (Primary ethnicity—Not economically disadvantaged)	621	536	23	59%	25%	16%
Two or more races (Primary ethnicity—Not economically disadvantaged)	119	533	23	61%	28%	12%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	24	556	17	13%	46%	42%
Asian (Primary ethnicity—Economically disadvantaged)	172	537	23	60%	24%	16%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	25	530	24	60%	32%	8%
Filipino (Primary ethnicity—Economically disadvantaged)	45	531	23	67%	27%	7%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,510	541	22	47%	33%	20%
Black or African American (Primary ethnicity—Economically disadvantaged)	278	542	22	47%	32%	21%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	414	543	23	44%	30%	26%
Two or more races (Primary ethnicity—Economically disadvantaged)	80	539	26	50%	28%	23%

Table 7.D.4 Demographic Summary for ELA, Grade Six

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,386	639	20	54%	35%	11%
Male	3,606	640	20	52%	36%	12%
Female	1,780	637	21	59%	31%	10%
American Indian or Alaska Native	29	639	23	52%	24%	24%
Asian	415	635	20	65%	29%	6%
Native Hawaiian or Other Pacific Islander	25	634	24	64%	20%	16%
Filipino	139	636	19	69%	23%	8%
Hispanic or Latino	3,188	639	20	52%	37%	11%
Black or African American	433	639	20	56%	35%	10%
White	970	639	21	53%	33%	14%
Two or more races	187	636	21	59%	33%	9%
English only	3,071	639	20	53%	35%	12%
Initial fluent English proficient	57	634	20	65%	32%	4%
English learner	1,801	638	20	56%	33%	10%
Reclassified fluent English proficient	450	639	19	51%	41%	9%
To be determined	3	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Intellectual disability	1,997	638	18	59%	34%	7%
Hearing impairment	63	643	15	49%	41%	10%
Speech or language impairment	118	652	11	23%	53%	24%
Visual impairment	23	629	20	78%	17%	4%
Emotional disturbance	34	653	16	26%	32%	41%
Orthopedic impairment	243	627	24	71%	19%	9%
Other health impairment	263	646	20	36%	42%	22%
Specific learning disability	384	656	11	14%	49%	38%
Deaf-blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	320	619	21	86%	12%	3%
Autism	1,901	639	19	55%	36%	9%
Traumatic brain injury	35	635	25	54%	34%	11%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,743	636	21	61%	30%	9%
Economically disadvantaged	3,643	640	20	51%	37%	12%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	33	646	18	45%	39%	15%
Nonmigrant	5,353	639	20	54%	35%	11%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	220	634	20	65%	31%	5%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	12	644	18	50%	25%	25%
Filipino (Primary ethnicity—Not economically disadvantaged)	94	634	19	70%	23%	6%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	623	636	21	59%	32%	9%
Black or African American (Primary ethnicity—Not economically disadvantaged)	126	634	20	66%	27%	7%
White (Primary ethnicity—Not economically disadvantaged)	552	637	21	59%	31%	10%
Two or more races (Primary ethnicity—Not economically disadvantaged)	108	630	22	69%	25%	6%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	21	638	22	57%	24%	19%
Asian (Primary ethnicity—Economically disadvantaged)	195	636	20	65%	28%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	13	625	25	77%	15%	8%
Filipino (Primary ethnicity—Economically disadvantaged)	45	639	18	67%	22%	11%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,565	640	20	50%	38%	12%
Black or African American (Primary ethnicity—Economically disadvantaged)	307	641	19	51%	38%	11%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	418	642	21	45%	37%	19%
Two or more races (Primary ethnicity—Economically disadvantaged)	79	643	16	44%	43%	13%

Table 7.D.5 Demographic Summary for ELA, Grade Seven

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,383	738	23	55%	27%	18%
Male	3,630	739	23	55%	26%	19%
Female	1,753	738	23	55%	29%	16%
American Indian or Alaska Native	33	747	22	30%	36%	33%
Asian	402	733	22	67%	24%	9%
Native Hawaiian or Other Pacific Islander	29	744	23	38%	38%	24%
Filipino	152	737	22	61%	24%	16%
Hispanic or Latino	3,097	738	23	55%	27%	17%
Black or African American	464	739	23	55%	25%	20%
White	994	741	23	51%	27%	22%
Two or more races	212	739	23	53%	28%	19%
English only	3,104	739	23	54%	27%	19%
Initial fluent English proficient	83	729	22	76%	18%	6%
English learner	1,721	737	22	58%	27%	15%
Reclassified fluent English proficient	467	741	22	50%	28%	21%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Intellectual disability	2,090	736	21	62%	25%	13%
Hearing impairment	47	744	17	43%	45%	13%
Speech or language impairment	109	752	17	29%	39%	31%
Visual impairment	18	727	22	61%	33%	6%
Emotional disturbance	48	754	18	29%	27%	44%
Orthopedic impairment	235	727	25	69%	19%	11%
Other health impairment	300	750	21	29%	37%	34%
Specific learning disability	422	757	16	16%	35%	49%
Deaf-blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	266	720	23	81%	14%	5%
Autism	1,821	737	22	58%	27%	15%
Traumatic brain injury	27	732	23	63%	30%	7%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,792	735	23	60%	25%	15%
Economically disadvantaged	3,591	740	22	53%	28%	20%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	36	742	24	42%	33%	25%
Nonmigrant	5,347	738	23	55%	27%	18%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	12	745	24	25%	42%	33%
Asian (Primary ethnicity—Not economically disadvantaged)	228	732	21	68%	24%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	7	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	103	732	22	67%	21%	12%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	631	733	24	62%	23%	15%
Black or African American (Primary ethnicity—Not economically disadvantaged)	120	731	24	65%	23%	12%
White (Primary ethnicity—Not economically disadvantaged)	578	738	23	55%	28%	18%
Two or more races (Primary ethnicity—Not economically disadvantaged)	113	736	23	60%	28%	12%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	21	749	22	33%	33%	33%
Asian (Primary ethnicity—Economically disadvantaged)	174	734	22	65%	24%	11%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	22	743	21	41%	32%	27%
Filipino (Primary ethnicity—Economically disadvantaged)	49	747	17	47%	29%	24%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,466	739	22	54%	28%	18%
Black or African American (Primary ethnicity—Economically disadvantaged)	344	741	22	51%	26%	23%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	416	744	23	46%	27%	27%
Two or more races (Primary ethnicity—Economically disadvantaged)	99	744	23	45%	27%	27%

Table 7.D.6 Demographic Summary for ELA, Grade Eight

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,238	840	21	48%	39%	13%
Male	3,531	840	21	48%	38%	14%
Female	1,707	839	21	49%	40%	11%
American Indian or Alaska Native	31	843	24	35%	39%	26%
Asian	437	837	20	57%	36%	7%
Native Hawaiian or Other Pacific Islander	24	835	22	54%	42%	4%
Filipino	164	839	21	52%	38%	10%
Hispanic or Latino	2,968	840	21	47%	40%	13%
Black or African American	429	841	20	46%	41%	13%
White	1,028	840	22	48%	36%	16%
Two or more races	157	843	19	45%	44%	11%
English only	2,978	840	21	48%	38%	14%
Initial fluent English proficient	93	833	22	61%	34%	4%
English learner	1,644	839	21	49%	40%	11%
Reclassified fluent English proficient	516	843	19	41%	44%	15%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Intellectual disability	2,075	840	19	50%	41%	9%
Hearing impairment	51	841	18	51%	45%	4%
Speech or language impairment	104	854	14	19%	44%	37%
Visual impairment	31	826	24	65%	32%	3%
Emotional disturbance	35	854	13	20%	46%	34%
Orthopedic impairment	213	829	25	62%	31%	7%
Other health impairment	279	848	18	30%	45%	25%
Specific learning disability	343	857	11	10%	49%	41%
Deaf-blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	280	820	23	79%	19%	3%
Autism	1,801	839	20	52%	37%	11%
Traumatic brain injury	23	846	23	26%	52%	22%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,817	837	22	54%	34%	12%
Economically disadvantaged	3,421	841	20	45%	41%	13%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	34	847	17	29%	50%	21%
Nonmigrant	5,204	840	21	48%	39%	13%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	7	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	236	835	21	61%	33%	6%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	9	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	91	839	21	51%	38%	11%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	619	837	22	55%	34%	11%
Black or African American (Primary ethnicity—Not economically disadvantaged)	139	838	23	47%	38%	14%
White (Primary ethnicity—Not economically disadvantaged)	640	838	23	52%	33%	15%
Two or more races (Primary ethnicity—Not economically disadvantaged)	76	842	21	50%	37%	13%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	24	844	24	38%	38%	25%
Asian (Primary ethnicity—Economically disadvantaged)	201	840	19	53%	39%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	15	842	19	40%	53%	7%
Filipino (Primary ethnicity—Economically disadvantaged)	73	839	20	55%	37%	8%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,349	841	20	45%	41%	13%
Black or African American (Primary ethnicity—Economically disadvantaged)	290	842	19	46%	42%	12%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	388	844	20	41%	41%	18%
Two or more races (Primary ethnicity—Economically disadvantaged)	81	843	18	40%	51%	10%

Table 7.D.7 Demographic Summary for ELA, Grade Eleven

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	4,457	943	22	44%	35%	21%
Male	2,924	943	22	44%	34%	22%
Female	1,533	942	21	44%	37%	19%
American Indian or Alaska Native	35	952	21	23%	46%	31%
Asian	351	939	22	54%	28%	17%
Native Hawaiian or Other Pacific Islander	18	933	23	56%	39%	6%
Filipino	128	942	21	44%	41%	15%
Hispanic or Latino	2,432	943	22	43%	35%	22%
Black or African American	420	942	22	44%	36%	20%
White	934	944	23	42%	35%	23%
Two or more races	139	943	23	42%	37%	21%
English only	2,619	943	22	44%	34%	22%
Initial fluent English proficient	71	944	23	38%	39%	23%
English learner	1,237	942	22	45%	37%	19%
Reclassified fluent English proficient	519	945	21	43%	34%	24%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	10	NA	NA	NA	NA	NA
Intellectual disability	1,892	943	20	44%	39%	17%
Hearing impairment	50	945	21	38%	32%	30%
Speech or language impairment	47	958	11	11%	45%	45%
Visual impairment	30	931	27	63%	23%	13%
Emotional disturbance	39	956	24	23%	18%	59%
Orthopedic impairment	231	932	27	58%	24%	18%
Other health impairment	192	953	20	25%	34%	41%
Specific learning disability	276	961	13	8%	37%	55%
Deaf-blindness	2	NA	NA	NA	NA	NA
Multiple disabilities	227	923	24	76%	16%	7%
Autism	1,434	942	21	46%	35%	18%
Traumatic brain injury	37	930	26	65%	24%	11%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,594	940	23	49%	33%	18%
Economically disadvantaged	2,863	944	21	41%	36%	23%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	17	946	20	41%	35%	24%
Nonmigrant	4,440	943	22	44%	35%	21%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	13	943	27	38%	38%	23%
Asian (Primary ethnicity—Not economically disadvantaged)	179	938	21	56%	29%	15%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	73	943	21	44%	38%	18%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	539	938	23	52%	30%	18%
Black or African American (Primary ethnicity—Not economically disadvantaged)	151	939	22	54%	29%	17%
White (Primary ethnicity—Not economically disadvantaged)	552	943	23	44%	36%	20%
Two or more races (Primary ethnicity—Not economically disadvantaged)	79	940	25	48%	37%	15%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	22	957	14	14%	50%	36%
Asian (Primary ethnicity—Economically disadvantaged)	172	940	22	52%	28%	20%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	10	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Economically disadvantaged)	55	940	20	44%	45%	11%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	1,893	944	21	41%	36%	23%
Black or African American (Primary ethnicity—Economically disadvantaged)	269	944	21	39%	40%	21%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	382	946	22	39%	33%	28%
Two or more races (Primary ethnicity—Economically disadvantaged)	60	948	19	33%	38%	28%

Table 7.D.8 Demographic Summary for Mathematics, Grade Three

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,101	335	21	62%	30%	8%
Male	3,536	335	22	62%	30%	9%
Female	1,565	334	21	64%	29%	6%
American Indian or Alaska Native	34	334	22	47%	50%	3%
Asian	401	333	22	67%	24%	9%
Native Hawaiian or Other Pacific Islander	23	330	22	61%	35%	4%
Filipino	130	333	21	65%	28%	7%
Hispanic or Latino	2,911	335	21	62%	30%	7%
Black or African American	391	335	22	59%	31%	10%
White	959	335	23	61%	29%	10%
Two or more races	252	334	21	63%	30%	6%
English only	3,116	334	22	62%	30%	8%
Initial fluent English proficient	35	329	24	69%	26%	6%
English learner	1,770	335	21	62%	31%	8%
Reclassified fluent English proficient	169	333	22	68%	25%	7%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	7	NA	NA	NA	NA	NA
Intellectual disability	1,599	333	20	67%	29%	4%
Hearing impairment	48	337	21	46%	50%	4%
Speech or language impairment	206	346	15	40%	44%	16%
Visual impairment	17	333	33	59%	18%	24%
Emotional disturbance	23	354	18	17%	52%	30%
Orthopedic impairment	174	321	23	82%	15%	3%
Other health impairment	307	341	19	52%	35%	13%
Specific learning disability	292	354	14	24%	47%	29%
Deaf-blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	258	316	19	88%	11%	0%
Autism	2,148	334	21	63%	29%	8%
Traumatic brain injury	26	328	22	77%	19%	4%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,667	332	22	68%	25%	8%
Economically disadvantaged	3,434	336	21	60%	32%	8%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	22	333	19	73%	27%	0%
Nonmigrant	5,079	335	22	62%	30%	8%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	6	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	240	333	22	71%	18%	11%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	7	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	81	334	21	65%	26%	9%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	598	331	22	67%	26%	7%
Black or African American (Primary ethnicity—Not economically disadvantaged)	109	333	23	64%	28%	7%
White (Primary ethnicity—Not economically disadvantaged)	500	332	23	67%	25%	8%
Two or more races (Primary ethnicity—Not economically disadvantaged)	126	333	21	67%	28%	5%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	28	336	22	43%	54%	4%
Asian (Primary ethnicity—Economically disadvantaged)	161	333	22	61%	33%	6%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	16	334	21	56%	38%	6%
Filipino (Primary ethnicity—Economically disadvantaged)	49	333	20	63%	33%	4%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,313	336	21	61%	32%	7%
Black or African American (Primary ethnicity—Economically disadvantaged)	282	336	22	57%	32%	11%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	459	338	22	54%	32%	13%
Two or more races (Primary ethnicity—Economically disadvantaged)	126	335	21	60%	33%	8%

Table 7.D.9 Demographic Summary for Mathematics, Grade Four

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,309	434	21	65%	26%	8%
Male	3,587	434	21	65%	26%	9%
Female	1,722	433	20	67%	27%	6%
American Indian or Alaska Native	30	442	22	47%	30%	23%
Asian	417	431	21	71%	23%	6%
Native Hawaiian or Other Pacific Islander	29	432	20	66%	28%	7%
Filipino	125	428	21	74%	18%	8%
Hispanic or Latino	3,044	434	20	65%	27%	8%
Black or African American	417	433	20	69%	23%	8%
White	1,014	435	21	63%	29%	9%
Two or more races	233	431	22	67%	23%	10%
English only	3,201	434	20	65%	27%	8%
Initial fluent English proficient	47	433	19	77%	15%	9%
English learner	1,796	433	21	65%	26%	9%
Reclassified fluent English proficient	257	435	20	65%	28%	7%
To be determined	5	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Intellectual disability	1,784	432	19	72%	23%	5%
Hearing impairment	53	442	17	55%	30%	15%
Speech or language impairment	187	447	14	34%	49%	17%
Visual impairment	22	424	22	77%	18%	5%
Emotional disturbance	29	448	17	31%	48%	21%
Orthopedic impairment	216	425	23	72%	22%	6%
Other health impairment	309	439	19	59%	28%	13%
Specific learning disability	393	451	14	25%	47%	28%
Deaf-blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	277	417	20	87%	12%	1%
Autism	2,017	433	21	68%	25%	7%
Traumatic brain injury	21	434	18	67%	33%	0%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,714	431	21	70%	23%	7%
Economically disadvantaged	3,595	435	20	63%	28%	9%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	43	443	20	42%	47%	12%
Nonmigrant	5,266	434	21	66%	26%	8%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	13	442	22	46%	31%	23%
Asian (Primary ethnicity—Not economically disadvantaged)	249	431	21	70%	24%	6%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	10	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	79	425	21	78%	13%	9%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	592	431	21	69%	26%	5%
Black or African American (Primary ethnicity—Not economically disadvantaged)	112	430	21	75%	18%	7%
White (Primary ethnicity—Not economically disadvantaged)	546	432	21	68%	23%	9%
Two or more races (Primary ethnicity—Not economically disadvantaged)	113	427	22	73%	22%	5%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	17	441	23	47%	29%	24%
Asian (Primary ethnicity—Economically disadvantaged)	168	432	21	71%	22%	7%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	19	431	21	63%	26%	11%
Filipino (Primary ethnicity—Economically disadvantaged)	46	433	21	67%	26%	7%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,452	435	20	64%	27%	9%
Black or African American (Primary ethnicity—Economically disadvantaged)	305	435	19	66%	25%	9%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	468	437	20	56%	35%	9%
Two or more races (Primary ethnicity—Economically disadvantaged)	120	435	22	62%	24%	14%

Table 7.D.10 Demographic Summary for Mathematics, Grade Five

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,319	535	21	63%	29%	9%
Male	3,632	535	21	62%	29%	9%
Female	1,687	534	20	66%	27%	7%
American Indian or Alaska Native	32	542	18	53%	34%	13%
Asian	408	533	22	64%	29%	7%
Native Hawaiian or Other Pacific Islander	27	529	24	59%	37%	4%
Filipino	130	534	20	63%	30%	7%
Hispanic or Latino	3,100	535	21	63%	29%	9%
Black or African American	394	535	20	65%	26%	9%
White	1,031	535	22	62%	29%	10%
Two or more races	197	531	22	68%	26%	6%
English only	3,088	534	21	64%	28%	8%
Initial fluent English proficient	40	530	24	68%	23%	10%
English learner	1,841	535	21	63%	29%	8%
Reclassified fluent English proficient	341	538	20	56%	33%	10%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Intellectual disability	1,892	533	19	70%	25%	5%
Hearing impairment	41	539	20	51%	37%	12%
Speech or language impairment	166	548	12	35%	47%	18%
Visual impairment	25	518	22	80%	20%	0%
Emotional disturbance	34	545	18	41%	41%	18%
Orthopedic impairment	242	522	23	80%	16%	4%
Other health impairment	271	542	19	48%	38%	14%
Specific learning disability	396	553	13	24%	48%	27%
Deaf-blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	295	518	20	87%	12%	2%
Autism	1,937	534	21	63%	29%	8%
Traumatic brain injury	20	536	22	55%	35%	10%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,777	531	21	69%	25%	7%
Economically disadvantaged	3,542	536	21	60%	30%	9%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	30	539	18	60%	33%	7%
Nonmigrant	5,289	535	21	63%	29%	9%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	238	531	22	65%	29%	5%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	2	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	85	536	19	64%	28%	8%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	586	530	22	72%	22%	6%
Black or African American (Primary ethnicity—Not economically disadvantaged)	120	532	20	73%	19%	8%
White (Primary ethnicity—Not economically disadvantaged)	619	533	21	65%	26%	8%
Two or more races (Primary ethnicity—Not economically disadvantaged)	119	529	21	74%	24%	3%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	24	546	16	46%	38%	17%
Asian (Primary ethnicity—Economically disadvantaged)	170	534	22	63%	29%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	25	527	24	60%	36%	4%
Filipino (Primary ethnicity—Economically disadvantaged)	45	530	23	62%	33%	4%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,514	536	20	61%	30%	9%
Black or African American (Primary ethnicity—Economically disadvantaged)	274	537	20	61%	29%	10%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	412	538	22	56%	32%	12%
Two or more races (Primary ethnicity—Economically disadvantaged)	78	535	24	58%	31%	12%

Table 7.D.11 Demographic Summary for Mathematics, Grade Six

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,366	635	20	67%	26%	7%
Male	3,592	636	20	64%	27%	8%
Female	1,774	632	20	72%	23%	5%
American Indian or Alaska Native	29	636	23	62%	24%	14%
Asian	415	634	21	70%	21%	9%
Native Hawaiian or Other Pacific Islander	25	626	19	88%	12%	0%
Filipino	139	633	22	73%	20%	6%
Hispanic or Latino	3,171	635	20	66%	28%	6%
Black or African American	432	635	20	71%	22%	7%
White	969	635	21	65%	25%	10%
Two or more races	186	631	21	68%	27%	4%
English only	3,054	635	21	66%	26%	8%
Initial fluent English proficient	57	628	20	82%	12%	5%
English learner	1,797	635	20	68%	25%	6%
Reclassified fluent English proficient	451	636	19	65%	29%	6%
To be determined	3	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Intellectual disability	1,986	634	18	72%	24%	4%
Hearing impairment	62	640	16	66%	24%	10%
Speech or language impairment	116	646	14	52%	35%	13%
Visual impairment	23	627	22	87%	4%	9%
Emotional disturbance	33	651	17	39%	27%	33%
Orthopedic impairment	244	623	23	80%	16%	5%
Other health impairment	263	639	20	57%	33%	10%
Specific learning disability	380	651	15	31%	46%	24%
Deaf-blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	320	617	20	86%	13%	1%
Autism	1,899	635	20	66%	26%	7%
Traumatic brain injury	35	633	26	60%	23%	17%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,734	632	22	70%	23%	7%
Economically disadvantaged	3,632	636	20	65%	27%	7%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	33	641	18	52%	39%	9%
Nonmigrant	5,333	635	20	67%	26%	7%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	221	633	22	70%	20%	10%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	12	631	18	92%	8%	0%
Filipino (Primary ethnicity—Not economically disadvantaged)	94	630	19	77%	22%	1%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	619	632	22	70%	24%	7%
Black or African American (Primary ethnicity—Not economically disadvantaged)	124	629	20	80%	18%	2%
White (Primary ethnicity—Not economically disadvantaged)	549	634	22	66%	24%	10%
Two or more races (Primary ethnicity—Not economically disadvantaged)	107	627	23	71%	26%	3%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	21	637	23	62%	24%	14%
Asian (Primary ethnicity—Economically disadvantaged)	194	635	19	70%	23%	7%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	13	621	20	85%	15%	0%
Filipino (Primary ethnicity—Economically disadvantaged)	45	637	25	67%	16%	18%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,552	636	19	65%	28%	6%
Black or African American (Primary ethnicity—Economically disadvantaged)	308	637	20	67%	24%	9%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	420	637	20	63%	26%	11%
Two or more races (Primary ethnicity—Economically disadvantaged)	79	636	18	65%	29%	6%

Table 7.D.12 Demographic Summary for Mathematics, Grade Seven

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,375	735	20	65%	27%	7%
Male	3,632	736	21	64%	28%	8%
Female	1,743	734	20	68%	26%	6%
American Indian or Alaska Native	34	740	24	62%	21%	18%
Asian	402	732	21	72%	20%	7%
Native Hawaiian or Other Pacific Islander	28	737	20	68%	29%	4%
Filipino	152	733	18	75%	22%	3%
Hispanic or Latino	3,096	735	20	65%	28%	7%
Black or African American	465	736	20	66%	26%	8%
White	984	736	20	62%	30%	8%
Two or more races	214	735	21	66%	23%	10%
English only	3,090	735	21	65%	28%	7%
Initial fluent English proficient	84	728	20	85%	13%	2%
English learner	1,729	735	20	67%	26%	7%
Reclassified fluent English proficient	464	738	19	60%	32%	8%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Intellectual disability	2,093	733	19	72%	24%	4%
Hearing impairment	47	743	16	47%	51%	2%
Speech or language impairment	109	746	13	48%	44%	8%
Visual impairment	18	719	20	89%	11%	0%
Emotional disturbance	48	747	14	44%	44%	13%
Orthopedic impairment	231	722	22	81%	16%	3%
Other health impairment	299	743	19	46%	43%	11%
Specific learning disability	423	753	14	28%	49%	24%
Deaf-blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	263	717	20	88%	10%	2%
Autism	1,817	735	20	66%	26%	8%
Traumatic brain injury	27	731	23	70%	22%	7%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,781	732	21	71%	22%	6%
Economically disadvantaged	3,594	737	20	62%	30%	8%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	36	738	20	67%	19%	14%
Nonmigrant	5,339	735	20	65%	27%	7%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	12	740	21	50%	33%	17%
Asian (Primary ethnicity—Not economically disadvantaged)	229	730	21	76%	17%	7%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	6	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	103	729	19	83%	16%	2%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	627	731	21	72%	23%	5%
Black or African American (Primary ethnicity—Not economically disadvantaged)	120	730	21	77%	17%	7%
White (Primary ethnicity—Not economically disadvantaged)	570	734	21	66%	26%	8%
Two or more races (Primary ethnicity—Not economically disadvantaged)	114	733	21	68%	23%	9%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	22	740	26	68%	14%	18%
Asian (Primary ethnicity—Economically disadvantaged)	173	734	21	68%	25%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	22	735	16	68%	32%	0%
Filipino (Primary ethnicity—Economically disadvantaged)	49	742	14	59%	35%	6%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,469	736	20	63%	30%	7%
Black or African American (Primary ethnicity—Economically disadvantaged)	345	738	19	63%	29%	9%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	414	739	20	55%	36%	9%
Two or more races (Primary ethnicity—Economically disadvantaged)	100	738	19	64%	24%	12%

Table 7.D.13 Demographic Summary for Mathematics, Grade Eight

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,229	834	20	64%	29%	7%
Male	3,532	835	20	63%	30%	7%
Female	1,697	833	20	66%	28%	6%
American Indian or Alaska Native	31	838	21	52%	32%	16%
Asian	435	833	21	65%	29%	7%
Native Hawaiian or Other Pacific Islander	24	828	20	83%	13%	4%
Filipino	163	836	21	60%	32%	8%
Hispanic or Latino	2,968	835	20	63%	30%	7%
Black or African American	430	835	18	66%	30%	4%
White	1,023	834	21	66%	27%	7%
Two or more races	155	836	20	66%	26%	8%
English only	2,965	835	20	65%	29%	6%
Initial fluent English proficient	93	829	21	73%	23%	4%
English learner	1,648	834	21	63%	30%	7%
Reclassified fluent English proficient	515	837	19	60%	33%	8%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Intellectual disability	2,084	834	19	69%	27%	4%
Hearing impairment	50	842	21	50%	34%	16%
Speech or language impairment	104	848	14	38%	48%	14%
Visual impairment	31	818	20	87%	10%	3%
Emotional disturbance	36	845	16	33%	56%	11%
Orthopedic impairment	214	822	22	79%	17%	4%
Other health impairment	280	842	18	49%	40%	12%
Specific learning disability	341	851	13	28%	51%	21%
Deaf-blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	278	817	21	84%	14%	2%
Autism	1,785	834	20	65%	28%	6%
Traumatic brain injury	23	836	20	57%	39%	4%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,820	832	21	69%	25%	7%
Economically disadvantaged	3,409	836	20	62%	32%	7%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	34	841	18	44%	47%	9%
Nonmigrant	5,195	834	20	64%	29%	7%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	7	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	236	831	22	67%	28%	6%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	9	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	90	838	20	60%	32%	8%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	622	832	21	70%	23%	7%
Black or African American (Primary ethnicity—Not economically disadvantaged)	140	833	21	61%	31%	7%
White (Primary ethnicity—Not economically disadvantaged)	640	832	21	70%	24%	6%
Two or more races (Primary ethnicity—Not economically disadvantaged)	76	834	20	72%	20%	8%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	24	839	21	50%	33%	17%
Asian (Primary ethnicity—Economically disadvantaged)	199	835	20	62%	30%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	15	833	19	73%	20%	7%
Filipino (Primary ethnicity—Economically disadvantaged)	73	834	22	60%	32%	8%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,346	836	20	61%	32%	7%
Black or African American (Primary ethnicity—Economically disadvantaged)	290	835	17	68%	30%	3%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	383	837	20	60%	31%	8%
Two or more races (Primary ethnicity—Economically disadvantaged)	79	837	19	61%	32%	8%

Table 7.D.14 Demographic Summary for Mathematics, Grade Eleven

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	4,437	935	21	65%	26%	9%
Male	2,916	936	21	62%	27%	11%
Female	1,521	934	20	70%	23%	7%
American Indian or Alaska Native	34	946	18	38%	44%	18%
Asian	346	934	21	70%	22%	8%
Native Hawaiian or Other Pacific Islander	18	932	24	56%	33%	11%
Filipino	128	936	21	68%	22%	10%
Hispanic or Latino	2,430	935	20	66%	25%	9%
Black or African American	416	936	21	64%	26%	10%
White	931	936	21	62%	28%	11%
Two or more races	134	935	23	64%	25%	10%
English only	2,599	936	21	64%	26%	10%
Initial fluent English proficient	70	936	22	63%	29%	9%
English learner	1,239	934	21	68%	24%	8%
Reclassified fluent English proficient	517	938	20	63%	26%	11%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	11	923	19	91%	9%	0%
Intellectual disability	1,876	934	18	71%	24%	5%
Hearing impairment	50	939	21	58%	28%	14%
Speech or language impairment	46	951	14	41%	30%	28%
Visual impairment	29	922	24	86%	10%	3%
Emotional disturbance	39	949	22	36%	36%	28%
Orthopedic impairment	230	925	22	75%	20%	5%
Other health impairment	190	943	20	49%	35%	15%
Specific learning disability	275	954	14	21%	48%	31%
Deaf-blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	230	918	21	87%	11%	3%
Autism	1,431	937	21	63%	26%	11%
Traumatic brain injury	38	927	23	82%	16%	3%
Not classified	0	NA	NA	NA	NA	NA
Not economically disadvantaged	1,580	933	22	68%	23%	9%
Economically disadvantaged	2,857	937	20	63%	27%	10%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	16	940	18	63%	31%	6%
Nonmigrant	4,421	935	21	65%	26%	9%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	12	939	21	58%	33%	8%
Asian (Primary ethnicity—Not economically disadvantaged)	178	934	21	71%	22%	7%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	74	936	21	68%	20%	12%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	535	931	22	72%	21%	8%
Black or African American (Primary ethnicity—Not economically disadvantaged)	150	933	22	70%	19%	11%
White (Primary ethnicity—Not economically disadvantaged)	547	935	22	64%	27%	9%
Two or more races (Primary ethnicity—Not economically disadvantaged)	76	933	23	66%	25%	9%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	22	950	16	27%	50%	23%
Asian (Primary ethnicity—Economically disadvantaged)	168	934	20	69%	21%	10%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	10	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Economically disadvantaged)	54	934	21	69%	24%	7%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	1,895	936	20	65%	26%	9%
Black or African American (Primary ethnicity—Economically disadvantaged)	266	938	20	60%	30%	10%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	384	938	21	58%	29%	13%
Two or more races (Primary ethnicity—Economically disadvantaged)	58	937	22	62%	26%	12%

Chapter 8: Analyses

This chapter contains the item- and test-level statistics from the analyses conducted for the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics administered during the 2017–18 California Assessment of Student Performance and Progress (CAASPP) administration.

8.1. Background

This chapter provides information on the psychometric analyses of the 2017–18 CAA operational data. It describes the data samples used for the statistical analyses, presents the results of the item and test analyses, and provides explanations for all statistical procedures implemented in the psychometric analyses. Those procedures include item analyses, differential item functioning (DIF) analyses, item response theory (IRT) calibration, equating and scaling, and computation of reliability, standard errors of measurement, and decision consistency and accuracy of the achievement-level classifications. The procedures designed to ensure the validity of score uses and interpretations also are provided.

8.1.1. Summary of the Analyses

The following lists the analyses conducted for the CAAs for ELA and mathematics. Each analysis is described in the text subsequently, and the corresponding analysis results are provided in the appendices.

1. **Classical Item Analyses (IA).** Classical item analysis for the CAAs for ELA and mathematics is discussed in subsection [8.2 Classical Item Analysis Statistics](#). [Appendix 8.A](#) presents results of the classical item analyses, including item difficulty indices, item-total correlation coefficient, and the distribution of score points for the dichotomous and polytomous items. In addition, the item type and associated item flags are also provided.
2. **IRT Analyses.** IRT analyses, including calibration, equating, and scaling for the CAAs for ELA and mathematics are elaborated in subsection [8.3 Item Response Theory \(IRT\) Analyses](#). [Appendix 8.B](#) includes scatterplots showing the relationship between item bank item difficulty parameter estimates (b -value) of the common items and their spring 2017–18 item difficulty parameter estimates (b -value) for the common item set after transforming the 2016–17 estimates onto the reference scale from the 2015–16 administration. [Appendix 8.C](#) includes summaries of the linked item difficulty parameter estimates (b -value) for all of the items in each test. For polytomous items, partial credit step values (d -values) are also provided.
3. **Omission and Completion Analyses.** The omit rate and item difficulty information for the CAAs for ELA and mathematics are presented in subsection [8.4 Omission and Completion Rates](#), and the results of omission and completion analyses are presented in [appendix 8.D](#). These analyses examine whether the items with high omit rates are systematically more difficult than items with low omit rates. [Table 8.D.17](#) through [Table 8.D.24](#) in [appendix 8.D](#), and starting on page [377](#), present the total number of items answered by students at each performance level.
4. **Differential Item Functioning (DIF) Analyses.** DIF analysis for the CAAs for ELA and mathematics is described in subsection [8.5 Differential Item Functioning \(DIF\)](#). [Appendix 8.E](#) presents the results of the DIF analyses for all items with sufficient student sample sizes. The distributions of items across DIF categories are listed.

5. **Reliability Analyses.** Reliability estimation for the CAAs for ELA and mathematics is illustrated in subsection [8.6 Reliability Analyses](#). [Table 8.F.1](#) through [Table 8.F.18](#) in [appendix 8.F](#) provide results of the reliability analyses of total test scores for the population as a whole, selected student groups of interest (e.g., gender, ethnicity, etc.), and each version of the grade-level, content area assessments. [Table 8.F.19](#) through [Table 8.F.32](#), starting on page [463](#), present the score conversion tables with the conditional standard errors of measurement (CSEM) for the reporting scale scores of each pathway. [Table 8.F.33](#) through [Table 8.F.60](#), starting on page [492](#), present statistics describing the decision accuracy and decision consistency of the performance classifications.
6. **Validity Evidence.** Validity evidence related to the CAAs for ELA and mathematics is discussed in subsection [8.7 Validity Evidence](#). [Table 8.G.1](#) through [Table 8.G.4](#) in [appendix 8.G](#), starting on page [498](#), present distributions of the observed testing time to complete the total test for each content area. [Table 8.G.5](#) through [Table 8.G.11](#), starting on page [505](#), present correlations between ELA and mathematics scores calculated for all students and for demographic student groups of interest.

8.1.2. Samples for the Analyses

In general, analyses included in the technical report are based on all valid students' scores in the tested population. The actual data sample used depends on the time that data source becomes available as well as the information contained in the data in order to meet the analysis timeline.

The classical item analyses ([appendix 8.A](#)), IRT analyses ([appendix 8.B](#) and [appendix 8.C](#)), and item-level DIF analyses ([appendix 8.E](#)) were based on the data file available in June 2018 (i.e., the analysis sample). All other analyses, such as the reliability analyses, used the final version of the production data file for student reports, which became available in October 2018. Both data sources include all valid student scores. A small number of student scores were excluded from the final production data as a result of the data validation process. Students who did not answer any items (non-completion) or answered fewer than four items (partial completion) were excluded from the analysis sample for both classical item analysis and item calibration. Refer to subsection [7.1.1 Incomplete and Complete Cases](#) for a list of cases where the tests are considered as "incomplete," and subsection [7.3.2 Special Cases](#) for a list of cases where the scores are not reported.

[Table 8.1](#) shows small differences in student counts between the two data sources, i.e., the analysis sample and the final production data file. Note that the analysis sample includes only students who answered at least four items (i.e., completers), while the sample data is representative of the population. Final production data files were received later and contained a larger number of completers than the analysis sample.

Table 8.1 CAA 2017–18 Analyses Data Sources

Content Area and Grade	Analyses Sample Completers	Final Data Completers	Final Data Partial Completers	Final Data Non-Completers	Final Data Total No. Tested
ELA 3	4,119	4,127	269	706	5,102
ELA 4	4,444	4,455	241	628	5,324
ELA 5	4,455	4,465	171	694	5,330
ELA 6	4,572	4,579	213	594	5,386
ELA 7	4,555	4,557	255	571	5,383
ELA 8	4,364	4,375	217	646	5,238
ELA 11	3,840	3,840	145	472	4,457
Mathematics 3	4,095	4,112	228	761	5,101
Mathematics 4	4,364	4,371	156	782	5,309
Mathematics 5	4,363	4,373	147	799	5,319
Mathematics 6	4,383	4,386	139	841	5,366
Mathematics 7	4,522	4,523	220	632	5,375
Mathematics 8	4,270	4,274	189	766	5,229
Mathematics 11	3,799	3,802	136	499	4,437

Note: Students who do not answer any items are considered “non-completers.” Students who answer more than one item, but fewer than four items, are considered “partial completers.” Students who answer at least four items are considered “completers.”

8.2. Classical Item Analysis Statistics

Classical item analyses are conducted to evaluate the performance of all operational test items with respect to item difficulty, item discrimination, and student performance on key-based selected-response or dichotomous items and rubric-based constructed-response items or polytomous items. Due to the nature of the multistage test (MST) design, routing rules present the items in each Stage 2 module to a group of students instead of to all students. The combination of Stage 1 and Stage 2 modules produces multiple linear test forms. Pathways of these forms are provided in [Table 4.1](#). As a result, item analyses must be conducted on each pathway.

8.2.1. Description of Classical Item Analysis Statistics

The classical item analyses include the computation of item difficulty indices and the item-total correlation indices. Flagging rules based on these statistics identify items not performing as expected. The omit rate of each item, the proportion of test takers choosing each distractor, the correlation of each distractor with the total score, and the distribution of each score point for the polytomous items are also included in the classical item analyses.

Some classical item analyses, such as item-total correlation and DIF analysis, require a criterion variable—typically, the total raw score. However, using the total raw score as a criterion variable for the CAAs for ELA and mathematics is not possible because of the MST design, in which different students take different combinations of modules. To circumvent these issues and provide the best available criterion score, a linearly transformed scale score based on theta score is used as the criterion score. Refer to subsection [8.3 Item Response Theory \(IRT\) Analyses](#), which provides a description of the methods used to compute theta scores.

8.2.1.1. Classical Item Difficulty Indices (*p*-value and Average Item Score)

For dichotomous items, item difficulty is indicated by the *p*-value, which is the proportion of students who answer an item correctly. The range of *p*-values is from 0.00 to 1.00. Items with higher *p*-values are easier items; those with lower *p*-values are more difficult items. Dichotomous items are flagged for review if their *p*-values are above 0.95 (i.e., too easy) or below 0.33 (i.e., too difficult).

The formula for *p*-value for dichotomous item is:

$$p\text{-value}_{dich} = \frac{\sum X_{ic}}{N_i}, \quad (8.1)$$

where,

X_{ic} is the score received for a given dichotomous item i for student j , and

N_i is the total number of students who were presented with item i .

For polytomous items, difficulty is indicated by the average item score (AIS). The AIS can range from 0.00 to the maximum total possible points for an item. Desired AIS values for polytomous items generally fall within the range of 30 percent to 80 percent of the maximum obtainable item score; items with values outside this range are flagged for review. To facilitate interpretation, the AIS values for polytomous items are often expressed as the proportion of the maximum possible score, which is analogous to the *p*-values of dichotomous items.

For polytomous items, the *p*-value is defined as:

$$p\text{-value}_{poly} = \frac{\sum X_{ij}}{N_i \times \text{Max}(X_i)} \quad (8.2)$$

where,

X_{ij} is the score received for a given polytomous item i for student j ,

N_i is the total number of students who were presented with item i , and

$\text{Max}(X_i)$ is the maximum score for item i .

8.2.1.2. Item-Total Correlation

Item-total correlation describes the relationship between students' performance on a specific item and their performance on the total assessment.

In general, the item-total correlation ranges from -1.0 (for a perfect negative relationship) to 1.0 (for a perfect positive relationship). A relatively high positive item-total correlation is

desired, as it indicates that students with higher scores on the assessment tend to perform better on the item than students with lower scores. A negative item-total correlation, which indicates that students with low scores on the assessment are more likely to get higher scores on the item than students with high scores on the assessment, typically signifies a problem with the item.

Because the product-moment correlation is limited by the distributions of the variables being correlated, the item discrimination index used in these analyses is a variation of the biserial correlation (for dichotomous items) or the polyserial correlation (for polytomous items). This statistic is an estimate of the correlation between the criterion and an unobservable continuous variable assumed to determine performance on the item. The criterion—in this case, the student’s theta score—is the ability value for which the expected total score is equal to the student’s total score. The estimation formula is

$$r_{polyreg} = \frac{\hat{\beta} s_{tot}}{\sqrt{\hat{\beta}^2 s_{tot}^2 + 1}} \quad (8.3)$$

where,

$\hat{\beta}$ is the estimated slope of the regression of the unobservable continuous variable (assumed to account for the item response) on the criterion, and

s_{tot} is the standard deviation of the criterion (the students’ theta scores).

There are as many regressions as the number of boundaries between item scores with all regressions for the same item sharing a common slope, β . For a polytomous item with k possible score values, there are $k-1$ regressions. Beta (β) is the common slope for all $k-1$ regressions.

Desired values for this correlation are positive and larger than 0.20. Negative item-total correlations indicate that low-ability students tend to obtain higher scores on the item than high-ability students, an indication that the scoring key may be incorrect or the item did not function as intended for the students taking the CAA. Items with item-total correlations below 0.20 were flagged for review.

Note that “not presented” items were treated as blank in the response data file.

8.2.1.3. Distribution of Item Scores

For polytomous items, examination of the distribution of scores helps to show how well the items performed. If no students receive the highest possible score, the item may not be functioning as expected. The item may be confusing, poorly worded, or just unexpectedly difficult; the scoring rubric may be flawed; or students may not have had an opportunity to learn the content tested by the item. If all or most students score at the extreme ends of the distribution—students receive either full credit or zero credit, but no partial credit—there may be problems with the item or the rubric.

Items with a low percentage (i.e., less than 1 percent) of students obtaining any possible item score are flagged for further review. Such items may pose problems during the IRT calibrations. They need to be carefully reviewed and may need to be excluded from the item calibration analyses.

8.2.2. Summary of Classical Item Analysis Flagging Criteria

Items are flagged for review if the item analysis yields any of the following results:

1. The p -value is above 0.95 for dichotomous items or above 0.80 for polytomous items.
2. The p -value is below 0.33 for dichotomous items or below 0.30 for polytomous items.
3. Item-total correlation (r -polyserial) is below 0.20.
4. Among the highest-performing students (the top 20 percent), the number of students choosing any distractor is greater than the number of those choosing the key.
5. The omit rate is above 5 percent for dichotomous items or above 15 percent for polytomous items.
6. The percentage of students receiving a score category is below 3 percent for polytomous items.

Also refer to Note 2 of [appendix 8.A](#) for the flagging symbols, descriptions, and their criteria.

ETS' psychometric staff and content assessment development staff carefully reviewed each of the flagged items and summarized the results for the California Department of Education (CDE), with recommendations for subsequent analyses. The classical item statistics are also entered into the item bank and used by the assessment development team for test assembly for future operational administrations.

8.2.3. Classical Item Analysis Results Summary

This subsection presents tables of the classical item analysis results for the 2017–18 test items. [Table 8.2](#) and [Table 8.3](#) present a summary of p -value and item-total correlation by module for ELA and mathematics tests, respectively.

Detailed results of the item analyses for each item by grade and subject are presented in [appendix 8.A](#). The item statistics, including AIS, p -value, polyserial correlation, statistical flagging criteria, and item type are listed in those tables. The distribution of item scores on each polytomous item is presented in [Table 8.A.15](#) through [Table 8.A.28](#).

Table 8.2 Classical Item Statistics for Each Module for ELA

Module	No. of Unique Items	Max No. of Students	Mean p -value ^a	Minimum p -value	Maximum p -value	Mean Item-Total Polyserial Correlation
Grade 3 Total:	51	4,119	0.62	0.32	0.97	0.57
Grade 3 Stage 1 router	10	4,119	0.71	0.48	0.81	0.58
Grade 3 Stage 2 easy	15	1,827	0.50	0.32	0.78	0.59
Grade 3 Stage 2 moderate	15	1,406	0.60	0.37	0.78	0.55
Grade 3 Stage 2 hard	15	825	0.67	0.38	0.97	0.59

Module	No. of Unique Items	Max No. of Students	Mean p -value ^a	Minimum p -value	Maximum p -value	Mean Item-Total Polyserial Correlation
Grade 4 Total:	51	4,444	0.56	0.24	0.81	0.50
Grade 4 Stage 1 router	10	4,444	0.67	0.48	0.80	0.56
Grade 4 Stage 2 easy	15	1,553	0.50	0.31	0.76	0.50
Grade 4 Stage 2 moderate	15	1,617	0.54	0.24	0.81	0.47
Grade 4 Stage 2 hard	15	1,180	0.60	0.36	0.81	0.49
Grade 5 Total:	53	4,455	0.58	0.27	0.87	0.50
Grade 5 Stage 1 router	10	4,455	0.71	0.36	0.87	0.58
Grade 5 Stage 2 easy	15	1,349	0.46	0.27	0.71	0.46
Grade 5 Stage 2 moderate	15	1,669	0.59	0.34	0.83	0.51
Grade 5 Stage 2 hard	15	1,345	0.60	0.34	0.86	0.47
Grade 6 Total:	54	4,572	0.51	0.07	0.91	0.49
Grade 6 Stage 1 router	10	4,572	0.72	0.61	0.88	0.57
Grade 6 Stage 2 easy	15	408	0.32	0.07	0.47	0.52
Grade 6 Stage 2 moderate	15	2,029	0.51	0.25	0.80	0.44
Grade 6 Stage 2 hard	15	2,056	0.56	0.31	0.91	0.45
Grade 7 Total:	54	4,555	0.56	0.19	0.84	0.52
Grade 7 Stage 1 router	10	4,555	0.68	0.54	0.84	0.56
Grade 7 Stage 2 easy	15	1,507	0.49	0.24	0.76	0.53
Grade 7 Stage 2 moderate	15	1,906	0.55	0.32	0.78	0.50
Grade 7 Stage 2 hard	15	1,041	0.59	0.19	0.80	0.52
Grade 8 Total:	48	4,364	0.58	0.28	0.93	0.48
Grade 8 Stage 1 router	10	4,364	0.65	0.37	0.89	0.48
Grade 8 Stage 2 easy	15	1,714	0.52	0.35	0.77	0.46
Grade 8 Stage 2 moderate	15	1,707	0.53	0.28	0.77	0.45
Grade 8 Stage 2 hard	15	849	0.63	0.33	0.93	0.51
Grade 11 Total:	52	3,840	0.57	0.27	0.89	0.51
Grade 11 Stage 1 router	10	3,840	0.68	0.53	0.78	0.58
Grade 11 Stage 2 easy	15	979	0.46	0.29	0.62	0.55
Grade 11 Stage 2 moderate	15	1,855	0.53	0.27	0.76	0.45
Grade 11 Stage 2 hard	15	926	0.64	0.31	0.89	0.51

^a. Each module is taken by different groups of students, so modules are not comparable

Table 8.3 Classical Item Statistics for Each Module for Mathematics

Module	No. of Unique Items	Max No. of Students	Mean p-value^a	Minimum p-value	Maximum p-value	Mean Item-Total Polyserial Correlation
Grade 3 Total:	53	4,095	0.44	0.10	0.74	0.45
Grade 3 Stage 1 router	10	4,095	0.63	0.42	0.74	0.49
Grade 3 Stage 2 easy	15	658	0.39	0.19	0.56	0.49
Grade 3 Stage 2 moderate	15	1,549	0.43	0.22	0.57	0.35
Grade 3 Stage 2 hard	15	1,797	0.37	0.10	0.64	0.44
Grade 4 Total:	51	4,364	0.47	0.26	0.79	0.43
Grade 4 Stage 1 router	10	4,364	0.65	0.46	0.79	0.51
Grade 4 Stage 2 easy	15	1,426	0.44	0.28	0.64	0.44
Grade 4 Stage 2 moderate	15	2,234	0.43	0.26	0.64	0.37
Grade 4 Stage 2 hard	15	641	0.44	0.26	0.55	0.41
Grade 5 Total:	54	4,363	0.44	0.15	0.80	0.45
Grade 5 Stage 1 router	10	4,363	0.60	0.34	0.80	0.52
Grade 5 Stage 2 easy	15	930	0.38	0.25	0.51	0.51
Grade 5 Stage 2 moderate	15	2,062	0.42	0.15	0.57	0.34
Grade 5 Stage 2 hard	15	1,289	0.42	0.23	0.57	0.45
Grade 6 Total:	48	4,383	0.48	0.20	0.67	0.42
Grade 6 Stage 1 router	10	4,383	0.58	0.42	0.67	0.49
Grade 6 Stage 2 easy	15	1,642	0.45	0.37	0.54	0.40
Grade 6 Stage 2 moderate	15	1,685	0.44	0.30	0.56	0.37
Grade 6 Stage 2 hard	15	961	0.46	0.20	0.65	0.45
Grade 7 Total:	49	4,522	0.45	0.14	0.80	0.47
Grade 7 Stage 1 router	10	4,522	0.66	0.49	0.80	0.52
Grade 7 Stage 2 easy	15	672	0.41	0.25	0.53	0.46
Grade 7 Stage 2 moderate	15	1,698	0.39	0.23	0.56	0.42
Grade 7 Stage 2 hard	15	2,032	0.39	0.14	0.56	0.49
Grade 8 Total:	49	4,270	0.46	0.15	0.81	0.45
Grade 8 Stage 1 router	10	4,270	0.58	0.38	0.81	0.44
Grade 8 Stage 2 easy	15	634	0.47	0.25	0.59	0.50
Grade 8 Stage 2 moderate	15	2,082	0.42	0.15	0.59	0.45
Grade 8 Stage 2 hard	15	1,491	0.43	0.23	0.59	0.46

Module	No. of Unique Items	Max No. of Students	Mean p -value ^a	Minimum p -value	Maximum p -value	Mean Item-Total Polyserial Correlation
Grade 11 Total:	50	3,799	0.50	0.27	0.84	0.48
Grade 11 Stage 1 router	10	3,799	0.58	0.49	0.74	0.54
Grade 11 Stage 2 easy	15	1,211	0.48	0.35	0.74	0.54
Grade 11 Stage 2 moderate	15	1,333	0.48	0.29	0.74	0.38
Grade 11 Stage 2 hard	15	1,175	0.51	0.27	0.84	0.50

^a. Each module is taken by different groups of students, so modules are not comparable.

8.3. Item Response Theory (IRT) Analyses

IRT is built upon the item response function, which describes the probability of a given response as a function of a person's true ability. IRT can be used to implement item calibrations, link item parameters, and scale test scores across different forms or test administrations, evaluate item performance, build an item bank, and assemble test forms.

This section describes how IRT models are used in CAA tests for calibrating items, linking item parameters onto the reference scale (i.e., the 2015–16 baseline scale), and scaling the test scores from different forms onto a common scale so that they can be compared. The topics, such as IRT data file preparation and IRT model, are also covered in this section.

8.3.1. IRT Models

The one-parameter logistic item response theory model (1PL-IRT) is used for the CAAs for ELA and mathematics item calibration and was selected after consultation with the CDE. In particular, the generalized partial credit model (GPCM) (Muraki, 1992) restricted for 1PL-IRT, which is essentially the partial credit model (PCM; Masters, 1982), is applied to both dichotomous and polytomous items. The mathematical form of the GPCM is the following:

$$P_{ih}(\theta_j) = \begin{cases} \frac{\exp(\sum_{v=1}^h Da_i(\theta_j - b_i + d_{iv}))}{1 + \sum_{c=1}^{n_i} \exp(\sum_{v=1}^c Da_i(\theta_j - b_i + d_{iv}))}, & \text{if score } h = 1, 2, \dots, n_i \\ \frac{1}{1 + \sum_{c=1}^{n_i} \exp(\sum_{v=1}^c Da_i(\theta_j - b_i + d_{iv}))}, & \text{if score } h = 0 \end{cases} \quad (8.4)$$

where,

$P_{ih}(\theta_j)$ is the probability of student with proficiency θ_j obtaining score h on item i ;

n_i is the maximum number of score points for item i ;

a_i is the discrimination parameter and is fixed to 0.588 for every item;

b_i is the location parameter for item i ;

d_{iv} is the category parameter for item i on score v ; and

D is a scaling constant of 1.7 that makes the logistic model approximate the normal ogive model.

When $n_i = 1$, equation 8.4 becomes an expression of the 1-parameter logistic model for dichotomous items. Essentially, the one-parameter logistic (1PL) model (Hambleton, Swaminathan, & Rogers, 1991) and the partial credit model (PCM) (Masters, 1982) were used for dichotomous items and polytomous items, respectively.

8.3.2. Equating

Equating is a procedure where test scores from different test forms that are assembled based on the same specifications are placed onto the reference scale so that scores from different test administrations are comparable. The 2017–18 CAAs for ELA and mathematics in grades three through eight and grade eleven are equated to the baseline scale established in the 2015–16 administration for each assessment using a common-item nonequivalent group design (Kolen & Brennan, 2004). The equating procedure for the CAAs for ELA and mathematics has three steps: item calibration, linking, and scaling.

8.3.2.1. Item Calibration

After the 2017–18 CAA administration, all the items within each test (grade and content area) were calibrated concurrently, using all available data. Previous studies show that compared with separate calibration, concurrent calibration is more accurate when the data fits the IRT model (Kim & Cohen, 1998; Hanson & Béguin, 2002). After consultation with the CDE and its CAASPP Technical Advisory Group, a single-group concurrent calibration approach is used for item calibration of the CAAs for ELA and mathematics.

The 10 operational items in the router at Stage 1, together with some overlapping items between the pathways, serve as common items between the pathways for the concurrent calibration. The nonanchor operational items in the three Stage 2 modules, as well as the embedded field-test items are calibrated onto the existing IRT scale in this concurrent calibration. Refer to [4.2.2. ELA and Mathematics Test Design](#) in [Chapter 4: Test Assembly](#) for the distributions of these items in modules. As stated in subsection [8.3.1 IRT Models](#), the one-parameter logistic (1PL) model (Hambleton, Swaminathan, & Rogers, 1991) and the corresponding PCM are jointly used to concurrently calibrate dichotomously and polytomously scored items. The software flexMIRT® (Cai, 2018) version 3.5 is used for calibration.

8.3.2.1.1 Data Preparation

Prior to IRT calibration analyses, ETS psychometricians reviewed the results of the classical item analyses to decide whether any items were of poor quality and needed to be removed from calibration. The results were also reviewed by ETS content experts and the CDE. The decision to remove items from calibration were made in consultation with the CDE. For the 2017–18 administration of the CAAs for ELA and mathematics, no items were excluded from the calibration analyses.

For IRT calibration, scored item response data was used to create the IRT analysis input data files for each grade and content area, including responses to items at both Stage 1 and Stage 2. For each possible form (i.e., pathway), there are 29 items in total, with 14 items from Stage 1 and 15 items from Stage 2. The IRT analysis input data file is a sparse matrix, because each student completed only one of the four possible forms (refer to [Table 4.1](#) for the list of forms). Similar to the classical item analyses, “omit” items are treated as incorrect and “not-presented” items are treated as blank.

8.3.2.1.2 Description of the Calibration Procedure

FlexMIRT (Cai, 2018), a multilevel and multiple-group IRT software package for item analysis and test scoring, is used for CAA item calibration analysis. This software can fit a variety of IRT models to both single-level and multilevel data that are dichotomous, polytomous, or both, and is chosen for its superior flexibility among IRT software programs.

The calibration procedure is as follows:

1. Receive test form planners and create the item mapping files.
2. Receive data.
3. Run complete item analysis and create the sparse matrices.
4. Create the item analysis summary information workbooks.
5. Create the flexMIRT control files.
6. Run flexMIRT and evaluate the results.

The procedure described next was followed to calibrate the 2017–18 student response data using flexMIRT for each grade and subject.

1. Prepare and format the input data files as required by flexMIRT.
2. Prepare flexMIRT control files and specify the IRT models and analyses. The 1PL-IRT model and the corresponding partial credit model were used.
3. Evaluate the flexMIRT output to examine whether every execution of flexMIRT analysis reached satisfactory convergence.
4. Review the item parameter estimates to examine whether these estimates were reasonable.
 - a. At the form level, the summary statistics for the b -parameter estimates (location difficulty) and d -parameter estimates (step difficulty) were examined, including the mean, standard deviation, median, minimum, maximum, and goodness-of-fit.
 - b. At the item level, statistics of individual items were examined, including item difficulty estimates, model-fit statistics, and the order-of-step parameters.
5. Items that did not perform as expected were flagged. All flagged items were discussed thoroughly with the CDE to decide whether those items should be removed from calibration or whether the scoring categories need to be collapsed.

As a result of consultation with the CDE, no items used during the 2017–18 CAA administration were removed from the analysis and no categories were collapsed.

The calibration process was paralleled by two ETS psychometricians to ensure quality and accuracy of results. Specifically, two psychometricians independently created flexMIRT control files and ran the same input data files and then compared the calibration results. Any differences in the output were investigated. Refer to subsection [9.3 Quality Control of Psychometric Processes](#) for more details of this procedure.

8.3.2.2. Linking the Item Parameters

The new items in the 2017–18 CAA tests for grades three through eight and grade eleven are linked to a calibrated item pool using a common-item nonequivalent groups design (Kolen & Brennan, 2004). The “base” or “reference” scales for the CAA were established based on data from the 2015–16 administration. The 2017–18 items were placed on the reference 2015–16 scale by using a set of linking items (i.e., anchor set) selected from the 2015–16 and 2016–17 calibrated item pool and readministered in 2017–18 for each grade.

After IRT calibration was performed with the 2017–18 items, the complete set of anchor items was used to calculate the linking constants to place the 2017–18 item parameters onto the 2015–16 scale by using the mean-to-mean method described in the next subsection. The linking process was carried out iteratively by inspecting differences between the transformed new and reference estimates for the anchor items and by removing items for which the item difficulty estimates changed significantly; this is called the robust-z procedure. Robust-z is also described in more detail in a subsequent subsection.

8.3.2.2.1. Mean-to-Mean Transformation

The item difficulty estimates from the 2017–18 calibration may not be comparable to those from the 2015–16 calibration. The 2017–18 difficulty estimates need to be transformed onto the reference scale in order to make them comparable to the item bank parameters. The item bank parameters were either calibrated in 2015–16 or calibrated in 2016–17 and then linked back to the 2015–16 scale. If an anchor item was used in both the 2015–16 and 2016–17 administrations, then the more recent statistics were used as the item bank parameters.

The mean-to-mean transformation assumes that the item bank and the 2017–18 difficulty values differ by a constant; that is, the item bank and 2017–18 difficulty values can be made comparable by adding the same constant for all items. If this assumption is correct, then that constant is the difference between the means of the item bank and 2017–18 difficulty values for the anchor items.

An iterative procedure is implemented to calculate the linking constants using common items across the 2015–16 and 2016–17 administrations and 2017–18 administration. For each iteration of linking constants computation, the procedure described in subsection [8.3.2.2.2 Robust-Z Procedure](#) is intended to inspect the differences between the transformed new (2017–18) and reference estimates (2015–16 or 2016–17) for the anchor items, and remove anchor items for which the item difficulty estimates changed significantly.

There are nine steps involved in making mean-to-mean transformation.

1. Identify the anchor items in both the item bank (2015–16 or 2016–17 administration) and the 2017–18 administration.
2. Obtain the item difficulty parameters (*b*-values) of these anchor items from the item bank that are on the reference scale.

3. Obtain the item difficulty parameters (b -values) of these anchor items from the calibration of the 2017–18 administration.
4. Calculate the average item difficulty for the anchor set on the reference scale.
5. Calculate the average item difficulty for the anchor set from the calibration from the 2017–18 administration.
6. Obtain the transformation constant by taking the difference between the two average item difficulties (b -values), using the average item difficulty for the anchor set on the reference scale subtracting the average item difficulty for the anchor set from the calibration of the 2017–18 administration.
7. Obtain a set of adjusted item difficulty parameters (b -values) by applying the linking constant to the item difficulty parameters of the anchor items from the 2017–18 administration.
8. Remove anchor items by following the procedure as described in subsection [8.3.2.2.2 Robust-Z Procedure](#). For the first iteration, the anchor set includes all anchor items, while for the following iterations, the anchor set includes the remaining anchor items after removing unstable anchors one-by-one.
9. Repeat steps 1 through 8 until no more items are identified with significant differences between the adjusted new and reference item difficulty parameter values.

[Table 8.4](#) shows a summary of the procedure described previously, which includes the number of all anchor items at the beginning, the number of anchor items that are removed as a result of mean-to-mean transformation and robust-z procedure, the remaining anchor items, and the linking constants of the final iteration of each test.

Table 8.4 Final Linking Summary

Content Area and Grade	Number of Items in Initial Anchor Set	Number of Items Removed from the Anchor Set	Number of Items in Final Linking Set	Linking Constant
ELA 3	32	7	25	0.0917
ELA 4	36	8	28	0.0731
ELA 5	28	4	24	0.1139
ELA 6	27	5	22	0.0604
ELA 7	36	7	29	0.0462
ELA 8	28	5	23	0.0734
ELA 11	34	7	27	0.2154

Content Area and Grade	Number of Items in Initial Anchor Set	Number of Items Removed from the Anchor Set	Number of Items in Final Linking Set	Linking Constant
Mathematics 3	45	7	38	0.0956
Mathematics 4	38	3	35	-0.0094
Mathematics 5	45	9	36	0.0672
Mathematics 6	43	9	34	0.0818
Mathematics 7	49	10	39	0.0361
Mathematics 8	45	7	38	0.0670
Mathematics 11	49	10	39	0.0117

[Table 8.5](#) presents the summary statistics of the final equating and linking results after items with unstable parameters are detected and removed from the anchor set. The statistics provide the number of remaining items in the final anchor set, average item difficulties of the anchor set both in the item bank and from the 2017–18 administration, along with their differences, as well as the criteria for evaluating the differences.

Table 8.5 Linked Item Parameter Results

Content Area and Grade	N Anchor Items	Item Bank Baseline Scale Average <i>b</i> -parameter	Linked 2017–18 Average <i>b</i> -Parameter	Difference of Average <i>b</i> -parameters	Criteria for the Acceptable Difference
ELA 3	32	-0.47	-0.39	-0.08	< 0.1
ELA 4	36	-0.23	-0.19	-0.03	< 0.1
ELA 5	28	-0.44	-0.48	0.04	< 0.1
ELA 6	27	-0.38	-0.42	0.05	< 0.1
ELA 7	36	-0.19	-0.18	-0.01	< 0.1
ELA 8	28	-0.12	-0.15	0.03	< 0.1
ELA 11	34	-0.12	-0.04	-0.08	< 0.1
Mathematics 3	45	0.25	0.28	-0.03	< 0.1
Mathematics 4	38	0.07	0.06	0.02	< 0.1
Mathematics 5	45	0.14	0.23	-0.10	< 0.1
Mathematics 6	43	0.27	0.26	0.02	< 0.1

Content Area and Grade	N Anchor Items	Item Bank Baseline Scale Average <i>b</i> -parameter	Linked 2017–18 Average <i>b</i> -Parameter	Difference of Average <i>b</i> -parameters	Criteria for the Acceptable Difference
Mathematics 7	49	0.15	0.14	0.01	< 0.1
Mathematics 8	45	0.11	0.17	-0.06	< 0.1
Mathematics 11	49	0.05	0.07	-0.01	< 0.1

For the 2017–18 CAA administration, 20 embedded field-test items were administered for each content area and grade. The field-test items were included in 2017–18 item concurrent calibration with the operational items. All field-test item parameters were then linked to the 2015–16 base scale by applying the linking constants in [Table 8.4](#).

8.3.2.2.2. Robust-Z Procedure

To identify any unstable anchor items, ETS utilized an outlier detection procedure based on the “robust-z” statistic (Huynh, 2000; Huynh & Rawls, 2009). In this application, robust-z listed, as described in equation 8.5, was calculated based on the distribution of the difficulty difference for the anchor items between the item bank and the 2017–18 administration.

$$z = \frac{|D - Md_D|}{0.74 \times IQR} \quad (8.5)$$

where,

D is the difference between the reference and transformed new item difficulty of an anchor item,

Md_D is the median of a distribution of D for all anchor items, and

IQR is the interquartile range of a distribution of D for all anchor items, which is defined as the difference between the third quartile (Q3) and the first quartile (Q1) when all the D values are rank-ordered.

A large value of this statistic for any anchor item indicates that the item bank difficulty parameter and the linked 2017–18 difficulty parameter for that item differed substantially.

The criterion for removing anchor items is that the robust-z value is greater than 1.645. One anchor item was removed at each iteration. The following criteria were evaluated at each iteration:

- The correlation between the item bank and 2017–18 difficulty estimates for the anchor sets should be no less than .95.
- The ratio of standard deviations of the item bank and 2017–18 difficulty estimates for the anchor items should be between .95 and 1.1.

After each iteration, the mean difficulty difference of the anchor sets between the item bank and the 2017–18 administrations was recomputed based on the remaining anchor items. Once the final anchor item set was obtained, ETS discussed its psychometric characteristics with the CDE and received approval from the CDE. Removed anchor items were not used in the computation of the linking constants but were still included in calibration and deriving raw-to-theta conversions.

[Figure 8.B.1](#) through [Figure 8.B.14](#) in [appendix 8.B](#) provide scatterplots that show the comparison between two sets of item parameters for a common set of anchor items, one being the item parameters on the reference scale from the item bank and the other the item parameters that were calibrated in 2017–18 calibrations and linked back to the reference scale. The removed anchor items are included in the scatterplots.

8.3.2.3. Scaling the Scores

The number-correct scores (raw scores) on each new form are transformed to scale scores on the reference scale (i.e., the 2015–16 baseline scale) by a three-step procedure. First, the new item difficulty estimates for each test are transformed to the reference year scale, as described in subsection [8.3.2.2.1 Mean-to-Mean Transformation](#). Then, the new form number-correct scores (raw scores) are transformed to ability (theta) scores on the reference scale by the inverse test characteristic curve procedure described in the next subsection, 8.3.2.3.1. Finally, these ability (theta) scores are transformed to scale scores through the linear transformation described in subsection [8.3.2.3.2](#). The requirements that are particularly applied to the CAA reporting scale are also listed in subsection [8.3.2.3.2](#).

8.3.2.3.1. Inverse Test Characteristic Curve (TCC) Procedure

After all the item difficulty estimates are transformed to the reference scale derived from the 2015–16 administration, students' overall ability estimates can be derived from the input data file that was described in subsection [8.3.2.1.1 Data Preparation](#), through the IRT inverse TCC method (Stocking, 1996). This method transforms the sum of the student's item scores into an ability estimate. That estimate is the value that makes the sum of the expected scores on the items administered to the student equal to the sum of the scores that the student actually received on those items.

The TCC expresses the expected total score on a set of items as a function of the student's ability, which is shown in equation 8.6:

$$\xi(\theta) = \sum_{i=1}^{ndich} P_i(\theta) + \sum_{j=1}^{npoly} \sum_{x=1}^m s_{xj} P_{xj}(\theta) \quad (8.6)$$

where,

ndich is the number of dichotomous items in the test,

$P_i(\theta)$ is the probability of a correct response to item *i* at ability θ on the dichotomous item in equation 8.4,

npoly is the number of polytomous items in the test,

m is the number of score categories for each polytomous item,

s_{xj} is the value for score category *x* for the polytomous item *j*,

$P_{xj}(\theta)$ is the probability that an examinee with ability θ obtains score s_x on the polytomous item *j* in equation 8.4, and

$\xi(\theta)$ is the corresponding expected total score.

8.3.2.3.2. Transformation from Theta Scores to Scale Scores

Students' ability estimates (theta scores) were expressed on the scale score metric by applying the appropriate linear transformation with the applicable slope and intercept for each content area and grade level as described in equation 8.7. The scale score transformations are integrated with the scale score threshold for Level 2 and Level 3 that were approved by California State Board of Education (SBE) after standard setting. [Table 6.2](#) on page [88](#) and [Table 6.3](#) on page [89](#) show the standard-setting threshold scores.

$$\text{Scale Score} = \text{Intercept} + \text{Slope} \times \hat{\theta} \quad (8.7)$$

where,

$\hat{\theta}$ represents student ability.

The slope and intercept are calculated in equations 8.8 and 8.9 for the Level 2—Alternate and Level 3—Alternate thresholds that were set as 45 and 60, respectively.

$$\text{Slope} = \frac{60 - 45}{\hat{\theta}_{\text{Level3}} - \hat{\theta}_{\text{Level2}}} \quad (8.8)$$

$$\text{Intercept} = 60 - \hat{\theta}_{\text{Level3}} \times \left(\frac{60 - 45}{\hat{\theta}_{\text{Level3}} - \hat{\theta}_{\text{Level2}}} \right) \quad (8.9)$$

where,

$\hat{\theta}_{\text{Level3}}$ represents the threshold score for Level 3—Alternate on the theta scale, and

$\hat{\theta}_{\text{Level2}}$ represents the threshold score for Level 2—Alternate on the theta scale.

The slopes and intercepts for each grade and content are shown in [Table 8.6](#). Also refer to subsection [7.1.3 Scale Scores for the Total Assessment](#) for the special requirements for the CAA reporting scale.

Table 8.6 Slopes and Intercepts That Convert Theta Score to Reporting Scale Scores

Content Area and Grade	Threshold Theta Score for Level 2—Alternate	Threshold Theta Score for Level 3—Alternate	Reporting Scale Score for Level 2—Alternate	Reporting Scale Score for Level 3—Alternate	Slope	Intercept
ELA 3	-0.2	0.8	45	60	15.00	48.0
ELA 4	0.0	1.0	45	60	15.00	45.0
ELA 5	0.0	1.0	45	60	15.00	45.0
ELA 6	0.0	1.2	45	60	12.50	45.0

Content Area and Grade	Threshold Theta Score for Level 2—Alternate	Threshold Theta Score for Level 3—Alternate	Reporting Scale Score for Level 2—Alternate	Reporting Scale Score for Level 3—Alternate	Slope	Intercept
ELA 7	0.0	1.0	45	60	15.00	45.0
ELA 8	-0.2	1.0	45	60	12.50	47.5
ELA 11	-0.2	1.0	45	60	12.50	47.5
Mathematics 3	0.2	1.0	45	60	18.75	41.3
Mathematics 4	0.2	1.0	45	60	18.75	41.3
Mathematics 5	0.2	1.0	45	60	18.75	41.3
Mathematics 6	0.2	1.0	45	60	18.75	41.3
Mathematics 7	0.2	1.0	45	60	18.75	41.3
Mathematics 8	0.2	1.0	45	60	18.75	41.3
Mathematics 11	0.2	1.0	45	60	18.75	41.3

The 2017–18 student ability estimates that are derived from the IRT models using the linked item parameters are converted to the established score scales using the procedures and conversion constants described previously. The scale scores can be found through the raw-to-scale score conversion tables presented in [Table 7.B.1](#) through [Table 7.B.14](#) in [appendix 7.B](#).

8.3.3. Summaries of Linked IRT *b*-Parameters

Once the 2017–18 IRT *b*-parameters were placed on the 2015–16 baseline scale for CAAs at all grade levels for ELA and mathematics, analyses were performed to assess the overall test difficulty and the distribution of item difficulty.

The overall summary of the linked IRT *b*-value estimates for 2017–18 CAAs for ELA and mathematics calibration is shown in [Table 8.7](#). The mean, standard deviation (SD), minimum, and maximum values are presented, in addition to the number of items for each test.

Table 8.7 IRT Linked Parameter Estimates for All ELA and Mathematics Items

Content Area and Grade	Number of Items	Average of <i>b</i> -value	SD <i>b</i> -value	Minimum <i>b</i> -value	Maximum <i>b</i> -value
ELA 3	79	-0.3628	0.8599	-2.3055	1.3617
ELA 4	71	-0.3494	0.8753	-2.0914	1.7066
ELA 5	75	-0.4997	0.9194	-2.2502	1.7626
ELA 6	76	-0.4219	0.7985	-1.7819	1.6361
ELA 7	74	-0.3076	0.9408	-2.1068	2.7420
ELA 8	62	-0.3713	0.7867	-2.2501	1.2406
ELA 11	64	-0.1574	0.8212	-1.5476	2.2196
Mathematics 3	95	0.2386	0.8071	-1.0350	2.8350
Mathematics 4	91	0.2700	0.8425	-1.4787	3.3489
Mathematics 5	106	0.3341	0.7679	-1.4594	2.5154
Mathematics 6	82	0.1985	0.5676	-0.8342	2.1394
Mathematics 7	85	0.1356	0.7648	-1.4418	2.4216
Mathematics 8	79	0.1036	0.7324	-1.5089	1.7651
Mathematics 11	78	0.1237	0.7677	-1.1774	1.8294

[Table 8.C.1](#) through [Table 8.C.14](#) in [appendix 8.C](#) provide the linked IRT difficulty and step parameter estimates at the item level for each grade level for ELA and mathematics.

[Table 8.C.15](#) through [Table 8.C.18](#) present the summary statistics (i.e., mean, SD, minimum, maximum, and median) of the IRT *b*-values for all items in the test and also present the summary statistics of linked IRT *b*-value by tier level (refer to subsection [4.2.1.1 Tiered Items](#) for discussion of tier levels). In addition, the distributions of the linked IRT *b*-values of all operational items and embedded field-test items conditional on test stage and item tier level are provided in [Table 8.C.19](#) through [Table 8.C.32](#), which start on page [363](#).

8.3.4. Evaluation of Equating

As described in subsection [8.3.2 Equating](#), calibrations for the 2017–18 CAAs for ELA and mathematics were linked to the reference scale of 2015–16 through mean-to-mean transformation. As mentioned previously, two indices were used for CAA to evaluate the quality of such linking procedures: the ratio of the standard deviations (RSD) of the two sets of item difficulty estimates for the anchor items (i.e., the 2015–16 and 2017–18 estimates), and the correlation (CORR) between the two sets of item difficulty estimates for the anchor items (Huynh, 2009). If the correlation (CORR) is at least 0.95 and the RSD is between 0.9 and 1.1, the linking results are considered acceptable, and all anchor items are regarded as stable in the linking process.

[Table 8.8](#) presents the total number of operational items, the number of remaining anchor items after robust-*z* evaluation, the percentage of remaining anchor items out of all the operational items, the correlation between the final set of the transformed new (2017–18) and reference (2015–16) difficulty estimates for the anchor items, and the RSD between the final set of the transformed new (2017–18) and reference (2015–16) item parameters for anchor items.

Table 8.8 Evaluation of Anchor Set (Common Items) Between 2016–17 and 2015–16

Content Area and Grade	Number of Unique Operational Items	Number of Remained Anchor Items	Percentage of Remained Anchors out of All Operational Items	Correlation Between Item Bank Item Parameters and 2017–18 Item Parameters	RSD of Item Parameters Between Item Bank and 2017–18 Administration
ELA 3	51	25	49%	0.9873	1.0464
ELA 4	51	28	55%	0.9768	0.9594
ELA 5	53	24	45%	0.9834	0.9083
ELA 6	54	22	41%	0.9849	0.9459
ELA 7	54	29	54%	0.9879	0.9154
ELA 8	48	23	48%	0.9791	1.0038
ELA 11	52	27	52%	0.9849	0.9291
Mathematics 3	53	38	72%	0.9861	1.0122
Mathematics 4	51	35	69%	0.9775	0.9566
Mathematics 5	54	36	67%	0.9848	0.9838
Mathematics 6	48	34	71%	0.9827	0.9024
Mathematics 7	49	39	80%	0.9787	0.9378
Mathematics 8	49	38	78%	0.9869	0.9849
Mathematics 11	50	39	78%	0.9749	1.0005

8.4. Omission and Completion Rates

8.4.1. Omit Rates

For both dichotomous and polytomous items, examining item omission and completion is useful for identifying potential problems with test features such as testing time and item or test layout. Typically, given that students have an adequate amount of testing time, approximately 95 percent of students should attempt to answer each question on the test. Two types of missing responses are possible for CAAs for ELA and mathematics:

1. An item is considered “omit”: An item that has been presented but has not been answered (i.e., left blank) in the middle of an administered assessment wherein the student has viewed and responded to successive items.
2. An item is considered “not presented” or “omitted-by-design”: A set of items that are not presented to the student. For example, students may experience significant cognitive challenges on the Stage 1 items and be exited from the test at the end of Stage 1 without moving on to Stage 2. For these early exit cases, all items in Stage 2 are “not presented” and treated as incorrect when calculating an overall score.

[Table 8.D.1](#) through [Table 8.D.14](#) in [appendix 8.D](#) provide the item omit rates. Overall, students assigned to the easy Stage 2 module had higher omit rates on items administered to them than students assigned to other modules had on their items. This pattern suggests that students with the most severe cognitive disabilities experienced significant challenges completing a version of the CAA that consisted primarily of the most accessible content.

The items with high omit rates were flagged. Omit rates for polytomous items tended to be higher than for dichotomous items. Overall, the omit rate for flagging individual items was 5 percent for selected-response items and 15 percent for constructed-response items. An omit response was scored as zero and included in the N-count for that item (i.e., the number of students who answered the item) when calculating item statistics. A response that is considered omit-by-design was not scored or included in the N-count for the item.

[Table 8.D.1](#) through [Table 8.D.14](#) present the relationship between the omit rate and IRT item difficulty for each item. [Table 8.D.15](#) and [Table 8.D.16](#) present the average number of omitted items for each form and the number of items in each module for each form.

8.4.2. Completion Rates

Completion rates indicate the proportion of students who complete a certain number of items on the test. A student's record for the test is not considered complete unless the student answered at least four items.

[Table 8.D.17](#) through [Table 8.D.24](#) present the distribution of total number of answered items by performance level. Most students answered all 29 items, including the four embedded field-test items.

8.5. Differential Item Functioning (DIF)

DIF analyses were conducted for 2017–18 CAA items with sufficient sample sizes. The minimum sample size requirements for the DIF analyses were 400 in the combined focal and reference groups and 100 in the smaller of the two groups. These sample sizes are based on standard operating procedures for DIF analysis at ETS.

If an item performs differentially across identifiable student groups—e.g., gender or ethnicity—when students are matched on ability, the item may be measuring something else other than the intended construct (i.e., possible evidence of bias). It is important, however, to recognize that item performance differences flagged for DIF might be related to actual differences in relevant knowledge or skills between student groups (i.e., impact) or statistical Type I error, which might falsely find DIF in an item. As a result, DIF analysis is used mainly as a statistical tool to identify *potential* item bias. Subsequent reviews by content experts and bias and sensitivity experts are required to determine the source and meaning of performance differences.

8.5.1. Dichotomous Items

The Mantel-Haenszel (MH) DIF statistic was calculated for dichotomous items (Mantel & Haenszel, 1959; Holland & Thayer, 1985). Using the IRT theta score as the criterion score, students in each theta score category in the focal group (e.g., females) are compared with examinees in the same theta score category in the reference group (e.g., males). The common odds ratio is estimated across all categories of matched student ability using the formula in equation 8.10 (Dorans & Holland, 1993). The resulting estimate is interpreted as the relative likelihood of success on a particular item for members of two groups when matched on ability.

$$\alpha_{MH} = \frac{\left(\sum_m R_{rm} \frac{W_{fm}}{N_{tm}} \right)}{\left(\sum_m R_{fm} \frac{W_{rm}}{N_{tm}} \right)} \quad (8.10)$$

where,

m indexes the score categories,

R_{rm} is the number of students in the reference group who answer the item correctly,

W_{fm} is the number of students in the focal group who answer the item incorrectly,

N_{tm} is the total number of students,

R_{fm} is the number of students in the focal group who answer the item correctly, and

W_{rm} is the number of students in the reference group who answer the item incorrectly.

To facilitate the interpretation of MH results, the common odds ratio is frequently transformed to the delta scale using the following formula (Holland & Thayer, 1985):

$$\text{MHD-DIF} = -2.35 \ln[\alpha_{MH}] \quad (8.11)$$

Positive values indicate DIF in favor of the focal group—i.e., positive DIF items are differentially easier for the focal group—whereas negative values indicate DIF in favor of the reference group (i.e., negative DIF items are differentially easier for the reference group).

8.5.2. Polytomous Items

The standardization DIF (Dorans & Schmitt, 1993; Zwirk, Thayer & Mazzeo, 1997; Dorans, 2013) is used in conjunction with the Mantel chi-square statistic (Mantel, 1963; Mantel & Haenszel, 1959) to identify polytomous items with DIF; the former measures the size of the DIF while the latter indicates the significance level of the DIF. The standardized mean difference (SMD) compares the item means of the two groups after adjusting for differences in the distribution of students across the values of the matching variable and is calculated using the following formula:

$$SMD = \frac{\sum_{m=1}^M N_{fm} \times (E_f(Y | X = m) - E_r(Y | X = m))}{\sum_{m=1}^M N_{fm}} \quad (8.12)$$

where,

X is the criterion score,

Y is the item score,

M is the number of score categories on X ,

N_{rm} is the number of students in the reference group in score category m ,

N_{fm} is the number of students in the focal group in score category m ,

E_r is the expected item score for the reference group, and

E_f is the expected item score for the focal group.

A positive SMD value means that, conditional on the criterion score, the focal group has a higher mean item score than the reference group. In contrast, a negative SMD value means that, conditional upon the criterion score, the focal group has a lower mean item score than the reference group.

8.5.3. Classification

Based on the DIF statistics and significance tests, items are classified into three categories and assigned values of A, B, or C (Holland & Wainer, 1993). Category A items contain negligible DIF, Category B items exhibit slight to moderate DIF, and Category C items possess moderate to large DIF values.

The flagging criteria for dichotomous items are presented in [Table 8.9](#); the flagging criteria for polytomous items are provided in [Table 8.10](#).

Table 8.9 DIF Categories for Dichotomous Items

DIF Category	Criteria
A (negligible)	<ul style="list-style-type: none"> • Absolute value of MH D-DIF is not significantly different from zero, or is less than one. • Positive values are classified as “A+” and negative values as “A-.”
B (moderate)	<ul style="list-style-type: none"> • Absolute value of MH D-DIF is significantly different from zero but not from one, and is at least one; OR • Absolute value of MH D-DIF is significantly different from one, but is less than 1.5. • Positive values are classified as “B+” and negative values as “B-.”
C (large)	<ul style="list-style-type: none"> • Absolute value of MH D-DIF is significantly different from one, and is at least 1.5. • Positive values are classified as “C+” and negative values as “C-.”

Table 8.10 DIF Categories for Polytomous Items

DIF Category	Criteria
A (negligible)	• Mantel Chi-square p value > 0.05 or $ SMD/SD \leq 0.17$
B (moderate)	• Mantel Chi-square p value < 0.05 or $0.17 < SMD/SD \leq 0.25$
C (large)	• Mantel Chi-square p value < 0.05 or $ SMD/SD > 0.25$

Note: SMD = standardized DIF; SD = total group standard deviation of item score.

DIF analyses were conducted on each test for designated comparison groups on the basis of demographic variables, including gender, race or ethnicity, and primary disabilities, if the number of students in the group was sufficient. These comparison groups are specified in [Table 8.11](#).

Table 8.11 Student Groups for DIF Comparison

DIF Type	Reference Group	Focal Group
Gender	Male	<ul style="list-style-type: none"> • Female
Race or Ethnicity	White	<ul style="list-style-type: none"> • American Indian or Alaska Native * • Asian • Black or African American • Filipino • Hispanic or Latino • Native Hawaiian or Other Pacific Islander * • Two or more races
Disability	Intellectual Disability	<ul style="list-style-type: none"> • Autism • Deaf-blindness * • Emotional disturbance * • Hearing Impairment * • Multiple disabilities • Orthopedic impairment • Other health impairment • Specific learning disability • Speech or language impairment • Traumatic brain injury * • Visual Impairment*

* DIF analysis was not performed due to insufficient sample sizes.

The DIF results can be found in [appendix 8.E](#). In the DIF results tables, data in the *N* column show the number of item occurrences with sufficient sample sizes to be included in DIF analyses. In addition, “NA” indicates that either the DIF analysis did not classify any items in the particular DIF category, or the DIF analysis was not performed due to insufficient sample size. Note that “NA” occurs mostly for items at Stage 2 due to the small sample sizes for easy and hard modules at Stage 2.

8.6. Reliability Analyses

Reliability is the extent to which differences in test scores reflect true differences in the knowledge, ability, or skill being tested rather than fluctuations due to chance. Thus, reliability is the consistency of scores across conditions that do not differ systematically and only contain random measurement errors. In statistical terms, the variance in the distributions of test scores—essentially, the differences among individuals—is due partly to real differences in the knowledge, skill, or ability being tested (true variance) and due partly to measurement error inherent in the measurement process (error variance). The reliability coefficient is an estimate of the proportion of the total variance that is true variance.

Reliability coefficients usually range from 0 to 1. The higher the reliability coefficient for a set of scores, the more likely individuals are to obtain very similar scores upon repeated testing occasions (assuming there is no memory or practice effect) if the students do not change in their level of the knowledge or skills measured by the test.

There are several different ways of estimating reliability. Marginal reliability (Green, Bock, Humphreys, Linn, & Reckase, 1984) was calculated because it was more appropriate for the multistage testing (MST) design. More details can be found in the next subsection, [8.6.1](#).

The standard error of measurement (SEM) is a measure of the extent to which students' scores tend to differ from their true scores. The larger the SEM, the more the variability of a student's observed scores across repeated testing. Observed scores with large SEMs pose a challenge to the valid interpretation of test scores.

Also reported for CAA is the reliability of classification, which is an estimate of the proportion of students who are accurately and consistently classified into achievement levels. There are two kinds of classification reliability statistics: decision accuracy and decision consistency. Decision accuracy is the agreement between the classifications actually made and the classifications that would be made if the test scores were perfectly reliable. Decision consistency is the agreement between the classifications that would be made on two test forms.

8.6.1. Internal Consistency Reliability

In classical test theory, the reliability coefficient can be defined as the squared correlation between the observed score and the true score, which is equal to the correlation between parallel observed scores (Lord and Novick, 1968, p.61). In applied settings, the requirement of repeated administrations is impractical, and methodologies estimating reliability from relationships among student performances on items within a single test form are often used. Coefficient alpha (Cronbach, 1951) is among the most common of these methodologies.

However, these classical test theory–based reliability indices are not directly applicable to an MST scenario because each student takes one of the four pathways based on his or her ability. Therefore, an IRT-based approach called marginal reliability (Green, Bock, Humphreys, Linn, & Reckase, 1984) is used to estimate the reliability of MST scores. The estimates of reliability coefficients reported here are for item response model-based ability estimates. Because the scale score is a linear transformation of the ability estimate, the reliability coefficient of the ability estimates will also apply to the scale scores based on them.

This reliability coefficient for theta estimates, $\rho_{\hat{\theta}\hat{\theta}}$ is defined, based on the single test administration, as shown in equation 8.13:

$$\rho_{\hat{\theta}\hat{\theta}} = 1 - \frac{M_{SEM^2_{\hat{\theta}}}}{S_{\hat{\theta}}^2} \quad (8.13)$$

where,

$\hat{\theta}$ is an ability estimate (i.e., theta score),

$M_{SEM^2_{\hat{\theta}}}$ is an average of the squared CSEM (i.e., error variances) at each value of the ability estimate, and

$S_{\hat{\theta}}^2$ is the measure of variance in ability estimates.

8.6.2. Standard Error of Measurement (SEM)

The SEM provides a measure of score instability on the scale score metric. The SEM is the square root of the error variance in the scores, i.e., the standard deviation of the distribution of the differences between students' observed scores and their true scores. The SEM is calculated by:

$$SEM = s_t \sqrt{1 - \rho_{\hat{\theta}\hat{\theta}}}$$
 (8.14)

where,

$\rho_{\hat{\theta}\hat{\theta}}$ is the reliability estimated in equation 8.13, and

S_t is the standard deviation of the total score (either theta or scale score).

The SEM is useful in determining the confidence interval (CI) that likely captures a student's true score. A student's true score can be thought of as the mean of observed scores a student would earn over an infinite number of independent administrations of the test. Approximately 95 percent of the students will have scores within the range of their true scores: -1.96 SEMs to their true scores $+1.96$ SEMs (Crocker & Algina, 1986). For example, if a student's observed score on a given test equals 345 points, and the SEM equals 5, one can be 95 percent confident that the student's true score lies between 335 and 355 points (i.e., 345 ± 10).

[Table 8.12](#) presents the total score reliability for theta, and the mean, SD, and SEM of both thetas and scale scores for each of the 14 tests, along with the number of student results upon which those analyses were performed. Note that the reliability is for the whole test on the theta score scale.

Table 8.12 Summary Statistics for Scale Scores, Theta Scores, and Marginal Reliability

Content Area and Grade	N Unique Operational Items	No. of Students	Marginal Reliability	Scale Score Mean	Scale Score SD	Scale Score SEM	Theta Score Mean	Theta Score SD	Theta Score SEM
ELA 3	51	4,127	0.88	349.17	17.77	6.14	0.07	1.26	0.44
ELA 4	51	4,455	0.88	445.76	16.86	5.81	0.03	1.21	0.42
ELA 5	53	4,465	0.88	546.45	16.55	5.72	0.07	1.19	0.41
ELA 6	54	4,579	0.86	645.49	13.07	4.89	0.03	1.06	0.40
ELA 7	54	4,557	0.89	745.21	17.50	5.76	-0.02	1.29	0.43
ELA 8	48	4,375	0.85	847.83	12.28	4.79	0.03	1.00	0.39
ELA 11	52	3,840	0.89	949.65	15.00	4.99	0.16	1.24	0.41

Content Area and Grade	N Unique Operational Items	No. of Students	Marginal Reliability	Scale Score Mean	Scale Score SD	Scale Score SEM	Theta Score Mean	Theta Score SD	Theta Score SEM
Mathematics 3	53	4,112	0.80	342.83	14.86	6.61	0.04	0.93	0.41
Mathematics 4	51	4,371	0.82	440.94	14.88	6.36	-0.04	0.88	0.38
Mathematics 5	54	4,373	0.82	542.19	15.03	6.44	0.02	0.93	0.40
Mathematics 6	48	4,386	0.75	642.48	13.48	6.79	0.04	0.83	0.42
Mathematics 7	49	4,523	0.82	741.70	14.99	6.37	-0.01	0.93	0.39
Mathematics 8	49	4,274	0.80	842.13	13.28	6.00	0.03	0.77	0.35
Mathematics 11	50	3,802	0.83	941.37	16.16	6.59	-0.04	1.01	0.41

The reliabilities and SEMs of the CAAs for ELA and mathematics were also examined for various student groups from the population. [Table 8.F.1](#) through [Table 8.F.16](#) present the reliabilities for the student groups based on gender, ethnicity, English-language fluency, economic status, migrant status, primary disability, accommodation, and designated support. [Table 8.F.17](#) and [Table 8.F.18](#) show reliabilities and SEMs for each of the five versions of grade-level ELA and mathematics assessments, respectively.

8.6.3. Standard Error of Measurement (SEM) for Theta Scores

For the CAAs for ELA and mathematics, theta scores are obtained through an IRT inverse test characteristic curve approach. The test information function (TIF) is the sum of information from each item on the test. The SEM is the standard deviation of the distribution of theta scores that the student would earn under different testing conditions. In IRT, the only differences taken into account in the SEM are those associated with different sets of items that could be presented to the student. In the framework of IRT, the SEM is the reciprocal of the square root of the test information function (TIF) based on the items taken by each student. The SEM for a student with proficiency θ_j is:

$$SEM(\theta_j) = \frac{1}{\sqrt{I(\theta_j)}} \quad (8.15)$$

where,

$I(\theta_j)$ is the test information for student j , and is calculated as

$$I(\theta_j) = \sum_{i=1}^n I_i(\theta_j) \quad (8.16)$$

where,

$I_i(\theta_j)$ is the item information of item i for student j .

Item information is calculated as

$$I_i(\theta_j) = [s_{i2}(\theta_j) - s_i^2(\theta_j)] \quad (8.17)$$

where,

$s_i(\theta_j)$ is the expected item score for item i on a theta score θ_j calculated as

$$s_i(\theta_j) = \sum_{h=0}^{n_i} h p_{ih}(\theta_j), \quad (8.18)$$

and

$$s_{i2}(\theta_j) = \sum_{h=0}^{n_i} h^2 p_{ih}(\theta_j) \quad (8.19)$$

where,

$p_{ih}(\theta_j)$ is the probability of an examinee with θ_j getting score h on item i , the computation of which is shown in equation 8.4 on page [213](#), and

n_i is the maximum number of score points for item i .

The theta score and theta CSEM are shown in [Table 8.F.19](#) through [Table 8.F.32](#).

8.6.4. Conditional Standard Errors of Measurement (CSEM) for Scale Scores

CSEMs for scale scores are computed by transforming CSEMs of theta scores onto the reporting scale. Refer to subsection [8.3.2.3.2 Transformation from Theta Scores to Scale Scores](#) for scaling factors of transformation. A student's CSEM under the IRT framework is equal to the reciprocal of the square root of the TIF multiplied by the scaling factor a :

$$\text{CSEM(SS)} = \frac{1}{\sqrt{I(\hat{\theta})}} a \quad (8.20)$$

where,

$$SS = a \times \theta + b$$

CSEM(SS) is the conditional standard error of measurement on scale score scale,

$I(\hat{\theta})$ is the test information function at ability level $\hat{\theta}$ as shown in equations 8.17, 8.18, and 8.19, and

a is the scaling factor (the slope) needed to transform theta to the scale score metric.

The value of a varies by content area (refer to the slope values in [Table 8.6](#)).

CSEMs vary across the scale, and are typically smaller in scale score units toward the center of the scale where more items are located, whereas larger at the extreme ends of the scale. When a test has cut scores, it is important to provide CSEMs at the cut scores. [Table 8.13](#) presents the scale score CSEMs at the lowest score required for a student to be classified in the Level 2—Alternate and Level 3—Alternate achievement levels for each CAA.

Table 8.13 Scale Score CSEM at Achievement-Level Threshold

Content Area and Grade	Level 2—Alternate Scale Score Threshold	Level 2—Alternate CSEM	Level 3—Alternate Scale Score Threshold	Level 3—Alternate CSEM
ELA 3	345	5	360	6
ELA 4	445	6	460	6
ELA 5	545	5	560	6
ELA 6	645	5	660	6
ELA 7	745	6	760	6
ELA 8	845	4	860	5
ELA 11	945	4	960	5
Mathematics 3	345	6	360	7
Mathematics 4	445	7	460	7
Mathematics 5	545	6	560	7
Mathematics 6	645	6	660	7
Mathematics 7	745	6	760	7
Mathematics 8	845	6	860	7
Mathematics 11	945	6	960	7

The scale score and scale score CSEM are shown in [Table 8.F.19](#) through [Table 8.F.32](#).

8.6.5. Decision Classification Analyses

When an assessment uses achievement levels as the primary method to report test results, accuracy and consistency of decisions become key indicators about the quality of the assessment.

The methodology used for estimating the reliability of classification decisions (Livingston & Lewis, 1995) is implemented using the Educational Testing Service (ETS)-proprietary computer program RELCLASS-COMP (Version 4.14).

Decision accuracy describes the extent to which students are classified in the same way as they would be on the basis of the average of all possible forms of a test. Decision accuracy answers the question of how closely the actual classification of students, based on their single-form scores, agrees with the classification that would be made on the basis of their true scores, if their true scores could somehow be known.

Decision consistency describes the extent to which students are classified in the same way as they would be on the basis of a single form of a test other than the one for which data is available. Decision consistency answers the question of what the agreement is between the classifications based on two nonoverlapping, equally difficult forms of the test.

Reliability of classification at a cut score is estimated by combining the multivariate distribution at any particular cut score into a two-by-two table indicating whether the students are above or below the cut score and summing the entries in the diagonal. For both decision accuracy and decision consistency, the estimated proportion of classifications with exact agreement is the sum of the entries in the diagonal of a contingency table representing the multivariate distribution (refer to [Figure 8.1](#) and [Figure 8.2](#)). Decision consistency values are always lower than the corresponding decision accuracy values because in decision consistency, both of the classifications of the student are based on scores that depend on which form of the test the student took. In decision accuracy, only one of the classifications is based on a score that can vary in this way.

True status on all-forms average	Does not reach an achievement level	Reaches an achievement level
Does not reach an achievement level	Correct classification	Misclassification
Reaches an achievement level	Misclassification	Correct classification

Figure 8.1 Decision Accuracy for Reaching an Achievement Level on the All-Forms Average

Decision made on the form taken	Does not reach an achievement level	Reaches an achievement level
Does not reach an achievement level	Correct classification	Misclassification
Reaches an achievement level	Misclassification	Correct classification

Figure 8.2 Decision Consistency for Reaching an Achievement Level on a Hypothetical Alternate Form

The results of these analyses are presented in [Table 8.F.33](#) through [Table 8.F.60](#) in [appendix 8.F](#). Included are the contingency tables for both accuracy and consistency of the various achievement-level classifications.

8.7. Validity Evidence

Validity refers to the degree to which each interpretation or use of a test score is supported by the accumulated evidence (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014; ETS, 2014). It constitutes the central notion underlying the development, administration, scoring, and the uses and interpretations of test scores. The validation process does not rely on a single study or gathering only one type of evidence. Rather, validation involves multiple investigations and different kinds of supporting evidence (AERA, APA, & NCME, 2014; Cronbach, 1971; ETS, 2014; Kane, 2006). It begins with the test design and is implicit throughout the entire assessment process, which includes item development and field testing, analyses of items, test scaling and linking, scoring, reporting, and score usage.

In this subsection, the evidence gathered is presented to support the intended uses and interpretations of scores for the CAA. This subsection is organized primarily around the

principles prescribed by AERA, APA, and NCME's *Standards for Educational and Psychological Testing* (2014). These *Standards* require a clear definition of the purpose of the test, a description of the constructs to be assessed, and the population to be assessed, as well as how the scores are to be interpreted and used.

The *Standards* identify five kinds of evidence that can provide support for score interpretations and uses:

1. Evidence based on test content
2. Evidence based on relations to other variables
3. Evidence based on response processes
4. Evidence based on internal structure
5. Evidence based on the consequences of testing

The next subsection defines the purpose of the CAAs, followed by a description and discussion of different kinds of validity evidence that have been gathered.

8.7.1. Evidence in the Design of the CAAs

8.7.1.1. Purpose

The CAAs are designed to assess students with the most significant cognitive disabilities whose individualized education program (IEP) team has designated the use of an alternate assessment on the statewide summative assessments. The goals of the CAAs are to ensure that students with the most significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for postsecondary options.

8.7.1.2. The Constructs to Be Measured

The CAAs for ELA and mathematics are designed to show how well students perform relative to the Core Content Connectors (Connectors) for ELA and mathematics, which were developed by the National Center and State Collaborative (NCSC). These Connectors are content targets linked to the Common Core State Standards (CCSS) and yet are less complex than the CCSS, while focusing on the main academic content at each subject and grade level.

The Connectors illustrate the necessary knowledge and skills needed to reach the learning targets within the CCSS and the knowledge and skills needed at each grade level. The Connectors identify priorities in each content area to guide instruction for students in this population and for the alternate assessment.

Test blueprints are used to measure the Connectors. They also provide an operational definition of the construct to which each set of standards refers and define the following for each content area:

- Subject to be assessed
- Tasks to be presented
- Administration instructions to be given
- Rules used to score student responses

The test blueprints control as many aspects of the measurement procedure as possible so that the testing conditions will remain the same over test administrations (Cronbach, 1971) in order to minimize construct irrelevant score variance (Messick, 1989).

ETS developed all CAA for ELA and mathematics test items to conform to the SBE-approved Connectors and test blueprints (CDE, 2015a [ELA] and 2015b [mathematics]).

8.7.1.3. The Interpretations and Uses of the Scores

Overall student performance expressed as scale scores are generated for the CAAs for ELA and mathematics. The total score is also used to classify students in terms of their achievement level in the content area by grade.

The grade- and content-specific achievement level descriptors describe what students at each achievement level know and can do, by grade and content area. The achievement level descriptors reflect the level of expectation on students' performance, the specific content reflected in the CCSS and the Connectors, as well as the essential understandings (EUs). California educators gathered to develop the grade- and content-specific achievement level descriptors using the general PLDs, which provided the number of reporting levels and the general definition of each reporting level. The importance of the grade- and content-specific PLDs is that they define the knowledge or skill expectations at each achievement level on a functional basis, define the standards as they apply to threshold scores, and give standardized meaning to scores or score ranges.

A description of the uses and applications of the CAA for ELA and mathematics results is presented in [Chapter 7: Scoring and Reporting](#). Additional information can be found in the *2017–18 CAASPP Post-Test Guide* (CDE, 2017b).

The CAA test results have four primary purposes:

1. Help facilitate conversations between parents/guardians and teachers about student performance
2. Serve as a tool to help parents/guardians and teachers work together to improve student learning
3. Help staff from schools and local educational agencies identify strengths and areas that need improvement in their educational programs
4. Provide the public and policymakers with information about student achievement

More detailed descriptions regarding score use can be found in the *Education Code* Section 60602 web page at http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=EDC&division=4.&title=2.&part=33.&chapter=5.&article=1 (outside source).

8.7.1.4. Intended Test Population

Only eligible students may participate in the administration of the CAAs. Any student identified for alternate testing takes CAAs. IEP teams “shall determine when a child with a significant cognitive disability shall participate in an alternate assessment aligned with the alternate academic achievement standards.”¹⁰

8.7.2. Evidence Based on Test Content

Evidence based on test content refers to traditional forms of content validity evidence, such as the rating of test specifications and test items (Crocker, Miller, & Franks, 1989; Sireci, 1998), as well as alignment methods for educational tests that evaluate the interactions between curriculum frameworks, testing, and instruction (Rothman, Slattery, Vranek, & Resnick, 2002; Bhola, Impara & Buckendahl, 2003; Martone & Sireci, 2009).

¹⁰ S. 1177—114th Congress: Every Student Succeeds Act. 2015. Title 1, Part A, Subpart 1, Section 1111(b)(2)(D)(ii)(I)

With MST test design, an additional dimension of content validity evidence is to ensure that the pathways and combination of two stages produce, for individual students, test forms that conform to the test blueprint. The extent to which test forms administered in 2017–18 meet the blueprints is provided in [Chapter 4: Test Assembly](#), and in [Table 4.A.1](#) through [Table 4.A.14](#).

8.7.2.1. Description of the State Standards

The CAAs for ELA and mathematics are aligned with the alternate achievement standards, the Connectors, for ELA and mathematics. The purpose of the Connectors is to ensure that students with the most significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for postsecondary options. The Connectors illustrate the necessary knowledge and skills needed to reach the learning targets within the CCSS and the knowledge and skills needed in each grade. They also identify priorities in each content area to guide the instruction for students in this population and for the alternate assessment (NCSC, 2014a [Reading], 2014b [Writing], and 2014c [mathematics]).

8.7.2.2. Item Specifications

Item specifications describe the characteristics of items that are written to measure each content standard. The specifications for ELA and mathematics are described in [Chapter 3: Item Development and Review](#).

8.7.2.3. Module Selection and Pathway

The routing rules for the stages are designed to cover the alternate content standards-based blueprints in the assembly of MST forms. The general module routing approach is based on the routing rules (refer to [Chapter 4: Test Assembly](#)) that evaluate a module's contribution to each of these measures:

1. A measure of content match to the blueprint
2. A measure of overall test information
3. A measure of content complexity (tier)

8.7.2.4. Assessment Blueprints

The CAA test blueprints describe the content of the ELA and mathematics assessments for all grades tested and how that content is assessed. The test blueprints address the basic core content domains, the CCSS, the Connectors, and the essential understanding for each standard. Each test is described by a single blueprint. The degree to which test forms administered in 2017–18 meet the blueprint is provided in [Chapter 4: Test Assembly](#) and in [Table 4.A.1](#) through [Table 4.A.14](#).

8.7.2.5. Form Assembly Process

The content standards, blueprints, and routing rules are the basis for choosing items and modules for each assessment. Additionally, item difficulty and the content complexity of items are provided to evaluate the statistical characteristics of test forms. Refer to [Chapter 4: Test Assembly](#) for information on the test assembly process.

8.7.3. Evidence Based on Response Processes

Validity evidence based on response processes refers to “evidence concerning the fit between the construct and the detailed nature of performance or response actually engaged in by students” (AERA et al., 2014, p. 12). This type of evidence generally includes documentation of activities such as

- systematic observations of test response behavior,
- showing the relationships of items intended to require demonstrations or applications of knowledge and skills to other measures that require similar levels of cognitive complexity in the content (i.e., teacher ratings of student performance), and
- evaluation of the reasoning processes students employ when solving test items (Embretson, 1983; Messick, 1989).

This type of evidence is used to confirm that the CAAs are measuring the cognitive skills that are intended as the objects of measurement and are used by students to respond to the items, for example, the Survey of Student Characteristics (SSC) and Student Response Check described in subsection [5.1 Test Administration](#) in [chapter 5](#). Also, use of the SSC is planned as part of a research agenda, and the goal is to improve routing during the future administrations.

8.7.3.1. Analysis of Testing Time

Testing time for each administration can be evaluated for consistency by examining the expected response processes for the items presented to students. The length of time it takes students to complete a test is collected and analyzed to build a profile describing what a typical testing event looks like for each content area and grade. In addition, variability in testing time is investigated to determine whether a student's testing time should be viewed as unusual or irregular. It should be noted that the CAAs for ELA and mathematics are untimed tests.

The students with no item response and students who did not answer at least four items were removed from these analyses. The remaining testing population is partitioned into quartiles based on scale scores. These quartile groupings are not the same as the achievement levels.

Descriptive statistics of the time required to complete the total test are computed for each of the four quartile groups by content area and grade level.

Some cases of extremely long testing time may be attributed to students with special needs taking longer to complete the tests, or the test not being closed down properly. With that being said, the results should be interpreted with caution. The medians (50th percentile) are more meaningful in the interpretation of the time comparisons because medians are less impacted by extreme values than means.

[Table 8.G.1](#) and [Table 8.G.2](#), which start on page [498](#), provide the descriptive statistics for ELA and mathematics testing time for each test pathway, respectively. These tables include total testing time and percentile information for each test pathway. [Table 8.G.3](#) and [Table 8.G.4](#) present total testing time and percentile information at each student performance quartile level. The unit of testing time is minutes; for example, in [Table 8.G.3](#), the median of the testing time for the first quartile group (Q1) of ELA grade three is 27.19 minutes.

Overall, students at the lowest quartile level (Q1) have shorter testing times than students in the other quartile groups. The median total testing time generally increases as the quartile level increases from Q1 to Q4. ELA shows longer testing times than mathematics.

8.7.4. Evidence Based on Internal Structure

Internal structure evidence evaluates the strength or salience of the major dimensions underlying an assessment using indices of measurement precision such as DIF analysis, test reliability, decision accuracy and consistency, generalizability coefficients, conditional and unconditional SEMs, and TIFs.

8.7.4.1. Differential Item Functioning (DIF)

DIF analyses were conducted to assess differences in the item performance of groups of students who differ in their demographic characteristics. For both ELA and mathematics, few items were identified as having significant levels of DIF. Refer to subsection [8.5 Differential Item Functioning](#) for a description the DIF analyses and [appendix 8.E](#), where the results of the DIF analyses are reported.

8.7.4.2. Overall Reliability Estimates

The results of reliability analyses on the theta scores and scale score for each test are presented in [Table 8.12](#). The results indicate that the reliability estimates for all tests are moderately high, ranging from 0.75 to 0.89.

8.7.4.3. Student Groups Reliability Estimates

The reliabilities are also examined for various student groups. The student groups considered were based on gender, ethnicity, economic status, primary disability, migrant status, and English-language fluency. Reliability estimates and SEM information for the theta scores are reported for each student group in [Table 8.F.1](#) through [Table 8.F.16](#). This same data is presented for each of the five versions of the grade-level, content area assessments in [Table 8.F.17](#) (ELA) and [Table 8.F.18](#) (mathematics).

8.7.4.4. Reliability of Performance Classifications

The methodology used for estimating the reliability of classification decisions is described with the decision classification analyses in subsection [8.6.5 Decision Classification Analyses](#). The results of these analyses are presented in [Table 8.F.33](#) through [Table 8.F.60](#) in [appendix 8.F](#).

8.7.4.5. Correlations Between Content Area Test Scores

The degree to which students' content area test scores correlate as expected provides evidence that those scores are measuring the intended constructs. [Table 8.14](#) provides the correlations between scores on the ELA and mathematics tests and the number of students on which these correlations are based. Sample sizes for the individual tests are shown on the left. The correlations are provided in the upper right and are based on all students with valid scale scores for both tests and are provided by grade, and the sample sizes are shown on the lower right in bold font and indicated with an asterisk.

Table 8.14 Correlations Between ELA and Mathematics for All Students

Content Area and Grade	Number of Students	R and Sample Size
ELA 3	4,127	0.63
Mathematics 3	4,112	*3,969
ELA 4	4,455	0.64
Mathematics 4	4,371	*4,277
ELA 5	4,465	0.63
Mathematics 5	4,373	*4,294

Content Area and Grade	Number of Students	R and Sample Size
ELA 6	4,579	0.60
Mathematics 6	4,386	*4,320
ELA 7	4,557	0.65
Mathematics 7	4,523	*4,397
ELA 8	4,375	0.61
Mathematics 8	4,274	*4,169
ELA 11	3,840	0.66
Mathematics 11	3,802	*3,700

Notes:

- Numbers in **bold** font and indicated with an asterisk are the sample sizes to calculate the correlations.
- Sample sizes of the individual assessments are in the *Number of Students* column.
- R denotes the correlation coefficient; these are decimals that begin with “0” (zero).

Results for these students appear to be consistent with expectations. In general, students’ ELA scores correlated moderately with their mathematics scores.

[Table 8.G.5](#) through [Table 8.G.11](#) starting on page [505](#) in [appendix 8.G](#) provide the content area test score correlations by gender, ethnicity, English-language fluency, economic status, and migrant status. Similar patterns of correlations were found between students’ ELA and mathematics results within the student groups.

Note that the correlations are reported only for groups of more than 10 students. Correlations between scores on any two content area tests where 10 or fewer students took the tests are expressed as “NA.”

8.7.5. Evidence Based on Relationship to Other Variables

Evidence based on *relations to other variables* can be evaluated using the correlation between the CAAs for ELA and mathematics assessment results and variables related to students, as well as the correlation between the CAAs for ELA and mathematics scores with teacher judgments of student readiness for the next grade level. This type of evidence is essential for supporting the validity of certain inferences based on scores from the CAA and the SSC.

[Table 8.15](#) presents the relationship between the CAA for ELA and mathematics scale scores and the level of test engagement reported by teachers on a Likert scale of 0–3 in the final question of the SSC. Refer to subsection [8.7.5.1 Survey of Student Characteristics](#) for additional information.

During the 2017–18 CAAs for ELA and mathematics administration, the correlations between scale scores and the test engagement range from .53 to .59 for ELA and from .45 to .52 for mathematics. All correlations are significant, with $p < .01$.

Results show a moderately strong correlation between the test engagement and student achievement (scale scores) across all tests; in particular, the correlation in ELA is stronger

than that in mathematics. As is shown by their test engagement, high school students seem to have the highest level of test engagement, on average, than other grades.

Table 8.15 Correlations between Scale Scores and SSC Test Engagement Response

Content Area and Grade	SS_Mean	Resp_Mean	SS_SD	Resp_SD	N	Correlation
ELA 3	348.32	2.07	18.88	0.87	4,158	.59*
ELA 4	445.36	2.13	17.41	0.84	4,462	.58*
ELA 5	546.06	2.23	17.13	0.84	4,479	.57*
ELA 6	645.03	2.18	13.99	0.85	4,579	.56*
ELA 7	745.00	2.24	17.86	0.86	4,538	.53*
ELA 8	847.25	2.26	13.53	0.86	4,386	.55*
ELA 11	949.11	2.38	15.87	0.83	3,858	.57*
Mathematics 3	342.49	2.03	15.40	0.88	4,123	.45*
Mathematics 4	440.48	2.08	15.52	0.89	4,382	.51*
Mathematics 5	541.85	2.14	15.52	0.87	4,389	.47*
Mathematics 6	641.80	2.18	14.51	0.87	4,434	.45*
Mathematics 7	741.25	2.19	15.63	0.88	4,542	.48*
Mathematics 8	841.32	2.20	14.45	0.89	4,326	.47*
Mathematics 11	940.93	2.35	16.68	0.86	3,823	.52*

Note: * $p < 0.01$

8.7.5.1. Survey of Student Characteristics (SSC)

The purpose of the SSC is to elicit information from teachers regarding the student's characteristics. The SSC focuses on the characteristics of the student's disability as well as types and level of engagement.

The SSC includes three selected questions from the Learner Characteristics Inventory (LCI) (Kearns, Kleinert, Kleinert, & Towles, 2006), with two of these questions on the student's preferable means of responding to the CAAs in ELA and mathematics, respectively. The LCI for alternate assessments based on alternate achievement standards (AA-AAS) were developed by the National Alternate Assessment Center to gather data on characteristics of students taking alternate assessments.

The purposes of LCI are to identify the learner characteristic patterns across grades and years, provide validity evidence regarding the population, and support the use of the AA-AAS for this population. The survey was completed by teachers of students who took the CAAs. Three survey questionnaires and the summary of responses are presented in [Table 8.G.12](#) and [Table 8.G.13](#) for ELA and mathematics, respectively. In general, the percentage of respondents for each survey category is similar across grades and content areas. The key findings from the survey results are summarized next.

- For either ELA or mathematics, 9 to 12 percent of test examiners for each grade reported that they ended the test early because the student's productivity and engagement had significantly declined, even after allowing breaks over multiple days.

- The majority of the test examiners—over 50 percent for each grade of either ELA or mathematics—reported that their students communicated by using a mouse, touch screen, or a computer keyboard to enter responses directly in the system.
- When asked about the level of engagement of students in ELA assessments, 30 to 50 percent of the test examiners reported that students were fully engaged, and 23 to 32 percent reported that students were moderately engaged for each grade.
- When asked about the level of engagement in mathematics assessments, 29 to 49 percent of the text examiners reported that students were fully engaged in the ELA assessment, and 22 to 30 percent reported that students were moderately engaged.

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Appendix 8.A: Classical Item Analyses

Note 1: In [Table 8.A.1](#) through [Table 8.A.28](#), the value in the *Item Use* column indicates the item use for analysis.

Item Use	Description
E	Operational items with the prior statistics. Items are used for linking
O	Operational items without the prior statistics
P	Field test items

Note 2: Items with poor statistics are flagged. Refer to the table, next, for a description of each flag and possible values that will appear in the *Flag* column in [Table 8.A.1](#) through [Table 8.A.14](#).

Flag	Description	Criteria
A	Indicates low average item score (AIS) /low p -value (difficult item)	Dichotomous item: p -value < 0.33 Polytomous item: AIS < 30 percent of maximum possible score points
H	Indicates high average item score (AIS) /high p -value (easy item)	Dichotomous item: p -value > 0.95 Polytomous item: AIS > 80 percent of maximum possible score points
Rpoly	Indicates low correlation with the criterion Item – Total Correlation < 0.20	Polyserial < 0.20
O	Indicates high percent of omits or not responding	Dichotomous item: %omit > 5% Polytomous item: %omit > 20%
D	Indicates high ability students select distractor	Dichotomous item: High scoring students tend to select distractor over correct option Polytomous item: High scoring students tend to score lower than at the top score level (0 score for completion item, 0 or 1 for 2-point item)
L	Indicates a small percentage of students obtaining a score category	Polytomous item: lower than or equal to 3%

Note 3: Items that do not have a flag are indicated with “[no flag]” in the *Flag* column in [Table 8.A.1](#) through [Table 8.A.14](#).

Table 8.A.1 Average Item Score and Polyserial for English Language Arts/Literacy (ELA), Grade Three

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTW3020108T1	E	0.74	0.19	Rpoly	1	ZoneSS Discrete
CLTR3020057T1-M	E	1.42	0.66	[no flag]	2	ZoneMS Member
CLTR3020058T1-M	E	0.80	0.67	[no flag]	1	MCSS Member
CLTR3020059T1-O	E	1.62	0.60	H	2	MCMA - Member
CLTW3020095T1	E	1.53	0.64	[no flag]	2	ZoneMS Discrete
CLTR3020105T1	E	0.72	0.72	[no flag]	1	MCSS Discrete
CLTW3020107T1	E	0.81	0.59	[no flag]	1	MCSS Discrete
CLTR3020140T2-M	E	1.43	0.63	L	2	ZoneMS Member
CLTR3020141T2-M	E	0.48	0.47	[no flag]	1	MCSS Member
CLTR3020142T2-M	E	1.04	0.65	[no flag]	2	MCMA - Member
CLTR3020051T1	E	0.51	0.50	[no flag]	1	MCSS Member
CLTR3020052T1	E	0.53	0.66	O	1	MCSS Member
CLTR3020053T1-M	E	0.50	0.65	[no flag]	1	MatchSS Member
CLTR3020170T1	E	0.65	0.54	[no flag]	2	MCMA - Member
CLTR3020169T1	E	1.07	0.57	[no flag]	2	ZoneMS Member
CLTW3020171T1-R	O	0.32	0.65	A	1	ZoneMS Member
CLTR3020093T1	E	0.47	0.54	O	1	MCSS Discrete
CLTR3040231T1	O	0.78	0.51	O	1	ZoneSS Member
CLTW3020146T2	E	1.14	0.68	[no flag]	2	ZoneMS Discrete
CLTR3020143T2	E	0.56	0.63	O	1	MCSS Discrete
CLTW3020145T2-M	E	1.05	0.68	O	2	MatchMS Member
CLTW3020162T2	E	0.52	0.38	O	1	MCSS Discrete
CLTW3040186T2	O	0.81	0.54	[no flag]	2	ZoneMS Member
CLTR3030110T2	O	1.30	0.67	[no flag]	2	ZoneMS Member
CLTR3030028T1	O	0.35	0.61	O	1	MCSS Discrete
CLTR3020094T1	E	0.55	0.59	[no flag]	1	MCSS Discrete
CLTW3030030T1	E	1.20	0.61	[no flag]	2	MatchMS Discrete
CLTR3030136T1	O	1.56	0.55	[no flag]	2	Composite - Member
CLTW3020165T2	O	0.66	0.29	[no flag]	1	MatchSS Member
CLTR3020163T2	O	0.65	0.42	[no flag]	1	MCSS Member
CLTR3020164T2	O	0.72	0.63	[no flag]	1	MCSS Member
CLTR3030080T2	E	0.55	0.61	[no flag]	1	MCSS Member
CLTR3030081T2	E	0.62	0.52	[no flag]	1	MCSS Member
CLTW3030082T2	E	1.45	0.61	[no flag]	2	ZoneMS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTW3030113T2	E	1.43	0.72	[no flag]	2	MatchMS Discrete
CLTR3040181T2	O	1.45	0.55	[no flag]	2	Composite - Member
CLTW3020403T3	E	0.97	0.56	[no flag]	2	MCSS Partial Credit Member
CLTW3020161T2	E	0.38	0.59	[no flag]	1	MatchMS Discrete
CLTR3040191T3	O	0.37	0.42	[no flag]	1	MCSS Member
CLTR3030168T3	E	0.54	0.55	[no flag]	1	MCSS Discrete
CLTR3040188T2	O	0.85	0.73	[no flag]	1	MCSS Member
CLTR3040187T2	O	1.10	0.45	[no flag]	2	Composite - Member
CLTR3040189T2	O	0.73	0.45	[no flag]	1	MCSS Member
CLTR3040182T2	O	0.74	0.66	[no flag]	1	MCSS Member
CLTW3020179T3	E	1.00	0.65	[no flag]	2	MCSS Partial Credit Member
CLTR3030158T3-R	O	0.97	0.66	H	1	MCSS Member
CLTR3030159T3	E	0.53	0.52	[no flag]	1	MCSS Member
CLTW3030160T3	E	1.08	0.78	[no flag]	2	MCSS Partial Credit Member
CLTR3030166T3	O	1.44	0.43	[no flag]	2	ZoneMS Member
CLTR3040194T3	O	0.72	0.61	[no flag]	1	MCSS Member
CLTR3040190T3	O	1.80	0.47	H L	2	ZoneMS Member
CLTR3040024T1	P	0.59	0.75	[no flag]	1	MCSS Member
CLTR3040025T1	P	1.58	0.77	L	2	ZoneMS Member
CLTR3040026T1	P	0.64	0.71	[no flag]	1	MCSS Member
CLTW3040004T1	P	0.54	0.59	[no flag]	1	ZoneSS Member
CLTR3040039T1	P	0.45	0.55	[no flag]	1	MCSS Member
CLTR3040038T1	P	1.20	0.56	[no flag]	2	Composite - Member
CLTR3040040T1	P	0.46	0.39	[no flag]	1	ZoneSS Member
CLTW3040227T2	P	0.26	0.46	A	1	MatchSS Member
CLTR3040232T1	P	1.40	0.68	[no flag]	2	ZoneMS Discrete
CLTR3040183T2	P	1.50	0.57	L	2	ZoneMS Discrete
CLTW3040184T2	P	0.39	0.61	[no flag]	1	MCMS Member
CLTW3040022T1	P	0.78	0.74	[no flag]	1	MCSS Member
CLTR3040180T2	P	0.46	0.52	[no flag]	1	MCSS Member
CLTR3040085T2	P	0.30	0.46	A O	1	MCSS Member
CLTR3040084T2	P	0.44	0.52	[no flag]	1	MCSS Member
CLTW3040086T2	P	1.17	0.69	[no flag]	2	MatchMS Member
CLTR3030164T3	P	1.50	0.80	L	2	ZoneMS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR3040179T2	P	0.69	0.68	[no flag]	1	MCSS Member
CLTW3040193T3	P	0.77	0.60	[no flag]	2	MCSS Partial Credit Member
CLTR3040192T3	P	1.26	0.67	[no flag]	2	MCMA - Member

Table 8.A.2 Average Item Score and Polyserial for ELA, Grade Four

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR4020239T1	E	0.80	0.60	[no flag]	1	MCSS Discrete
CLTR4020304T1-M	E	0.66	0.66	[no flag]	1	MCSS Member
CLTR4020305T1-M	E	1.40	0.59	[no flag]	2	ZoneMS Member
CLTW4020306T1-O	E	1.39	0.55	[no flag]	2	ZoneMS Member
CLTW4020240T1-M	E	1.49	0.71	[no flag]	2	MatchMS Member
CLTR4020308T1	E	0.64	0.51	[no flag]	1	MCSS Discrete
CLTR4020084T2	E	0.78	0.35	[no flag]	1	MCSS Discrete
CLTR4030020T2	E	0.59	0.53	[no flag]	1	MCSS Member
CLTR4030021T2	E	1.16	0.59	[no flag]	2	ZoneMS Member
CLTW4030022T2	E	0.48	0.53	O	1	MCSS Member
CLTR4020256T1-M	E	0.43	0.48	O	1	MCSS Member
CLTR4020257T1-M	E	1.17	0.57	[no flag]	2	ZoneMS Member
CLTR4020258T1-M	E	1.08	0.51	[no flag]	2	MCMA - Member
CLTR4040202T1	O	0.63	0.55	O	1	MCSS Discrete
CLTR4030173T1	O	0.40	0.42	O	1	MCSS Member
CLTR4020237T1	E	0.72	0.58	O	1	MCSS Discrete
CLTR4030170T1	E	0.34	0.44	O	1	MCSS Member
CLTR4030171T1	O	1.52	0.75	L	2	ZoneMS Member
CLTW4040203T1	O	0.62	0.35	[no flag]	1	ZoneSS Member
CLTR4020116T2	E	0.45	0.49	O	1	MCSS Member
CLTR4020117T2	E	1.13	0.54	[no flag]	2	ZoneMS Member
CLTW4020118T2	E	0.32	0.41	A O	1	MCSS Member
CLTR4030023T2-R	O	0.42	0.44	O	1	MCSS Member
CLTR4030024T2	E	0.94	0.57	[no flag]	2	ZoneMS Member
CLTR4030025T2	E	0.63	0.43	[no flag]	2	MCMA - Member
CLTR4040200T1	O	0.32	0.36	A	1	MCSS Member
CLTR4030172T1	E	1.37	0.55	[no flag]	2	ZoneMS Member
CLTR4030062T2	O	1.62	0.70	H	2	MatchMS Member
CLTW4040074T2	O	0.47	0.21	[no flag]	1	MCSS Member
CLTR4040005T2	O	0.77	0.58	[no flag]	1	MatchSS Discrete
CLTR4040069T2	O	0.51	0.40	[no flag]	1	MCSS Member
CLTW4020138T2	E	0.67	0.17	Rpoly	1	MCSS Discrete
CLTR4020090T2	E	0.24	0.32	A	1	MCSS Member
CLTR4020091T2	E	1.11	0.43	[no flag]	2	ZoneMS Member
CLTR4020092T2	E	1.08	0.52	[no flag]	2	MCMA - Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR4040072T2	O	1.15	0.53	[no flag]	2	ZoneMS Member
CLTR4020245T3	E	0.47	0.49	[no flag]	1	MCSS Member
CLTR4020244T3-M	E	0.68	0.50	[no flag]	2	MatchMS Member
CLTW4020246T3	E	0.77	0.48	[no flag]	2	MCSS Partial Credit Member
CLTR4020119T2-M	E	0.36	0.42	[no flag]	1	MCSS Member
CLTR4020120T2-M	E	1.14	0.40	[no flag]	2	ZoneMS Member
CLTW4020121T2-M	E	0.54	0.27	[no flag]	1	ZoneSS Member
CLTR4020083T2	E	0.61	0.46	[no flag]	1	MCSS Discrete
CLTR4040195T3	O	0.58	0.62	[no flag]	1	MCSS Member
CLTR4030089T3	E	0.58	0.61	[no flag]	1	MCSS Member
CLTR4030090T3	E	1.26	0.49	[no flag]	2	ZoneMS Member
CLTR4030091T3	E	1.39	0.51	[no flag]	2	MCMA - Member
CLTW4030132T3-R	O	0.55	0.56	[no flag]	1	MatchMS Member
CLTW4030133T3-R	O	1.25	0.58	[no flag]	2	MCSS Partial Credit Member
CLTR4020128T3	O	0.78	0.68	[no flag]	1	MCSS Member
CLTR4030131T3	E	0.63	0.49	[no flag]	1	MCSS Discrete
CLTR4040006T1	P	0.71	0.77	[no flag]	1	MCSS Member
CLTR4040007T1	P	1.51	0.75	[no flag]	2	ZoneMS Member
CLTW4040008T1	P	1.27	0.66	[no flag]	2	ZoneMS Member
CLTR4040199T1	P	0.84	0.73	[no flag]	1	MCSS Member
CLTR4040001T2	P	0.70	0.58	[no flag]	1	MCSS Member
CLTR4040002T2	P	0.55	0.64	[no flag]	1	ZoneSS Member
CLTR4040003T2	P	1.49	0.57	[no flag]	2	MCMA - Member
CLTR4040071T2	P	0.66	0.62	[no flag]	1	MCSS Member
CLTR4040100T1	P	0.86	0.61	[no flag]	1	MCSS Member
CLTR4040101T1	P	1.47	0.57	[no flag]	2	ZoneMS Member
CLTW4040102T1	P	0.42	0.69	[no flag]	1	MCSS Member
CLTR4040201T1	P	1.38	0.55	L	2	ZoneMS Discrete
CLTR4040051T2	P	0.64	0.78	[no flag]	1	MCSS Member
CLTR4040052T2	P	1.23	0.50	[no flag]	2	ZoneMS Member
CLTW4040053T2	P	0.41	0.53	O	1	MCSS Member
CLTW4040076T2	P	1.35	0.75	[no flag]	2	ZoneMS Member
CLTR4040070T2	P	1.43	0.55	L	2	ZoneMS Member
CLTW4040073T2	P	0.40	0.30	[no flag]	1	MCSS Member
CLTW4040009T3	P	0.82	0.55	[no flag]	2	MCSS Partial Credit Member
CLTR4040197T3	P	0.77	0.70	[no flag]	1	MCSS Member

Table 8.A.3 Average Item Score and Polyserial for ELA, Grade Five

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTW5020317T1	E	1.63	0.60	H L	2	ZoneMS Discrete
CLTR5020453T1-M	E	1.75	0.72	H L	2	ZoneMS Member
CLTW5020454T1-M	E	1.45	0.71	[no flag]	2	ZoneMS Member
CLTR5030154T1	E	1.57	0.71	[no flag]	2	ZoneMS Member
CLTR5030156T1	E	1.60	0.67	H L	2	ZoneMS Discrete
CLTR5020314T1	E	0.66	0.59	[no flag]	1	MCSS Discrete
CLTR5030185T2	E	1.63	0.48	H L	2	ZoneMS Member
CLTR5020253T2-M	E	0.58	0.51	[no flag]	1	MCSS Member
CLTR5020254T2-M	E	1.36	0.48	L	2	ZoneMS Member
CLTW5020255T2-M	E	0.36	0.35	O	1	MCSS Member
CLTW5030157T1	E	0.71	0.40	O	1	MCSS Member
CLTR5040041T1	O	0.42	0.41	[no flag]	1	MCSS Member
CLTR5020327T1-M	E	0.47	0.46	[no flag]	1	MCSS Member
CLTR5020328T1-M	E	1.11	0.51	[no flag]	2	ZoneMS Member
CLTW5020329T1-M	E	0.39	0.30	O	1	MCSS Member
CLTW5020335T1	O	0.27	0.23	D A O	1	MCSS Discrete
CLTR5030263T1	O	0.42	0.44	O	1	MCSS Member
CLTR5030264T1	O	1.09	0.60	[no flag]	2	ZoneMS Member
CLTW5030265T1	O	0.31	0.45	A O	1	MCSS Member
CLTR5020047T2	E	1.14	0.62	[no flag]	2	ZoneMS Discrete
CLTR5020346T2	E	0.96	0.44	[no flag]	2	MCMA - Discrete
CLTR5030183T2	O	1.08	0.61	[no flag]	2	ZoneMS Member
CLTR5040104T2	O	0.40	0.52	O	1	MCSS Member
CLTW5040105T2	O	1.05	0.62	[no flag]	2	ZoneMS Member
CLTR5040103T2	O	0.28	0.24	D A O	1	MCSS Member
CLTR5030122T1	E	0.54	0.47	[no flag]	1	MCSS Member
CLTR5030123T1-M	O	0.84	0.43	[no flag]	2	MCMA - Member
CLTW5030124T1	E	1.49	0.55	L	2	MatchMS Member
CLTW5020347T2	E	0.40	0.37	[no flag]	1	MCSS Discrete
CLTR5030179T2	E	0.60	0.47	[no flag]	1	MCSS Member
CLTR5030180T2	E	1.46	0.39	L	2	ZoneMS Member
CLTW5030181T2-R	O	0.50	0.64	[no flag]	1	MCSS Member
CLTR5040116T2	O	0.48	0.44	[no flag]	1	MCSS Member
CLTR5020342T2	E	1.10	0.36	[no flag]	2	MCMA - Discrete
CLTR5040109T2	O	0.83	0.68	[no flag]	1	MCSS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR5040110T2	O	1.51	0.69	[no flag]	2	Composite - Member
CLTW5040111T2	O	1.61	0.68	H	2	MatchMS Member
CLTR5030140T3	E	0.51	0.36	[no flag]	1	MCSS Member
CLTR5020073T3	E	0.34	0.42	[no flag]	1	MCSS Discrete
CLTW5030139T3	O	0.62	0.66	[no flag]	1	MatchMS Member
CLTR5040087T2	O	0.72	0.58	[no flag]	1	MCSS Member
CLTR5040088T2	O	1.68	0.62	H L	2	ZoneMS Member
CLTR5040089T2	O	1.25	0.60	[no flag]	2	MCMA - Member
CLTR5040115T2	O	1.73	0.55	H L	2	ZoneMS Member
CLTR5020038T3-M	E	0.34	0.42	[no flag]	1	MCMS Member
CLTR5020039T3-M	E	0.39	0.39	[no flag]	1	MCSS Member
CLTW5020040T3-M	E	0.77	0.51	[no flag]	2	MCSS Partial Credit Member
CLTR5020341T3	E	1.24	0.23	L	2	ZoneMS Discrete
CLTR5040171T3	O	0.64	0.37	[no flag]	1	MatchSS Member
CLTW5040230T3	O	1.56	0.56	[no flag]	2	MCSS Partial Credit Member
CLTR5040228T3	O	0.54	0.49	[no flag]	1	MCSS Member
CLTR5040229T3	O	0.54	0.48	[no flag]	1	MCSS Member
CLTW5040174T3	O	0.76	0.58	[no flag]	1	MatchMS Discrete
CLTW5040019T1	P	0.65	0.69	[no flag]	1	MCSS Member
CLTR5040014T1	P	0.73	0.62	[no flag]	1	MCSS Member
CLTR5040013T1	P	1.68	0.79	H L	2	ZoneMS Member
CLTW5040015T1	P	1.50	0.73	[no flag]	2	MatchMS Member
CLTW5030187T2-R	P	0.54	0.68	[no flag]	1	MatchSS Member
CLTR5040035T1	P	0.73	0.71	[no flag]	1	MCSS Member
CLTW5040036T1	P	0.79	0.63	[no flag]	1	MCSS Member
CLTR5040034T1	P	1.53	0.71	L	2	ZoneMS Member
CLTR5040118T2	P	1.57	0.61	L	2	ZoneMS Member
CLTR5020250T3	P	1.16	0.66	[no flag]	2	MatchMS Member
CLTW5020251T3	P	1.34	0.63	[no flag]	2	MatchMS Member
CLTR5020252T3	P	0.39	0.59	[no flag]	1	MCSS Member
CLTR5030145T1	P	0.74	0.73	[no flag]	1	MCSS Member
CLTR5040016T1	P	0.79	0.70	[no flag]	1	MCSS Member
CLTR5040018T1	P	1.37	0.67	[no flag]	2	MCMA - Member
CLTR5040017T1	P	1.51	0.62	L	2	ZoneMS Member
CLTR5020336T1	P	1.44	0.60	[no flag]	2	MCMA - Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR5030182T2-R	P	0.57	0.65	[no flag]	1	MCSS Member
CLTR5040117T2	P	0.64	0.64	[no flag]	1	MCSS Member
CLTW5040120T2	P	0.43	0.45	[no flag]	1	MCSS Member

Table 8.A.4 Average Item Score and Polyserial for ELA, Grade Six

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR6020097T1	E	1.76	0.62	H	2	MCMA - Discrete
CLTR6030030T1	E	1.50	0.57	[no flag]	2	MCMA - Member
CLTR6030031T1	E	0.79	0.44	[no flag]	1	MCSS Member
CLTW6030032T1-O	E	1.29	0.63	[no flag]	2	ZoneMS Member
CLTW6030202T1	E	0.69	0.47	[no flag]	1	MatchMS Member
CLTW6020104T1	E	1.44	0.58	[no flag]	2	ZoneMS Discrete
CLTR6020204T2	E	1.54	0.59	L	2	ZoneMS Discrete
CLTR6020200T2-M	E	0.61	0.54	[no flag]	1	MCSS Member
CLTR6020199T2-M	E	0.66	0.61	[no flag]	1	MCSS Member
CLTR6020202T2	E	1.45	0.63	[no flag]	2	ZoneMS Discrete
CLTR6020101T1-R	O	0.36	0.56	O	1	MCSS Discrete
CLTW6030012T1-R	O	0.27	0.33	A O	1	ZoneSS Member
CLTR6030010T1-R	O	0.32	0.51	A O	1	MCSS Member
CLTR6030011T1-R	O	0.36	0.50	A O	2	MatchMS Member
CLTR6030203T1	E	0.32	0.54	A O	1	MCSS Member
CLTR6020098T1	E	0.86	0.61	[no flag]	2	ZoneMS Discrete
CLTR6030042T1	O	0.71	0.42	[no flag]	2	MCMA - Member
CLTR6040124T1	O	0.47	0.60	O	1	MCSS Member
CLTR6020099T1	E	0.88	0.62	[no flag]	2	MCMA - Discrete
CLTR6030073T2	E	0.26	0.52	A O	1	MCSS Member
CLTR6030074T2-R	O	0.07	0.42	A O	1	MCMS Member
CLTW6030075T2	E	0.71	0.69	O	2	MatchMS Member
CLTW6040204T2	O	0.28	0.42	A O	1	MatchMS Member
CLTR6030128T2	O	0.79	0.59	O	2	ZoneMS Member
CLTW6020208T2	E	0.36	0.49	O	1	MCSS Discrete
CLTR6030064T1-R	O	0.64	0.52	[no flag]	1	MCSS Member
CLTR6030065T1-R	O	0.80	0.50	[no flag]	1	MCSS Member
CLTW6030066T1	E	0.97	0.51	[no flag]	2	MatchMS Member
CLTW6040166T2	O	1.28	0.59	[no flag]	2	ZoneMS Member
CLTR6030260T2	O	0.53	0.51	[no flag]	1	MCSS Member
CLTR6030261T2	O	1.03	0.50	[no flag]	2	Composite - Member
CLTR6030262T2	O	1.18	0.55	[no flag]	2	MCMA - Member
CLTW6040165T2	O	0.38	0.24	[no flag]	1	MatchSS Member
CLTR6030197T2	E	0.45	0.18	Rpoly	1	ZoneSS Member
CLTR6030147T2	E	0.35	0.35	[no flag]	1	MCSS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR6030148T2	E	1.14	0.48	[no flag]	2	ZoneMS Member
CLTW6030149T2	E	0.47	0.40	[no flag]	1	MatchSS Member
CLTR6030205T3	E	1.08	0.34	[no flag]	2	ZoneMS Member
CLTW6040033T3	O	0.25	0.39	A	1	MatchMS Member
CLTR6040030T3	O	0.99	0.56	[no flag]	2	ZoneMS Member
CLTR6040163T2	O	0.47	0.43	[no flag]	1	MCMS Member
CLTW6040168T2	O	1.82	0.65	H L	2	ZoneMS Member
CLTR6040169T2	O	0.78	0.56	[no flag]	1	MCSS Member
CLTR6040170T2	O	0.41	0.50	[no flag]	1	MatchMS Member
CLTW6020209T2	E	1.12	0.49	[no flag]	2	MCSS Partial Credit Member
CLTW6030228T3	O	0.69	0.50	[no flag]	1	MatchMS Member
CLTR6020418T3	E	0.80	0.39	[no flag]	2	MCMA – Member
CLTR6020416T3	E	0.31	0.39	A	1	MCMS Member
CLTR6020417T3	E	1.19	0.21	[no flag]	2	ZoneMS Member
CLTW6020424T3	E	0.40	0.38	[no flag]	1	MCSS Discrete
CLTR6040032T3	O	1.39	0.53	[no flag]	2	ZoneMS Member
CLTR6040010T3	O	1.67	0.59	H L	2	ZoneMS Member
CLTR6040011T3	O	0.50	0.42	[no flag]	1	MCSS Member
CLTW6040012T3	O	0.89	0.51	[no flag]	2	MCSS Partial Credit Member
CLTW6040123T1	P	1.55	0.67	L	2	ZoneMS Member
CLTR6040112T1	P	1.64	0.68	H	2	MCMA – Member
CLTR6040114T1	P	0.61	0.70	O	1	MCSS Member
CLTR6040113T1	P	0.77	0.46	O	1	MCSS Member
CLTR6040176T2	P	1.62	0.74	H L	2	ZoneMS Member
CLTW6040177T2	P	0.62	0.65	[no flag]	1	MatchMS Member
CLTR6040178T2	P	0.48	0.37	[no flag]	1	MCSS Member
CLTR6040164T2	P	0.53	0.66	[no flag]	1	MCSS Member
CLTW6040108T1	P	0.52	0.68	[no flag]	1	MCSS Member
CLTR6040106T1	P	0.68	0.79	[no flag]	1	MCMS Member
CLTR6040107T1	P	1.04	0.59	[no flag]	2	MatchMS Member
CLTR6040167T2	P	1.43	0.62	L	2	ZoneMS Member
CLTW6020103T1	P	0.49	0.42	[no flag]	1	MCSS Member
CLTR6040236T1	P	1.38	0.59	L	2	ZoneMS Discrete
CLTR6040121T1	P	1.39	0.62	[no flag]	2	MCMA – Member
CLTW6020102T1	P	0.65	0.64	[no flag]	1	MCSS Member
CLTR6020423T2-R	P	0.74	0.72	[no flag]	1	MCSS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR6040031T3	P	0.35	0.37	[no flag]	1	MCSS Member
CLTW6040138T1	P	0.45	0.56	[no flag]	1	MatchMS Member
CLTR6040122T1	P	0.69	0.68	[no flag]	1	MCSS Member

Table 8.A.5 Average Item Score and Polyserial for ELA, Grade Seven

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTW7020385T1	E	0.81	0.60	[no flag]	1	MCSS Discrete
CLTR7020411T1	E	0.84	0.42	[no flag]	1	MCSS Member
CLTR7020410T1	E	0.64	0.70	[no flag]	1	MCSS Member
CLTW7020412T1	E	1.22	0.58	[no flag]	2	ZoneMS Member
CLTR7020380T1	E	0.79	0.30	[no flag]	1	MCSS Discrete
CLTW7020386T1	E	1.36	0.60	[no flag]	2	ZoneMS Discrete
CLTR7020368T2	E	1.32	0.61	[no flag]	2	ZoneMS Discrete
CLTR7030070T2	E	1.28	0.53	[no flag]	2	ZoneMS Member
CLTR7030071T2	E	0.54	0.55	[no flag]	1	MCSS Member
CLTW7030072T2	E	0.61	0.71	[no flag]	1	MCSS Member
CLTR7020382T1	E	1.03	0.61	[no flag]	2	ZoneMS Discrete
CLTR7030252T1-R	E	0.75	0.39	O	1	MCSS Member
CLTR7030253T1-R	E	0.30	0.44	A O	1	MCSS Member
CLTW7030254T1	E	1.12	0.46	[no flag]	2	ZoneMS Member
CLTR7020379T1	E	1.18	0.50	[no flag]	2	ZoneMS Discrete
CLTR7020383T1	E	0.82	0.60	[no flag]	2	MCMA - Discrete
CLTR7040127T1	O	0.74	0.48	O	1	MCSS Member
CLTR7040128T1	O	0.39	0.63	O	1	MCSS Member
CLTW7040129T1	O	1.28	0.67	LO	2	MatchMS Member
CLTR7020378T2	E	0.60	0.40	A	2	MCMA - Member
CLTR7020377T2	E	0.24	0.40	A O	1	MCSS Member
CLTR7020376T2	E	0.32	0.45	A O	1	MCSS Member
CLTW7040065T2	O	1.52	0.71	[no flag]	2	ZoneMS Member
CLTW7040066T2	O	0.37	0.63	O	1	MCSS Member
CLTR7040175T2	O	0.39	0.54	O	1	MCSS Member
CLTW7030246T1	O	0.64	0.66	[no flag]	1	MCSS Member
CLTR7020381T1	E	0.56	0.47	[no flag]	1	MCSS Discrete
CLTW7020384T1	E	0.32	0.39	A	1	MCSS Discrete
CLTR7030054T2	E	0.63	0.63	[no flag]	1	MCSS Member
CLTR7030055T2	E	0.41	0.57	[no flag]	1	MCSS Member
CLTW7030056T2	E	1.05	0.51	[no flag]	2	MatchMS Member
CLTW7030242T2	O	0.74	0.66	[no flag]	1	MCSS Member
CLTWT020155T2	E	0.98	0.45	[no flag]	2	MCSS Partial Credit Member
CLTR7020154T2	E	0.78	0.62	[no flag]	1	MCSS Member
CLTR7020153T2	E	0.37	0.24	[no flag]	1	MCSS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR7020370T2	E	0.49	0.35	[no flag]	1	MCSS Discrete
CLTR7020365T3	E	0.96	0.45	[no flag]	2	MCMA - Discrete
CLTR7040062T3	O	1.29	0.29	[no flag]	2	ZoneMS Member
CLTR7030250T3	O	0.46	0.45	[no flag]	1	MCSS Member
CLTR7020158T2	E	1.40	0.62	[no flag]	2	MCSS Partial Credit Member
CLTR7020156T2	E	0.57	0.29	[no flag]	1	MCSS Member
CLTR7020157T2	E	0.47	0.48	[no flag]	1	MCSS Member
CLTR7040045T2	O	0.78	0.57	[no flag]	1	MCMS Member
CLTR7040046T2	O	0.80	0.61	[no flag]	1	MCSS Member
CLTR7040047T2	O	1.48	0.67	[no flag]	2	MatchMS Member
CLTR7020360T3	O	1.29	0.36	L	2	ZoneMS Member
CLTR7020362T3	E	0.49	0.49	[no flag]	1	MCMS Discrete
CLTW7030116T3	O	1.09	0.65	[no flag]	2	MCSS Partial Credit Member
CLTR7030114T3	O	0.72	0.62	[no flag]	1	MCMS Member
CLTR7030115T3	O	0.63	0.47	[no flag]	1	MCSS Member
CLTW7020350T3	E	1.15	0.65	[no flag]	2	MCSS Partial Credit Member
CLTR7020348T3	E	0.44	0.34	[no flag]	1	MCSS Member
CLTR7020349T3	E	0.19	0.35	A	1	MCMS Member
CLTR7040061T3	O	1.12	0.66	[no flag]	2	MCMA - Member
CLTR7040153T2	P	0.68	0.66	[no flag]	1	MCSS Member
CLTR7040154T2	P	1.45	0.60	[no flag]	2	ZoneMS Member
CLTW7040155T2	P	1.44	0.74	[no flag]	2	MatchMS Member
CLTR7040162T1	P	0.80	0.67	[no flag]	1	MCSS Member
CLTR7040042T2	P	0.65	0.63	[no flag]	1	MCSS Member
CLTR7040043T2	P	0.68	0.65	O	1	MCSS Member
CLTW7040044T2	P	1.44	0.65	[no flag]	2	ZoneMS Member
CLTR7040064T2	P	0.42	0.38	[no flag]	1	MCSS Member
CLTR7040077T3	P	0.41	0.51	[no flag]	1	MCMS Member
CLTR7040078T3	P	0.44	0.49	[no flag]	1	MCMS Member
CLTW7040079T3	P	0.85	0.57	[no flag]	2	MCSS Partial Credit Member
CLTW7040068T2	P	0.43	0.56	[no flag]	1	MCSS Member
CLTR7040049T2	P	0.57	0.49	[no flag]	1	MCSS Member
CLTR7040048T2	P	1.28	0.55	[no flag]	2	ZoneMS Member
CLTW7040050T2	P	0.56	0.38	O	1	MCSS Member
CLTR7040063T2	P	0.57	0.62	[no flag]	1	MCSS Member
CLTR7040125T1	P	1.45	0.79	[no flag]	2	MCMA - Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR7040156T1	P	1.66	0.82	H L	2	ZoneMS Member
CLTW7040157T1	P	0.58	0.68	[no flag]	1	MCSS Member
CLTR7040126T1	P	0.64	0.44	[no flag]	1	MatchSS Member

Table 8.A.6 Average Item Score and Polyserial for ELA, Grade Eight

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTW8020390T1	E	0.89	0.47	[no flag]	1	MCSS Discrete
CLTR8020394T1-M	E	1.16	0.42	[no flag]	2	ZoneMS Member
CLTR8020395T1-M	E	0.76	0.27	[no flag]	1	MCSS Member
CLTW8020396T1-O	E	1.23	0.50	[no flag]	2	ZoneMS Member
CLTR8020446T1	E	1.45	0.65	[no flag]	2	ZoneMS Discrete
CLTR8020447T1	E	1.20	0.25	[no flag]	2	ZoneMS Discrete
CLTR8020321T2-M	E	1.47	0.72	[no flag]	2	ZoneMS Member
CLTR8020322T2-M	E	0.37	0.28	[no flag]	1	MCSS Member
CLTR8020323T2-M	E	1.21	0.65	[no flag]	2	MCMA – Member
CLTW8030219T2	E	1.23	0.58	[no flag]	2	MCSS Partial Credit Member
CLTW8030212T1	E	1.06	0.26	[no flag]	2	ZoneMS Discrete
CLTR8020445T1	E	0.54	0.49	[no flag]	1	MCSS Discrete
CLTR8020210T1-R	O	0.54	0.38	[no flag]	1	MCSS Member
CLTR8020211T1-M	E	0.49	0.54	O	1	MCSS Member
CLTW8020212T1-M	E	0.72	0.42	O	1	MCSS Member
CLTR8040080T1	O	0.70	0.50	[no flag]	2	MCMA – Member
CLTR8040151T2	O	0.57	0.50	[no flag]	1	MCSS Member
CLTW8040037T1	O	0.77	0.55	[no flag]	1	MCSS Member
CLTR8030210T1-R	O	0.53	0.46	[no flag]	1	MCSS Member
CLTW8020260T2	E	0.84	0.40	[no flag]	2	MCSS Partial Credit Member
CLTR8030207T2	E	0.36	0.29	O	1	MCSS Member
CLTR8030208T2	E	0.94	0.55	[no flag]	2	ZoneMS Member
CLTW8030209T2-R	O	0.46	0.58	O	1	MCSS Member
CLTR8020259T2	O	1.22	0.61	[no flag]	2	ZoneMS Discrete
CLTR8040152T2	O	0.43	0.32	[no flag]	1	MCSS Member
CLTW8040158T2	O	0.67	0.54	[no flag]	1	MCSS Member
CLTR8040150T2	O	0.99	0.56	[no flag]	2	MatchMS Member
CLTR8040145T2	O	0.28	0.27	A	1	MCSS Member
CLTR8040146T2	O	1.54	0.56	L	2	ZoneMS Member
CLTW8040147T2	O	1.48	0.59	L	2	ZoneMS Member
CLTR8020290T2	E	0.56	0.53	[no flag]	1	MCSS Discrete
CLTR8020285T2-M	E	0.45	0.39	[no flag]	1	MCSS Member
CLTR8020286T2-M	E	0.52	0.51	[no flag]	1	MCSS Member
CLTW8020287T2-M	E	0.33	0.27	[no flag]	1	MatchMS Member
CLTR8020072T3	E	0.35	0.33	[no flag]	1	MCSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR8020439T3	E	1.14	0.55	[no flag]	2	ZoneMS Discrete
CLTW8030129T3	O	1.09	0.43	[no flag]	2	MCSS Partial Credit Member
CLTR8030223T2	O	0.79	0.62	[no flag]	1	MCSS Member
CLTR8040148T2	O	1.52	0.55	L	2	ZoneMS Member
CLTR8020066T3-M	E	1.20	0.48	[no flag]	2	ZoneMS Member
CLTR8020068T3-M	E	1.31	0.56	[no flag]	2	MCMA – Member
CLTR8020067T3-M	E	0.55	0.46	[no flag]	1	MCSS Member
CLTR8030120T3	E	0.52	0.62	[no flag]	1	MCMS Member
CLTW8020069T3	E	0.47	0.33	[no flag]	1	MCSS Discrete
CLTR8040214T3	O	1.59	0.58	L	2	ZoneMS Member
CLTR8040215T3	O	1.40	0.55	L	2	ZoneMS Member
CLTW8040216T3	O	1.33	0.53	[no flag]	2	MCSS Partial Credit Member
CLTW8040220T3	O	0.93	0.63	[no flag]	1	MatchSS Member
CLTR8040090T1	P	0.69	0.25	[no flag]	1	MCSS Member
CLTR8040091T1	P	1.57	0.75	L	2	ZoneMS Member
CLTW8040092T1	P	1.44	0.66	[no flag]	2	ZoneMS Member
CLTR8040219T3	P	1.02	0.40	[no flag]	2	MCMA – Member
CLTR8040142T2	P	0.76	0.62	[no flag]	1	MCSS Member
CLTR8040144T2	P	1.27	0.59	[no flag]	2	ZoneMS Member
CLTR8040143T2	P	0.86	0.75	[no flag]	2	Composite – Member
CLTR8040217T3	P	0.47	0.63	[no flag]	1	MCSS Member
CLTR8040218T3	P	0.55	0.69	[no flag]	1	MCSS Member
CLTR8030125T1	P	1.41	0.74	[no flag]	2	ZoneMS Member
CLTR8030126T1	P	0.76	0.75	[no flag]	1	MCSS Member
CLTW8030127T1	P	1.49	0.72	[no flag]	2	ZoneMS Member

Table 8.A.7 Average Item Score and Polyserial for ELA, Grade Eleven

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTRH020034T1	E	0.78	0.20	Rpoly	1	MCSS Discrete
CLTRH020230T1	E	0.58	0.53	[no flag]	1	MCSS Member
CLTRH020231T1	E	0.78	0.70	[no flag]	1	MCSS Member
CLTWH020232T1	E	1.44	0.64	[no flag]	2	ZoneMS Member
CLTRH020033T1	E	1.25	0.52	[no flag]	2	ZoneMS Discrete
CLTRH020234T1	E	1.52	0.58	[no flag]	2	MCMA – Discrete
CLTRH020220T2	E	0.70	0.72	[no flag]	1	MCSS Member
CLTRH020221T2	E	0.53	0.66	[no flag]	1	MCSS Member
CLTWH020222T2	E	1.36	0.65	[no flag]	2	ZoneMS Member
CLTWH020226T2	E	1.23	0.62	[no flag]	2	ZoneMS Discrete
CLTRH020233T1	E	0.56	0.49	[no flag]	1	MCSS Discrete
CLTWH020236T1	E	1.24	0.55	[no flag]	2	ZoneMS Discrete
CLTRH020032T1-M	E	0.98	0.39	[no flag]	2	MatchMS Member
CLTRH030038T1	E	0.58	0.51	A	2	MCMA – Member
CLTRH030037T1	E	0.90	0.66	[no flag]	2	ZoneMS Member
CLTRH030036T1-R	O	0.46	0.63	O	1	MCSS Member
CLTRH040131T1	O	1.11	0.73	[no flag]	2	ZoneMS Member
CLTRH040132T1	O	1.04	0.64	[no flag]	2	ZoneMS Member
CLTWH040133T1	O	0.38	0.43	O	1	MCSS Member
CLTRH020217T2	E	0.51	0.44	O	1	MCSS Member
CLTRH020218T2	E	0.91	0.56	[no flag]	2	ZoneMS Member
CLTWH020219T2	E	0.32	0.49	A O	1	MCSS Member
CLTRH020214T2	E	0.89	0.52	[no flag]	2	MatchMS Discrete
CLTWH040207T2	O	0.52	0.61	[no flag]	1	MCSS Member
CLTWH040222T2	O	0.39	0.56	O	1	MCSS Member
CLTWH030151T1	E	0.46	0.28	[no flag]	1	MCSS Member
CLTRH040130T1	O	0.58	0.60	[no flag]	1	MCMS Member
CLTRH040221T2	O	0.64	0.42	[no flag]	1	MCSS Member
CLTRH040208T2	O	1.11	0.56	[no flag]	2	ZoneMS Member
CLTRH040209T2	O	1.51	0.56	L	2	ZoneMS Member
CLTWH040210T2	O	0.34	0.44	[no flag]	1	MatchSS Member
CLTRH020189T2	E	1.45	0.53	[no flag]	2	MCMA – Member
CLTRH020187T2	E	0.29	0.46	A	1	MCMS Member
CLTRH020223T2	E	0.53	0.16	Rpoly	1	MCSS Discrete
CLTRH020213T2	E	0.42	0.31	[no flag]	1	MCSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTWH030230T3	E	0.27	0.20	A	1	MCMS Member
CLTRH040056T3	O	1.36	0.58	[no flag]	2	MCMA – Member
CLTWH040096T3	O	0.61	0.72	[no flag]	1	MatchMS Member
CLTRH030093T2	E	1.65	0.46	H L	2	ZoneMS Member
CLTRH030092T2	E	0.69	0.48	[no flag]	1	MCSS Member
CLTRH030094T2	E	1.50	0.53	[no flag]	2	MCMA – Member
CLTRH020224T2	E	1.40	0.53	[no flag]	2	MCMA – Discrete
CLTRH040224T2	O	1.42	0.54	L	2	ZoneMS Member
CLTRH040225T2	O	0.89	0.63	[no flag]	1	MCSS Member
CLTWH040226T2	O	1.69	0.54	H	2	MatchMS Member
CLTRH020278T3	E	0.31	0.41	A	1	MCSS Discrete
CLTWH020433T3	E	1.02	0.41	[no flag]	2	MCSS Partial Credit Member
CLTRH020266T3	E	0.45	0.38	[no flag]	1	MCSS Member
CLTWH020268T3	E	0.44	0.31	[no flag]	1	MCSS Member
CLTRH020267T3	E	1.18	0.45	[no flag]	2	ZoneMS Member
CLTRH040054T3	O	0.61	0.57	[no flag]	1	MCMS Member
CLTRH020275T3	O	0.65	0.64	[no flag]	1	MCMS Member
CLTWH040137T1	P	0.75	0.66	[no flag]	1	MCSS Member
CLTRH040206T2	P	1.36	0.69	[no flag]	2	ZoneMS Member
CLTRH040223T2	P	0.71	0.74	[no flag]	1	MCSS Member
CLTRH040205T2	P	0.40	0.51	[no flag]	1	MCSS Member
CLTWH030052T1-R	P	0.70	0.71	[no flag]	1	MCSS Member
CLTRH020031T1	P	0.65	0.66	[no flag]	1	MatchMS Member
CLTWH030153T2-R	P	0.53	0.65	[no flag]	1	MCSS Member
CLTRH030152T2	P	0.67	0.59	[no flag]	1	MCSS Member
CLTRH040134T1	P	0.94	0.60	[no flag]	2	MCMA – Member
CLTRH040135T1	P	0.58	0.69	[no flag]	1	MCMS Member
CLTWH040136T1	P	1.34	0.67	L	2	ZoneMS Member
CLTRH030229T3-R	P	0.54	0.60	[no flag]	1	MCSS Member

Table 8.A.8 Average Item Score and Polyserial for Mathematics, Grade Three

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM3020004T1	E	0.73	0.52	[no flag]	1	MCSS Discrete
CLTM3020210T1	E	0.71	0.32	[no flag]	1	MCSS Discrete
CLTM3020186T1	E	0.73	0.44	[no flag]	1	MCSS Discrete
CLTM3030566T1	E	0.71	0.57	[no flag]	1	MCSS Discrete
CLTM3020059T1	E	0.66	0.50	[no flag]	1	MCSS Discrete
CLTM3020065T1	E	0.74	0.58	[no flag]	1	ZoneSS Discrete
CLTM3020063T2	E	1.24	0.65	[no flag]	2	MCMA – Discrete
CLTM3030592T2	E	1.02	0.41	[no flag]	2	ZoneMS Member
CLTM3020008T2	E	0.42	0.45	O	1	MCSS Discrete
CLTM3020172T2	E	0.94	0.48	[no flag]	2	MCMA – Discrete
CLTM3020018T1	E	0.44	0.39	O	1	MCSS Discrete
CLTM3181019T2	O	0.59	0.62	A O	2	Composite – Discrete
CLTM3030500T1	E	0.49	0.25	[no flag]	1	ZoneSS Discrete
CLTM3020017T1	O	0.53	0.43	O	1	MCSS Discrete
CLTM3030506T1	E	0.39	0.39	O	1	ZoneSS Member
CLTM3020007T1	E	0.43	0.14	Rpoly	1	ZoneSS Discrete
CLTM3020062T1	E	0.80	0.69	O	2	MCMA – Discrete
CLTM3020001T1	E	0.82	0.51	[no flag]	2	MCMA – Discrete
CLTM3180964T2	O	0.37	0.50	A O	2	Composite – Member
CLTM3030569T1	E	0.79	0.65	O	2	Composite – Member
CLTM3180960T2	O	0.31	0.56	A O	1	MCSS Member
CLTM3030496T2-R	O	0.35	0.47	O	1	MCSS Discrete
CLTM3020060T2	E	0.36	0.51	O	1	MCSS Discrete
CLTM3020010T1	E	0.65	0.59	O	2	MCMA – Discrete
CLTM3030578T1-R	O	0.56	0.60	O	1	MCSS Discrete
CLTM3020171T1	E	0.82	0.42	[no flag]	2	MCMA – Discrete
CLTM3030591T1	E	1.15	0.39	[no flag]	2	ZoneMS Member
CLTM3020057T2	E	0.49	0.41	[no flag]	1	MCSS Discrete
CLTM3020054T2	E	0.66	0.38	[no flag]	2	MCMA – Discrete
CLTM3020202T2	E	0.47	0.43	[no flag]	1	MCSS Discrete
CLTM3030582T2	E	1.04	0.48	[no flag]	2	MatchMS Discrete
CLTM3030567T2	E	0.45	0.30	O	1	MCSS Member
CLTM3030499T2	E	0.71	0.36	[no flag]	2	Composite – Member
CLTM3030579T2	E	0.42	0.37	[no flag]	1	MCSS Discrete
CLTM3020205T3	E	0.41	0.41	O	1	MCSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM3020187T2	E	0.22	0.25	D A O	1	MCSS Discrete
CLTM3030502T3	E	0.43	0.38	O	1	MCSS Member
CLTM3020003T3	E	0.97	0.26	[no flag]	2	MCMA – Discrete
CLTM3020209T3	E	0.15	0.20	D A Rpoly	1	MCSS Discrete
CLTM3020204T2	E	0.38	0.47	[no flag]	1	MCSS Discrete
CLTM3030565T3	E	0.44	0.27	[no flag]	1	MCSS Member
CLTM3020066T2	E	0.64	0.51	[no flag]	1	MCSS Discrete
CLTM3020168T2	E	0.45	0.59	[no flag]	1	MCSS Discrete
CLTM3030583T3	E	0.86	0.41	[no flag]	2	MCMS Member
CLTM3181023T3	O	0.96	0.48	[no flag]	2	Composite – Member
CLTM3020058T3	E	0.10	0.49	A	1	Numeric Discrete
CLTM3020169T3	E	0.16	0.67	A	1	Numeric Discrete
CLTM3020173T3	E	0.83	0.41	[no flag]	2	MCMA – Discrete
CLTM3030574T3-R	O	0.92	0.71	[no flag]	2	BarPicturegraphMS Member
CLTM3030590T2	E	0.69	0.19	Rpoly	2	Composite – Member
CLTM3030710T3	E	0.67	0.36	[no flag]	2	InLineChoicelistMS Member
CLTM3020175T2	E	0.44	0.38	[no flag]	1	MCSS Discrete
CLTM3020203T3	E	0.34	0.41	[no flag]	1	MCSS Discrete
CLTM3030497T3-R	P	0.10	0.55	A	1	Numeric Discrete
CLTM3180958T1	P	0.59	0.49	[no flag]	1	MCSS Discrete
CLTM3181018T2	P	0.95	0.65	[no flag]	2	Composite – Discrete
CLTM3180887T1	P	0.72	0.62	[no flag]	1	ZoneSS Discrete
CLTM3180889T3	P	0.47	0.44	[no flag]	1	ZoneSS Discrete
CLTM3181024T1	P	0.57	0.36	[no flag]	1	MCSS Member
CLTM3180961T2	P	0.61	0.62	[no flag]	1	MCSS Member
CLTM3180890T1	P	0.61	0.26	[no flag]	1	ZoneSS Discrete
CLTM3181020T3	P	0.85	0.47	[no flag]	2	MCMS Discrete
CLTM3030501T2-R	P	0.42	0.62	O	1	MCSS Discrete
CLTM3180963T1	P	1.17	0.60	[no flag]	2	Composite – Member
CLTM3180891T2	P	0.30	0.54	A O	1	MCSS Member
CLTM3180957T1	P	0.63	0.42	[no flag]	1	MCSS Discrete
CLTM3180884T1	P	1.32	0.65	[no flag]	2	Composite – Member
CLTM3180888T2	P	0.47	0.39	[no flag]	1	MCSS Discrete
CLTM3180886T2	P	0.57	0.57	A	2	Composite – Member
CLTM3180962T3	P	0.71	0.54	[no flag]	2	Composite – Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM3180959T1	P	0.54	0.46	[no flag]	1	ZoneSS Discrete
CLTM3180885T2	P	0.95	0.70	[no flag]	2	BarPicturegraphMS Member
CLTM3030563T1-R	P	0.43	0.43	[no flag]	1	MCSS Member

Table 8.A.9 Average Item Score and Polyserial for Mathematics, Grade Four

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM4020255T1	E	0.79	0.56	[no flag]	1	MCSS Discrete
CLTM4030475T1	E	1.54	0.57	[no flag]	2	ZoneMS Discrete
CLTM4030481T1	E	0.69	0.45	[no flag]	1	MCSS Member
CLTM4020246T1	E	0.68	0.40	[no flag]	1	MCSS Discrete
CLTM4020177T1	E	1.24	0.51	[no flag]	2	ZoneMS Discrete
CLTM4020189T1	E	0.60	0.43	[no flag]	1	MCSS Discrete
CLTM4030612T1	E	1.50	0.64	[no flag]	2	ZoneMS Discrete
CLTM4030484T1	E	0.93	0.35	[no flag]	2	InLineChoicelistMS Member
CLTM4030482T2	E	0.57	0.64	[no flag]	1	MCSS Member
CLTM4020178T2	E	1.04	0.52	[no flag]	2	InLineChoicelistMS Discrete
CLTM4030490T1	E	0.42	0.29	O	1	MCSS Member
CLTM4181003T2	O	0.68	0.50	[no flag]	2	ZoneMS Member
CLTM4020170T1	E	0.90	0.43	[no flag]	2	MCMA – Discrete
CLTM4180848T1	O	0.50	0.37	O	1	MCSS Member
CLTM4180852T1	O	0.49	0.36	[no flag]	1	ZoneSS Member
CLTM4020252T1	E	0.53	0.30	O	1	MCSS Discrete
CLTM4020237T1	E	0.52	0.51	O	1	MCSS Discrete
CLTM4020231T1	E	0.90	0.54	[no flag]	2	ZoneMS Discrete
CLTM4030613T2	E	0.90	0.61	O	2	InLineChoicelistMS Member
CLTM4030650T1	E	1.28	0.64	[no flag]	2	InLineChoicelistMS Member
CLTM4180850T2	O	0.28	0.21	D A O	1	MCSS Member
CLTM4180854T2	O	0.31	0.41	A O	1	MCSS Member
CLTM4030494T2	E	0.83	0.48	O	2	Composite – Member
CLTM4020219T1	E	0.46	0.29	O	1	MCSS Discrete
CLTM4030476T2	E	0.71	0.65	O	2	MatchMS Member
CLTM4020253T2	E	0.38	0.45	[no flag]	1	MCSS Discrete
CLTM4020247T2	E	0.48	0.33	[no flag]	1	MCSS Discrete
CLTM4030668T1	E	0.40	0.29	[no flag]	1	MCSS Member
CLTM4020244T2	E	0.26	0.22	D A	1	MCSS Discrete
CLTM4020250T2	E	1.03	0.43	[no flag]	2	ZoneMS Discrete
CLTM4180853T2	O	0.27	0.37	A	1	MCSS Member
CLTM4030616T2-R	O	0.42	0.18	Rpoly	1	MCSS Discrete
CLTM4030479T2	E	0.83	0.57	[no flag]	2	Composite – Member
CLTM4020230T3	E	0.89	0.38	[no flag]	2	ZoneMS Discrete
CLTM4020238T2	O	0.35	0.21	[no flag]	1	MCSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM4020221T3	E	0.42	0.27	[no flag]	1	MCSS Discrete
CLTM4020212T3	E	0.84	0.43	[no flag]	2	ZoneMS Discrete
CLTM4180849T2	O	0.56	0.34	[no flag]	1	MCSS Member
CLTM4030491T2	E	0.44	0.56	[no flag]	1	MCSS Member
CLTM4020239T3	O	0.39	0.11	D Rpoly	1	MCSS Discrete
CLTM4030669T2	E	0.42	0.37	[no flag]	1	MCSS Member
CLTM4181004T3	O	0.66	0.55	[no flag]	2	Composite – Discrete
CLTM4020190T2	E	0.52	0.53	[no flag]	1	MCSS Discrete
CLTM4020233T3	E	0.94	0.59	[no flag]	2	MCMA – Discrete
CLTM4030617T3-R	O	0.49	0.40	[no flag]	1	MCSS Discrete
CLTM4030492T3-R	O	0.48	0.50	[no flag]	1	MCSS Discrete
CLTM4020224T3	E	0.63	0.32	[no flag]	2	InLineChoicelistMS Discrete
CLTM4030672T2	E	1.10	0.43	[no flag]	2	ZoneMS Discrete
CLTM4020194T3	E	0.43	0.28	[no flag]	1	MCSS Discrete
CLTM4020229T2	E	1.06	0.49	[no flag]	2	InLineChoicelistMS Discrete
CLTM4020245T3	E	0.47	0.44	[no flag]	1	MCSS Discrete
CLTM4180855T3	P	0.04	0.61	A	1	Numeric Member
CLTM4181000T1	P	0.46	0.43	[no flag]	1	ZoneSS Member
CLTM4181010T2	P	0.66	0.49	[no flag]	2	Composite – Member
CLTM4180857T2	P	0.59	0.60	[no flag]	1	ZoneSS Discrete
CLTM4180851T3	P	0.15	0.19	D A Rpoly	1	MCSS Member
CLTM4181002T1	P	1.39	0.70	[no flag]	2	ZoneMS Discrete
CLTM4180858T2	P	0.56	0.61	[no flag]	1	MatchSS Discrete
CLTM4181027T2	P	1.05	0.77	[no flag]	2	BarPicturegraphMS Member
CLTM4181035T3	P	0.43	0.60	O	1	MCSS Discrete
CLTM4181032T2	P	0.72	0.48	[no flag]	2	Composite – Member
CLTM4181005T1	P	1.16	0.62	[no flag]	2	Composite – Member
CLTM4030649T3-R	P	0.40	0.36	O	1	MCSS Discrete
CLTM4030652T3-R	P	0.79	0.50	[no flag]	2	Composite – Discrete
CLTM4181031T1	P	0.90	0.47	[no flag]	2	Composite – Discrete
CLTM4030648T2-R	P	0.22	0.41	A O	1	MCSS Member
CLTM4181006T2	P	0.62	0.39	[no flag]	2	Composite – Member
CLTM4030670T3-R	P	0.22	0.32	D A	1	MCSS Discrete
CLTM4181030T1	P	0.97	0.51	[no flag]	2	MatchMS Discrete
CLTM4181009T2	P	0.77	0.58	[no flag]	2	Composite – Member
CLTM4030673T3-R	P	0.97	0.33	[no flag]	2	ZoneMS Discrete

Table 8.A.10 Average Item Score and Polyserial for Mathematics, Grade Five

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM5030609T1	E	0.80	0.61	[no flag]	1	MCSS Member
CLTM5020180T1	E	0.77	0.54	[no flag]	1	MCSS Discrete
CLTM5020338T1	E	1.43	0.66	[no flag]	2	ZoneMS Discrete
CLTM5030557T1	E	0.66	0.42	[no flag]	1	MCSS Member
CLTM5030458T1	E	1.26	0.50	[no flag]	2	ZoneMS Discrete
CLTM5020184T2	E	0.93	0.45	[no flag]	2	MCMA - Discrete
CLTM5020268T2	E	0.84	0.52	[no flag]	2	ZoneMS Discrete
CLTM5030456T2	E	0.34	0.33	[no flag]	1	ZoneSS Member
CLTM5020258T1	E	0.53	0.50	[no flag]	1	MCSS Discrete
CLTM5020352T2	E	1.25	0.66	[no flag]	2	MCMA - Discrete
CLTM5030463T1	E	0.85	0.52	[no flag]	2	Composite - Member
CLTM5180906T2	O	0.27	0.56	A O	1	MCSS Member
CLTM5030676T1	E	0.81	0.51	[no flag]	2	ZoneMS Member
CLTM5020165T1	E	0.45	0.54	O	1	MCSS Discrete
CLTM5020404T1	E	0.51	0.24	[no flag]	1	MCSS Discrete
CLTM5020357T1	E	0.87	0.54	[no flag]	2	ZoneMS Discrete
CLTM5020354T1	E	0.45	0.53	O	1	MCSS Discrete
CLTM5180907T2	O	0.35	0.09	D Rpoly O	1	MCSS Member
CLTM5020183T1	E	0.98	0.52	[no flag]	2	ZoneMS Discrete
CLTM5020341T2	E	0.51	0.64	A	2	MCMA - Discrete
CLTM5020262T2	E	0.25	0.63	A O	1	MCSS Discrete
CLTM5020345T1	E	0.44	0.50	O	1	MCSS Discrete
CLTM5181015T2	O	0.54	0.65	A	2	Composite - Member
CLTM5030707T1-R	O	0.60	0.65	A	2	MCMA - Member
CLTM5030610T2	E	0.38	0.56	O	1	MCSS Member
CLTM5030561T2-R	O	0.36	0.31	[no flag]	1	InLineChoicelistSS Member
CLTM5030465T3	E	1.15	0.43	[no flag]	2	ZoneMS Member
CLTM5030464T2	E	1.03	0.31	[no flag]	2	InLineChoicelistMS Member
CLTM5020215T3	E	0.15	0.36	A	1	Graph Discrete
CLTM5020358T2	E	0.78	0.37	[no flag]	2	MCMA - Discrete
CLTM5030576T2	E	0.94	0.44	[no flag]	2	Composite - Member
CLTM5180968T2	O	0.21	0.25	A	1	InLineChoicelistSS Member
CLTM5020265T2	E	0.42	0.36	[no flag]	1	MCSS Discrete
CLTM5020355T2	E	0.29	0.12	D A Rpoly	1	MCSS Discrete
CLTM5020361T2	E	0.39	0.31	[no flag]	1	MCSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM5030575T1	E	0.97	0.46	[no flag]	2	Composite - Member
CLTM5180912T2	O	0.47	0.41	[no flag]	1	MCSS Member
CLTM5020359T3	E	1.10	0.41	[no flag]	2	ZoneMS Discrete
CLTM5030607T2	E	1.01	0.37	[no flag]	2	Composite - Member
CLTM5030708T2	E	0.97	0.48	[no flag]	2	Composite - Member
CLTM5181014T3	O	0.46	0.42	[no flag]	1	MCSS Member
CLTM5020346T2	E	0.46	0.55	[no flag]	1	MCSS Discrete
CLTM5020347T3	E	0.36	0.59	[no flag]	1	MCSS Discrete
CLTM5020343T2	E	0.28	0.30	A	1	InLineChoicelistSS Discrete
CLTM5020181T2	E	0.39	0.56	[no flag]	1	MCSS Discrete
CLTM5020356T3	E	0.46	0.35	[no flag]	1	MCSS Discrete
CLTM5030577T3	E	1.08	0.45	[no flag]	2	Composite - Member
CLTM5020344T3	E	0.41	0.46	[no flag]	1	MCSS Discrete
CLTM5030678T3	E	1.03	0.61	[no flag]	2	MatchMS Member
CLTM5030709T3	E	1.14	0.23	[no flag]	2	Composite - Member
CLTM5020259T2	E	0.46	0.35	[no flag]	1	MCSS Discrete
CLTM5180915T3	O	0.53	0.35	A	2	Composite - Member
CLTM5020266T3	E	0.23	0.68	A	1	Numeric Discrete
CLTM5030462T2	E	0.84	0.35	[no flag]	2	Composite - Member
CLTM5180909T2	P	0.56	0.42	A	2	Composite - Member
CLTM5030558T2-R	P	0.25	0.36	A	1	MCSS Discrete
CLTM5180971T1	P	1.11	0.51	[no flag]	2	Composite - Discrete
CLTM5180905T1	P	0.52	0.27	[no flag]	1	MCSS Member
CLTM5020349T2-R	P	0.29	0.30	A	1	MCSS Discrete
CLTM5181016T3	P	0.61	0.35	[no flag]	2	Composite - Member
CLTM5180970T1	P	0.46	0.32	[no flag]	1	ZoneSS Member
CLTM5180821T2	P	0.62	0.52	[no flag]	2	Composite - Member
CLTM5180818T1	P	1.47	0.49	[no flag]	2	ZoneMS Discrete
CLTM5030559T3-R	P	0.09	0.53	A	1	Numeric Discrete
CLTM5180908T2	P	0.65	0.48	[no flag]	2	Composite - Member
CLTM5030455T1-R	P	0.69	0.60	[no flag]	1	MCSS Member
CLTM5180911T1	P	0.66	0.51	[no flag]	1	ZoneSS Member
CLTM5180824T3	P	0.45	0.29	[no flag]	1	InLineChoicelistSS Member
CLTM5180819T2	P	0.70	0.53	[no flag]	2	Composite - Member
CLTM5180910T1	P	0.56	0.40	[no flag]	1	MCSS Member
CLTM5180904T1	P	0.50	0.23	[no flag]	1	MCSS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM5180967T2	P	0.29	0.59	A	1	ZoneSS Discrete
CLTM5180972T3	P	0.65	0.43	[no flag]	2	InLineChoicelistMS Member
CLTM5180822T1	P	1.13	0.51	[no flag]	2	ZoneMS Member

Table 8.A.11 Average Item Score and Polyserial for Mathematics, Grade Six

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM6020284T1	E	0.67	0.48	[no flag]	1	MCSS Discrete
CLTM6020198T1	E	0.64	0.37	[no flag]	1	MCSS Discrete
CLTM6020293T1	E	0.63	0.51	[no flag]	1	ZoneSS Discrete
CLTM6030685T1	E	0.67	0.51	[no flag]	1	MCSS Member
CLTM6020427T1	E	0.63	0.33	[no flag]	1	MCSS Discrete
CLTM6020287T1	E	1.26	0.49	[no flag]	2	MCMA – Discrete
CLTM6020314T1	E	0.90	0.42	[no flag]	2	MCMA – Discrete
CLTM6030683T2	E	0.52	0.63	[no flag]	1	InLineChoicelistSS Discrete
CLTM6020285T2	E	0.55	0.61	[no flag]	1	MCSS Discrete
CLTM6020364T2	E	0.84	0.52	[no flag]	2	MCMA – Discrete
CLTM6180894T2	O	0.41	0.46	[no flag]	1	InLineChoicelistSS Discrete
CLTM6030618T1	E	1.00	0.58	[no flag]	2	MCMA – Member
CLTM6030621T1	E	0.51	0.36	[no flag]	1	MCSS Member
CLTM6020320T1	E	0.42	0.23	O	1	MCSS Discrete
CLTM6030598T1	E	0.37	0.33	O	1	MCSS Member
CLTM6030472T1	E	0.46	0.43	O	1	MCSS Member
CLTM6020051T2	O	0.99	0.46	[no flag]	2	MCMA – Discrete
CLTM6020433T2	E	0.75	0.44	[no flag]	2	MCMA – Discrete
CLTM6030682T1	E	0.54	0.41	O	1	MCSS Member
CLTM6030599T2	E	0.49	0.34	[no flag]	1	MatchSS Member
CLTM6020291T2	E	0.86	0.28	[no flag]	2	MCMA – Discrete
CLTM6020097T1	E	0.44	0.45	[no flag]	1	ZoneMS Discrete
CLTM6020425T2	E	0.37	0.32	O	1	MCSS Discrete
CLTM6030469T1	E	0.99	0.46	[no flag]	2	InLineChoicelistMS Member
CLTM6020037T1	E	0.50	0.42	O	1	MCSS Discrete
CLTM6030637T3	E	0.46	0.28	[no flag]	1	MCSS Member
CLTM6030686T2-R	O	0.54	0.38	[no flag]	1	MCSS Discrete
CLTM6030602T2	E	0.70	0.35	[no flag]	2	InLineChoicelistMS Member
CLTM6020094T1	E	0.84	0.36	[no flag]	2	ZoneMS Discrete
CLTM6180988T2	O	0.56	0.43	[no flag]	1	InLineChoicelistSS Discrete
CLTM6020200T3	E	0.51	0.25	[no flag]	1	ZoneSS Discrete
CLTM6180989T2	O	0.53	0.42	[no flag]	1	MCSS Discrete
CLTM6030473T2	E	0.30	0.25	A	1	MCSS Discrete
CLTM6030619T2	E	0.66	0.27	[no flag]	2	InLineChoicelistMS Member
CLTM6020367T2	E	0.66	0.46	[no flag]	2	ZoneMS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM6030635T1	E	0.51	0.33	[no flag]	1	MCSS Member
CLTM6020039T3	E	0.85	0.43	[no flag]	2	InLineChoicelistMS Discrete
CLTM6020199T2	E	0.65	0.54	[no flag]	1	MCSS Discrete
CLTM6030622T2	E	0.61	0.50	[no flag]	1	MCSS Member
CLTM6020099T3	E	0.20	0.17	A Rpoly	1	ZoneSS Discrete
CLTM6020368T3	E	0.95	0.34	[no flag]	2	InLineChoicelistMS Discrete
CLTM6020434T3	E	1.10	0.51	[no flag]	2	ZoneMS Discrete
CLTM6020295T3	E	0.40	0.71	[no flag]	1	Numeric Discrete
CLTM6030687T3	E	0.47	0.31	[no flag]	1	ZoneSS Member
CLTM6030603T3	E	0.97	0.59	[no flag]	2	InLineChoicelistMS Member
CLTM6020322T3	E	0.28	0.31	A	1	MCSS Discrete
CLTM6020041T2	E	0.54	0.67	[no flag]	1	MCSS Discrete
CLTM6020289T3	E	0.96	0.37	[no flag]	2	MCMA - Discrete
CLTM6180981T1	P	1.28	0.62	[no flag]	2	Composite - Discrete
CLTM6180893T2	P	0.53	0.56	[no flag]	1	MCSS Discrete
CLTM6180898T1	P	0.71	0.61	[no flag]	1	MCSS Member
CLTM6180901T3	P	1.06	0.69	[no flag]	2	Composite - Discrete
CLTM6180832T2	P	0.52	0.51	[no flag]	1	MCSS Discrete
CLTM6180835T2	P	0.49	0.67	[no flag]	1	MCSS Discrete
CLTM6180899T2	P	0.57	0.55	A	2	Composite - Member
CLTM6180836T2	P	0.43	0.45	[no flag]	1	MCSS Discrete
CLTM6180986T1	P	0.61	0.54	[no flag]	1	MCSS Discrete
CLTM6180979T2	P	0.63	0.49	[no flag]	2	Composite - Member
CLTM6180897T2	P	0.42	0.46	O	1	ZoneSS Discrete
CLTM6180903T2	P	0.39	0.55	[no flag]	1	MCSS Member
CLTM6030636T2-R	P	0.47	0.43	[no flag]	1	MCSS Discrete
CLTM6180896T1	P	0.63	0.37	[no flag]	1	MCSS Discrete
CLTM6180985T2	P	0.34	0.42	[no flag]	1	MatchSS Discrete
CLTM6180987T1	P	1.04	0.51	[no flag]	2	Composite - Discrete
CLTM6180983T1	P	0.99	0.46	[no flag]	2	Composite - Member
CLTM6180978T3	P	0.41	0.52	[no flag]	1	ZoneSS Discrete
CLTM6180984T1	P	0.65	0.47	[no flag]	1	MCSS Member
CLTM6180980T2	P	1.15	0.70	[no flag]	2	Composite - Discrete

Table 8.A.12 Average Item Score and Polyserial for Mathematics, Grade Seven

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM7020050T1	E	0.80	0.55	[no flag]	1	MCSS Discrete
CLTM7030688T1	E	0.68	0.53	[no flag]	1	MCSS Member
CLTM7020085T1	E	0.65	0.47	[no flag]	1	MCSS Discrete
CLTM7020280T1	E	0.74	0.62	[no flag]	1	MCSS Discrete
CLTM7020047T1	E	1.36	0.50	[no flag]	2	MCMA - Discrete
CLTM7020091T1	E	1.42	0.71	[no flag]	2	ZoneMS Discrete
CLTM7020299T1	E	0.64	0.33	[no flag]	1	MCSS Discrete
CLTM7020089T2	E	0.99	0.46	[no flag]	2	ZoneMS Discrete
CLTM7020048T2	E	1.09	0.23	[no flag]	2	ZoneMS Discrete
CLTM7020092T2	E	1.35	0.76	L	2	ZoneMS Discrete
CLTM7020034T1	E	0.53	0.36	O	1	MCSS Discrete
CLTM7030522T2	E	0.82	0.45	[no flag]	2	ZoneMS Member
CLTM7030691T1	E	0.49	0.39	O	1	MCSS Member
CLTM7020323T1	E	0.35	0.34	D O	1	MCSS Discrete
CLTM7020329T1	E	0.67	0.51	O	2	ZoneMS Discrete
CLTM7020296T1	E	0.47	0.37	O	1	MCSS Discrete
CLTM7020369T1	E	0.51	0.47	O	1	MCSS Discrete
CLTM7020419T2	E	0.70	0.46	[no flag]	2	InLineChoicelistMS Discrete
CLTM7020327T2	E	0.71	0.50	[no flag]	2	MCMA - Discrete
CLTM7030515T1	E	0.86	0.58	O	2	InLineChoicelistMS Member
CLTM7020086T2	E	0.37	0.53	O	1	MCSS Discrete
CLTM7030512T1	E	0.69	0.58	O	2	InLineChoicelistMS Member
CLTM7030585T2	E	0.88	0.39	[no flag]	2	ZoneMS Member
CLTM7030518T1	E	0.88	0.45	[no flag]	2	MCMA - Member
CLTM7020330T2	E	0.51	0.45	A O	2	ZoneMS Discrete
CLTM7030653T1	E	0.50	0.44	[no flag]	1	MCSS Discrete
CLTM7030509T1	E	1.12	0.45	[no flag]	2	InLineChoicelistMS Member
CLTM7020297T2	E	0.39	0.53	[no flag]	1	InLineChoicelistSS Discrete
CLTM7020418T1	E	0.89	0.28	[no flag]	2	MCMA - Discrete
CLTM7030516T2	E	0.68	0.42	[no flag]	2	InLineChoicelistMS Member
CLTM7030519T2	E	0.68	0.44	[no flag]	2	InLineChoicelistMS Member
CLTM7020300T2	E	0.31	0.37	A O	1	MCSS Discrete
CLTM7020328T3	E	0.92	0.36	[no flag]	2	ZoneMS Discrete
CLTM7020282T2	E	0.68	0.45	[no flag]	2	InLineChoicelistMS Discrete
CLTM7020298T3	E	0.40	0.47	[no flag]	1	InLineChoicelistSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM7030510T2	E	0.83	0.52	[no flag]	2	InLineChoicelistMS Member
CLTM7020451T3	E	0.23	0.29	D A O	1	MCSS Discrete
CLTM7020324T2	E	0.33	0.37	A O	1	MCSS Discrete
CLTM7020093T3	E	0.79	0.42	[no flag]	2	InLineChoicelistMS Discrete
CLTM7030705T2	E	0.37	0.58	[no flag]	1	MCSS Member
CLTM7020373T2	E	0.94	0.54	[no flag]	2	InLineChoicelistMS Discrete
CLTM7020423T3	E	0.35	0.43	[no flag]	1	MCSS Discrete
CLTM7030589T3	E	0.37	0.59	[no flag]	1	InLineChoicelistSS Member
CLTM7020371T3	E	0.35	0.46	[no flag]	1	MCSS Discrete
CLTM7020035T2	E	0.56	0.66	[no flag]	1	MCSS Discrete
CLTM7030514T3	E	0.94	0.44	[no flag]	2	InLineChoicelistMS Discrete
CLTM7030586T3	E	0.78	0.33	[no flag]	2	InLineChoicelistMS Member
CLTM7020331T3	E	0.92	0.49	[no flag]	2	InLineChoicelistMS Discrete
CLTM7020036T3	E	0.14	0.62	A	1	Numeric Discrete
CLTM7180846T3	P	1.25	0.52	[no flag]	2	ZoneMS Member
CLTM7030587T1-R	P	0.76	0.64	[no flag]	1	MCSS Discrete
CLTM7180937T1	P	0.98	0.40	[no flag]	2	Composite - Discrete
CLTM7180994T2	P	1.21	0.72	[no flag]	2	Composite - Member
CLTM7030704T1-R	P	0.66	0.43	[no flag]	1	MCSS Member
CLTM7180997T2	P	0.52	0.37	A	2	Composite - Member
CLTM7180996T2	P	0.47	0.46	[no flag]	1	MCSS Member
CLTM7180927T1	P	1.13	0.53	[no flag]	2	Composite - Member
CLTM7180932T2	P	1.04	0.59	[no flag]	2	MatchMS Member
CLTM7030696T3-R	P	0.11	0.54	A	1	Numeric Member
CLTM7180951T1	P	1.08	0.50	[no flag]	2	Composite - Discrete
CLTM7180993T1	P	1.13	0.70	[no flag]	2	Composite - Member
CLTM7180933T2	P	0.88	0.56	[no flag]	2	Composite - Member
CLTM7180928T1	P	0.61	0.34	[no flag]	1	MCSS Member
CLTM7180953T2	P	0.87	0.38	[no flag]	2	ZoneMS Discrete
CLTM7030511T3-R	P	0.95	0.48	[no flag]	2	ZoneMS Member
CLTM7180949T1	P	1.17	0.68	[no flag]	2	InLineChoicelistMS Discrete
CLTM7180935T2	P	0.11	0.72	A	1	Numeric Member
CLTM7180952T2	P	1.05	0.59	[no flag]	2	ZoneMS Discrete
CLTM7180995T3	P	0.90	0.69	[no flag]	2	Composite - Member

Table 8.A.13 Average Item Score and Polyserial for Mathematics, Grade Eight

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM8020332T1	E	0.81	0.49	[no flag]	1	MCSS Discrete
CLTM8030638T1	E	0.76	0.42	[no flag]	1	MCSS Discrete
CLTM8020302T1	E	0.70	0.42	[no flag]	1	MCSS Discrete
CLTM8020028T1	E	1.37	0.61	[no flag]	2	InLineChoicelistMS Discrete
CLTM8030530T1	E	1.04	0.37	[no flag]	2	MCMA - Member
CLTM8030536T2	E	0.97	0.38	[no flag]	2	InLineChoicelistMS Member
CLTM8020305T1	E	0.92	0.40	[no flag]	2	MCMA - Discrete
CLTM8020416T2	E	0.77	0.42	[no flag]	2	InLineChoicelistMS Discrete
CLTM8020277T1	E	1.03	0.47	[no flag]	2	MCMA - Discrete
CLTM8030539T2	E	1.02	0.44	[no flag]	2	InLineChoicelistMS Member
CLTM8020079T1	E	0.55	0.39	O	1	MCSS Discrete
CLTM8020278T1	E	0.51	0.44	O	1	MCSS Discrete
CLTM8030535T1	E	1.04	0.66	[no flag]	2	MCMA - Member
CLTM8030528T2	E	0.98	0.38	[no flag]	2	InLineChoicelistMS Member
CLTM8030697T1	E	0.45	0.48	O	1	MCSS Discrete
CLTM8030659T1	E	0.51	0.47	O	1	MCSS Member
CLTM8180880T2	O	0.25	0.40	A O	1	MCSS Member
CLTM8020378T1	E	0.90	0.57	[no flag]	2	MCMA - Discrete
CLTM8180817T2	O	0.48	0.65	[no flag]	1	ZoneSS Discrete
CLTM8020412T1	E	0.52	0.39	O	1	MCSS Discrete
CLTM8020388T1	E	0.46	0.43	O	1	MCSS Discrete
CLTM8180975T2	O	0.59	0.66	[no flag]	1	MCSS Discrete
CLTM8030538T1	E	0.95	0.63	[no flag]	2	MCMA - Member
CLTM8020029T2	E	0.86	0.57	O	2	InLineChoicelistMS Discrete
CLTM8180860T1	O	0.39	0.41	O	1	ZoneSS Discrete
CLTM8030527T1	E	1.05	0.56	[no flag]	2	MCMA - Member
CLTM8030624T1	E	0.53	0.45	[no flag]	1	ZoneSS Discrete
CLTM8020390T3	E	0.15	0.48	A	1	Numeric Discrete
CLTM8020026T2	E	0.43	0.35	[no flag]	1	MCSS Discrete
CLTM8020379T2	E	0.42	0.33	A	2	ZoneMS Discrete
CLTM8030663T2	E	0.35	0.27	[no flag]	1	MCSS Member
CLTM8020083T2	E	0.43	0.27	[no flag]	1	InLineChoicelistSS Discrete
CLTM8030698T2	E	0.48	0.42	[no flag]	1	MCSS Member
CLTM8020030T3	E	0.77	0.53	[no flag]	2	InLineChoicelistMS Discrete
CLTM8020415T1	E	1.05	0.51	[no flag]	2	MCMA - Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM8020084T3	E	0.42	0.46	[no flag]	1	InLineChoicelistSS Discrete
CLTM8020080T2	E	0.73	0.42	[no flag]	2	InLineChoicelistMS Discrete
CLTM8020307T3	E	1.06	0.60	[no flag]	2	InLineChoicelistMS Discrete
CLTM8020027T3	E	0.41	0.57	[no flag]	1	MCSS Discrete
CLTM8020046T2	E	0.47	0.33	A	2	ZoneMS Discrete
CLTM8020393T3	E	0.63	0.20	[no flag]	2	InLineChoicelistMS Discrete
CLTM8020279T3	E	0.54	0.41	[no flag]	1	MCSS Discrete
CLTM8030540T3	E	0.82	0.42	[no flag]	2	InLineChoicelistMS Member
CLTM8020392T2	E	0.86	0.52	[no flag]	2	InLineChoicelistMS Discrete
CLTM8020453T3	E	0.44	0.46	[no flag]	1	ZoneSS Discrete
CLTM8020417T3	E	0.88	0.50	[no flag]	2	InLineChoicelistMS Discrete
CLTM8020069T2	E	0.31	0.32	A	1	ZoneSS Discrete
CLTM8020380T3	E	0.60	0.36	A	2	ZoneMS Discrete
CLTM8030537T3	E	0.96	0.44	[no flag]	2	InLineChoicelistMS Member
CLTM8180881T3	P	0.40	0.54	O	1	ZoneSS Member
CLTM8180805T2	P	0.74	0.59	[no flag]	1	MCSS Discrete
CLTM8180862T1	P	1.08	0.52	[no flag]	2	InLineChoicelistMS Discrete
CLTM8180877T2	P	0.44	0.43	[no flag]	1	MCSS Member
CLTM8030524T1-R	P	0.67	0.54	O	1	ZoneSS Discrete
CLTM8180815T2	P	0.71	0.57	[no flag]	1	MatchSS Member
CLTM8180865T2	P	0.72	0.55	[no flag]	2	Composite - Member
CLTM8180804T3	P	1.22	0.58	[no flag]	2	MCMS Member
CLTM8180802T1	P	1.22	0.52	[no flag]	2	Composite - Member
CLTM8030660T2-R	P	0.43	0.50	[no flag]	1	MCSS Discrete
CLTM8180808T3	P	0.67	0.60	[no flag]	2	Composite - Member
CLTM8030625T2-R	P	0.34	0.19	D Rpoly	1	MCSS Discrete
CLTM8180874T1	P	0.58	0.55	[no flag]	1	MatchSS Discrete
CLTM8030661T3-R	P	0.50	0.31	[no flag]	1	ZoneMS Discrete
CLTM8180867T2	P	0.60	0.54	[no flag]	2	Composite - Member
CLTM8180816T1	P	0.68	0.46	[no flag]	1	MCSS Discrete
CLTM8180814T1	P	0.79	0.50	[no flag]	1	MCSS Member
CLTM8180863T2	P	0.74	0.55	[no flag]	2	Composite - Member
CLTM8180866T1	P	1.36	0.60	[no flag]	2	InLineChoicelistMS Member
CLTM8180869T3	P	0.29	0.67	A	1	Numeric Discrete

Table 8.A.14 Average Item Score and Polyserial for Mathematics, Grade Eleven

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTMH020019T1	E	0.74	0.42	[no flag]	1	MCSS Discrete
CLTMH020272T1	E	0.72	0.50	[no flag]	1	MCSS Discrete
CLTMH020447T1	E	0.61	0.69	[no flag]	1	ZoneSS Discrete
CLTMH030553T1	E	0.70	0.48	[no flag]	1	MCSS Discrete
CLTMH020406T1	E	1.01	0.44	[no flag]	2	MCMA - Discrete
CLTMH030642T2	E	1.03	0.48	[no flag]	2	InLineChoicelistMS Member
CLTMH020397T1	E	1.03	0.58	[no flag]	2	MCMA - Discrete
CLTMH030628T2	E	0.52	0.65	[no flag]	1	MCSS Member
CLTMH020076T1	E	0.51	0.66	[no flag]	1	ZoneSS Discrete
CLTMH030555T2	E	0.99	0.48	[no flag]	2	InLineChoicelistMS Member
CLTMH020022T1	E	0.51	0.39	[no flag]	1	MCSS Discrete
CLTMH020043T1	E	0.35	0.51	[no flag]	1	ZoneSS Discrete
CLTMH030645T2	E	1.48	0.69	[no flag]	2	InLineChoicelistMS Member
CLTMH030549T1	E	0.43	0.44	O	1	MCSS Member
CLTMH020398T2	E	1.08	0.54	[no flag]	2	ZoneMS Discrete
CLTMH030644T1	E	0.74	0.70	L	2	MatchMS Member
CLTMH030630T1	E	0.35	0.47	[no flag]	1	ZoneSS Discrete
CLTMH020068T1	E	0.58	0.51	[no flag]	1	MCSS Discrete
CLTMH030665T1	E	0.80	0.71	L	2	MatchMS Member
CLTMH030551T2	E	1.16	0.56	[no flag]	2	ZoneMS Member
CLTMH180926T1	O	0.47	0.28	O	1	MCSS Member
CLTMH020020T2	E	0.51	0.51	O	1	MCSS Discrete
CLTMH030666T2	E	1.26	0.61	[no flag]	2	InLineChoicelistMS Member
CLTMH020336T2	E	0.35	0.57	[no flag]	1	ZoneMS Discrete
CLTMH020381T1	E	0.80	0.57	[no flag]	2	MCMA - Discrete
CLTMH030641T1	E	1.06	0.53	[no flag]	2	MCMA - Member
CLTMH020045T3	E	0.48	0.28	[no flag]	1	MCSS Discrete
CLTMH020402T2	E	0.94	0.39	[no flag]	2	InLineChoicelistMS Discrete
CLTMH030542T2	E	0.43	0.22	[no flag]	1	ZoneMS Discrete
CLTMH020044T2	E	0.29	0.19	D A Rpoly	1	MCSS Discrete
CLTMH020400T2	E	0.34	0.15	Rpoly	1	MCSS Discrete
CLTMH020385T2	E	0.90	0.33	[no flag]	2	MCMA - Discrete
CLTMH020270T2	E	0.37	0.25	[no flag]	1	MCSS Discrete
CLTMH020077T2	E	0.36	0.28	[no flag]	1	ZoneSS Discrete
CLTMH030552T3	E	1.09	0.46	[no flag]	2	InLineChoicelistMS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTMH020337T3	E	0.56	0.29	[no flag]	1	MCSS Discrete
CLTMH030712T1	E	0.44	0.53	[no flag]	1	ZoneSS Member
CLTMH020023T2	E	0.62	0.62	[no flag]	1	MCSS Discrete
CLTMH020313T3	E	0.58	0.40	[no flag]	1	MCSS Discrete
CLTMH030646T3	E	1.66	0.79	H	2	BarPicturegraphMS Member
CLTMH020078T3	E	0.33	0.25	A	1	ZoneSS Discrete
CLTMH020382T2	E	0.80	0.49	[no flag]	2	MCMA - Discrete
CLTMH030543T3	E	0.53	0.53	[no flag]	1	MCSS Discrete
CLTMH030667T3	E	1.69	0.80	H	2	BarPicturegraphMS Member
CLTMH020401T3	E	0.49	0.47	[no flag]	1	ZoneSS Discrete
CLTMH030714T3	E	0.32	0.36	A	1	MCSS Discrete
CLTMH020407T2	E	1.01	0.52	[no flag]	2	MCMA - Discrete
CLTMH030631T2	E	0.36	0.23	[no flag]	1	MCSS Discrete
CLTMH020446T3	E	0.27	0.65	A	1	Numeric Discrete
CLTMH030643T3	E	0.88	0.44	[no flag]	2	InLineChoicelistMS Member
CLTMH180831T3	P	0.19	0.64	A	1	Numeric Discrete
CLTMH180826T1	P	0.70	0.49	[no flag]	1	MCSS Member
CLTMH180919T2	P	1.11	0.65	[no flag]	2	Composite - Member
CLTMH180924T2	P	0.53	0.51	[no flag]	1	MCSS Member
CLTMH180917T3	P	0.20	0.74	A	2	Composite - Member
CLTMH180813T1	P	0.51	0.30	[no flag]	1	MCSS Discrete
CLTMH180828T2	P	0.54	0.55	[no flag]	1	InLineChoicelistSS Member
CLTMH180812T2	P	0.27	0.14	D A Rpoly	1	MCSS Member
CLTMH180947T3	P	0.46	0.52	A	2	Composite - Member
CLTMH180830T2	P	0.62	0.67	[no flag]	1	InLineChoicelistSS Member
CLTMH180811T1	P	1.22	0.54	[no flag]	2	MCMA - Member
CLTMH030713T2-R	P	0.27	0.34	A	1	MCSS Discrete
CLTMH180809T3	P	1.07	0.79	[no flag]	2	BarPicturegraphMS Member
CLTMH180976T2	P	0.65	0.71	[no flag]	1	MCSS Member
CLTMH180827T2	P	0.56	0.39	[no flag]	1	MCSS Member
CLTMH180940T2	P	0.70	0.62	[no flag]	1	ZoneMS Discrete
CLTMH030634T3-R	P	0.16	0.61	A	1	Numeric Discrete
CLTMH180921T1	P	0.99	0.70	[no flag]	2	MatchMS Member
CLTMH030633T2-R	P	0.43	0.49	[no flag]	1	MCSS Member
CLTMH180943T2	P	0.70	0.42	[no flag]	2	Composite - Member

Note: In [Table 8.A.15](#) through [Table 8.A.28](#), the columns *Score 0*, *Score 1*, and *Score 2* indicate the possible scores for the item.

Table 8.A.15 Distribution of Item Scores for ELA, Grade Three

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTW3020108T1	E	1	13%	74%	NA	13%	4,119
CLTR3020057T1-M	E	2	4%	42%	50%	5%	4,119
CLTR3020059T1-O	E	2	13%	6%	78%	2%	4,119
CLTW3020095T1	E	2	3%	37%	58%	2%	4,114
CLTR3020140T2-M	E	2	3%	46%	48%	3%	4,114
CLTR3020142T2-M	E	2	36%	15%	44%	4%	4,114
CLTR3020053T1-M	E	1	35%	50%	NA	14%	1,827
CLTR3020170T1	E	2	48%	17%	24%	11%	1,827
CLTR3020169T1	E	2	7%	55%	26%	12%	1,827
CLTW3020171T1-R	O	1	57%	32%	NA	11%	1,827
CLTR3040231T1	O	1	6%	78%	NA	15%	1,827
CLTW3020146T2	E	2	4%	62%	26%	8%	1,827
CLTW3020145T2-M	E	2	10%	42%	31%	16%	1,827
CLTW3040186T2	O	2	29%	43%	19%	9%	1,827
CLTR3030110T2	O	2	4%	44%	43%	8%	1,827
CLTW3030030T1	E	2	22%	32%	44%	3%	1,406
CLTR3030136T1	O	2	6%	32%	62%	0%	1,406
CLTW3020165T2	O	1	31%	66%	NA	3%	1,406
CLTW3030082T2	E	2	5%	41%	52%	2%	1,406
CLTW3030113T2	E	2	17%	20%	61%	2%	2,231
CLTR3040181T2	O	2	7%	35%	55%	3%	2,231
CLTW3020403T3	E	2	33%	25%	36%	6%	2,231
CLTW3020161T2	E	1	60%	38%	NA	2%	2,231
CLTR3040187T2	O	2	5%	76%	17%	2%	825
CLTW3020179T3	E	2	28%	35%	33%	4%	825
CLTW3030160T3	E	2	30%	20%	44%	5%	825
CLTR3030166T3	O	2	3%	48%	48%	1%	825
CLTR3040190T3	O	2	0%	18%	81%	1%	825
CLTR3040025T1	P	2	3%	32%	63%	3%	1,082
CLTW3040004T1	P	1	37%	54%	NA	9%	1,082
CLTR3040038T1	P	2	7%	55%	33%	6%	758
CLTR3040040T1	P	1	44%	46%	NA	9%	758
CLTW3040227T2	P	1	62%	26%	NA	13%	758
CLTR3040232T1	P	2	5%	43%	49%	4%	755
CLTR3040183T2	P	2	3%	37%	56%	4%	755
CLTW3040184T2	P	1	55%	39%	NA	7%	755
CLTW3040086T2	P	2	9%	41%	38%	12%	782

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTR3030164T3	P	2	2%	39%	55%	3%	737
CLTW3040193T3	P	2	42%	22%	28%	8%	737
CLTR3040192T3	P	2	30%	9%	58%	3%	737

Table 8.A.16 Distribution of Item Scores for ELA, Grade Four

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTR4020305T1-M	E	2	4%	41%	50%	6%	4,444
CLTW4020306T1-O	E	2	5%	45%	47%	3%	4,444
CLTW4020240T1-M	E	2	8%	27%	61%	5%	4,419
CLTR4030021T2	E	2	6%	58%	29%	7%	4,419
CLTR4020257T1-M	E	2	7%	51%	33%	9%	1,553
CLTR4020258T1-M	E	2	33%	10%	49%	8%	1,553
CLTR4030171T1	O	2	2%	37%	57%	4%	3,170
CLTW4040203T1	O	1	26%	62%	NA	12%	1,553
CLTR4020117T2	E	2	8%	54%	29%	8%	1,553
CLTR4030024T2	E	2	9%	62%	16%	13%	1,553
CLTR4030025T2	E	2	47%	20%	21%	11%	1,553
CLTR4030172T1	E	2	11%	40%	49%	1%	1,617
CLTR4030062T2	O	2	6%	24%	69%	1%	2,797
CLTR4040005T2	O	1	21%	77%	NA	2%	1,617
CLTR4020091T2	E	2	10%	65%	23%	2%	1,617
CLTR4020092T2	E	2	34%	21%	43%	2%	1,617
CLTR4040072T2	O	2	12%	57%	28%	2%	1,617
CLTR4020244T3-M	E	2	48%	28%	20%	4%	1,617
CLTW4020246T3	E	2	35%	39%	19%	6%	1,617
CLTR4020120T2-M	E	2	17%	49%	32%	2%	1,180
CLTW4020121T2-M	E	1	44%	54%	NA	2%	1,180
CLTR4030090T3	E	2	7%	57%	35%	1%	1,180
CLTR4030091T3	E	2	22%	14%	63%	2%	1,180
CLTW4030132T3-R	O	1	44%	55%	NA	1%	1,180
CLTW4030133T3-R	O	2	19%	29%	48%	3%	1,180
CLTR4040007T1	P	2	7%	27%	61%	4%	1,043
CLTW4040008T1	P	2	5%	51%	38%	6%	1,043
CLTR4040002T2	P	1	38%	55%	NA	7%	832
CLTR4040003T2	P	2	15%	12%	68%	5%	832
CLTR4040101T1	P	2	3%	38%	54%	4%	805
CLTR4040201T1	P	2	2%	52%	43%	3%	805
CLTR4040052T2	P	2	4%	55%	34%	8%	881
CLTW4040076T2	P	2	5%	45%	45%	5%	881
CLTR4040070T2	P	2	2%	46%	48%	3%	858
CLTW4040009T3	P	2	38%	25%	28%	8%	858

Table 8.A.17 Distribution of Item Scores for ELA, Grade Five

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTW5020317T1	E	2	2%	31%	66%	1%	4,455
CLTR5020453T1-M	E	2	1%	20%	77%	1%	4,455
CLTW5020454T1-M	E	2	3%	43%	51%	2%	4,455
CLTR5030154T1	E	2	4%	31%	63%	2%	4,455
CLTR5030156T1	E	2	2%	31%	64%	2%	4,428
CLTR5030185T2	E	2	1%	31%	66%	2%	4,428
CLTR5020254T2-M	E	2	3%	50%	43%	5%	4,428
CLTR5020328T1-M	E	2	10%	51%	30%	9%	1,349
CLTR5030264T1	O	2	6%	62%	23%	9%	1,349
CLTR5020047T2	E	2	4%	63%	26%	7%	1,349
CLTR5020346T2	E	2	36%	19%	39%	6%	1,349
CLTR5030183T2	O	2	6%	64%	21%	8%	1,349
CLTW5040105T2	O	2	8%	61%	22%	9%	1,349
CLTR5030123T1-M	O	2	46%	20%	32%	2%	1,669
CLTW5030124T1	E	2	0%	42%	54%	5%	1,669
CLTR5030180T2	E	2	2%	42%	52%	3%	1,669
CLTR5020342T2	E	2	39%	11%	49%	1%	3,014
CLTR5040110T2	O	2	7%	27%	62%	4%	1,669
CLTW5040111T2	O	2	5%	23%	68%	3%	1,669
CLTW5030139T3	O	1	36%	62%	NA	3%	1,669
CLTR5040088T2	O	2	1%	27%	70%	1%	1,345
CLTR5040089T2	O	2	29%	14%	56%	1%	1,345
CLTR5040115T2	O	2	0%	27%	73%	0%	1,345
CLTR5020038T3-M	E	1	66%	34%	NA	1%	1,345
CLTW5020040T3-M	E	2	43%	31%	23%	3%	1,345
CLTR5020341T3	E	2	1%	72%	26%	1%	1,345
CLTR5040171T3	O	1	35%	63%	NA	1%	1,345
CLTW5040230T3	O	2	10%	17%	69%	3%	1,345
CLTW5040174T3	O	1	23%	76%	NA	1%	1,345
CLTR5040013T1	P	2	2%	21%	73%	3%	1,028
CLTW5040015T1	P	2	5%	29%	60%	5%	1,028
CLTW5030187T2-R	P	1	41%	54%	NA	5%	906
CLTR5040034T1	P	2	2%	36%	58%	3%	906
CLTR5040118T2	P	2	2%	36%	61%	1%	831
CLTR5020250T3	P	2	20%	34%	41%	4%	831
CLTW5020251T3	P	2	14%	25%	55%	6%	831
CLTR5040018T1	P	2	23%	8%	65%	5%	820
CLTR5040017T1	P	2	2%	29%	61%	8%	820
CLTR5020336T1	P	2	23%	7%	68%	1%	843

Table 8.A.18 Distribution of Item Scores for ELA, Grade Six

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTR6020097T1	E	2	9%	4%	86%	1%	4,572
CLTR6030030T1	E	2	17%	13%	69%	2%	4,572
CLTW6030032T1-O	E	2	12%	42%	44%	3%	4,572
CLTW6030202T1	E	1	29%	69%	NA	2%	4,533
CLTW6020104T1	E	2	4%	45%	50%	2%	4,533
CLTR6020204T2	E	2	2%	39%	57%	2%	4,533
CLTR6020202T2	E	2	4%	42%	51%	3%	4,533
CLTW6030012T1-R	O	1	49%	26%	NA	25%	408
CLTR6030011T1-R	O	2	51%	23%	7%	19%	408
CLTR6020098T1	E	2	14%	60%	13%	13%	408
CLTR6030042T1	O	2	47%	8%	31%	13%	408
CLTR6020099T1	E	2	39%	8%	40%	13%	408
CLTR6030074T2-R	O	1	71%	7%	NA	21%	408
CLTW6030075T2	E	2	20%	30%	20%	29%	408
CLTW6040204T2	O	1	52%	28%	NA	20%	408
CLTR6030128T2	O	2	18%	46%	16%	19%	408
CLTW6030066T1	E	2	17%	56%	21%	6%	2,029
CLTW6040166T2	O	2	4%	59%	34%	3%	2,029
CLTR6030261T2	O	2	17%	53%	25%	5%	2,029
CLTR6030262T2	O	2	28%	13%	52%	6%	2,029
CLTW6040165T2	O	1	57%	38%	NA	5%	2,029
CLTR6030197T2	E	1	50%	45%	NA	5%	4,085
CLTR6030148T2	E	2	8%	55%	30%	8%	2,029
CLTW6030149T2	E	1	45%	47%	NA	8%	2,029
CLTR6030205T3	E	2	10%	62%	23%	4%	2,029
CLTW6040033T3	O	1	69%	25%	NA	6%	2,029
CLTR6040030T3	O	2	16%	59%	20%	5%	2,029
CLTR6040163T2	O	1	53%	47%	NA	0%	2,056
CLTW6040168T2	O	2	0%	16%	83%	1%	2,056
CLTR6040170T2	O	1	58%	41%	NA	1%	2,056
CLTW6020209T2	E	2	18%	45%	34%	3%	2,056
CLTW6030228T3	O	1	30%	69%	NA	1%	2,056
CLTR6020418T3	E	2	47%	23%	28%	2%	2,056
CLTR6020416T3	E	1	66%	31%	NA	3%	2,056
CLTR6020417T3	E	2	5%	65%	27%	3%	2,056
CLTR6040032T3	O	2	4%	50%	44%	1%	2,056
CLTR6040010T3	O	2	1%	26%	70%	2%	2,056
CLTW6040012T3	O	2	33%	33%	28%	5%	2,056

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTW6040123T1	P	2	3%	35%	60%	2%	1,075
CLTR6040112T1	P	2	12%	7%	78%	3%	1,075
CLTR6040176T2	P	2	2%	27%	67%	4%	844
CLTW6040177T2	P	1	32%	62%	NA	5%	844
CLTR6040106T1	P	1	29%	68%	NA	3%	947
CLTR6040107T1	P	2	30%	24%	40%	5%	947
CLTR6040167T2	P	2	2%	47%	48%	3%	947
CLTR6040236T1	P	2	3%	48%	45%	4%	835
CLTR6040121T1	P	2	21%	12%	63%	3%	835
CLTW6040138T1	P	1	50%	45%	NA	4%	832

Table 8.A.19 Distribution of Item Scores for ELA, Grade Seven

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTW7020412T1	E	2	3%	70%	26%	1%	4,555
CLTW7020386T1	E	2	4%	53%	41%	1%	4,519
CLTR7020368T2	E	2	3%	57%	38%	2%	4,519
CLTR7030070T2	E	2	4%	57%	35%	3%	4,519
CLTR7020382T1	E	2	11%	64%	19%	5%	1,507
CLTW7030254T1	E	2	7%	56%	28%	9%	1,507
CLTR7020379T1	E	2	6%	57%	30%	7%	1,507
CLTR7020383T1	E	2	46%	11%	35%	7%	1,507
CLTW7040129T1	O	2	1%	40%	44%	15%	1,507
CLTR7020378T2	E	2	50%	20%	20%	10%	1,507
CLTW7040065T2	O	2	4%	32%	59%	4%	3,413
CLTW7030056T2	E	2	20%	46%	29%	5%	1,906
CLTWT020155T2	E	2	24%	43%	27%	6%	1,906
CLTR7020365T3	E	2	43%	15%	40%	2%	1,906
CLTR7040062T3	O	2	4%	58%	35%	2%	1,906
CLTR7020158T2	E	2	10%	32%	54%	4%	1,041
CLTR7040045T2	O	1	22%	77%	NA	0%	1,041
CLTR7040047T2	O	2	21%	8%	70%	1%	1,041
CLTR7020360T3	O	2	2%	65%	31%	0%	1,041
CLTR7020362T3	E	1	50%	49%	NA	1%	1,041
CLTW7030116T3	O	2	23%	32%	38%	6%	1,041
CLTR7030114T3	O	1	26%	72%	NA	1%	1,041
CLTW7020350T3	E	2	18%	38%	38%	5%	1,041
CLTR7020349T3	E	1	78%	19%	NA	3%	1,041
CLTR7040061T3	O	2	36%	16%	47%	0%	1,041
CLTR7040154T2	P	2	4%	36%	54%	5%	918
CLTW7040155T2	P	2	8%	27%	58%	6%	918
CLTW7040044T2	P	2	4%	37%	53%	6%	834
CLTR7040077T3	P	1	56%	41%	NA	3%	967
CLTR7040078T3	P	1	51%	44%	NA	5%	967
CLTW7040079T3	P	2	35%	24%	30%	10%	967
CLTR7040048T2	P	2	3%	55%	37%	5%	915
CLTR7040125T1	P	2	21%	9%	68%	2%	885
CLTR7040156T1	P	2	2%	25%	70%	2%	885
CLTR7040126T1	P	1	27%	64%	NA	9%	885

Table 8.A.20 Distribution of Item Scores for ELA, Grade Eight

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTR8020394T1-M	E	2	6%	66%	25%	3%	4,364
CLTW8020396T1-O	E	2	7%	60%	32%	2%	4,364
CLTR8020446T1	E	2	3%	46%	50%	1%	4,330
CLTR8020447T1	E	2	5%	68%	25%	1%	4,330
CLTR8020321T2-M	E	2	4%	39%	54%	3%	4,330
CLTR8020323T2-M	E	2	31%	11%	54%	3%	4,330
CLTW8030219T2	E	2	22%	22%	50%	5%	4,330
CLTW8030212T1	E	2	17%	53%	26%	3%	3,421
CLTR8040080T1	O	2	53%	15%	28%	4%	1,714
CLTW8020260T2	E	2	32%	29%	27%	11%	1,714
CLTR8030208T2	E	2	10%	65%	14%	10%	1,714
CLTR8020259T2	O	2	9%	49%	36%	5%	1,714
CLTR8040150T2	O	2	38%	22%	38%	2%	1,707
CLTR8040146T2	O	2	2%	36%	59%	3%	1,707
CLTW8040147T2	O	2	1%	42%	53%	3%	1,707
CLTW8020287T2-M	E	1	64%	33%	NA	2%	2,556
CLTR8020439T3	E	2	13%	57%	28%	1%	1,707
CLTW8030129T3	O	2	21%	36%	36%	6%	1,707
CLTR8040148T2	O	2	2%	43%	54%	0%	849
CLTR8020066T3-M	E	2	9%	60%	30%	1%	849
CLTR8020068T3-M	E	2	27%	13%	59%	1%	849
CLTR8030120T3	E	1	48%	52%	NA	0%	849
CLTR8040214T3	O	2	1%	37%	61%	2%	849
CLTR8040215T3	O	2	2%	53%	43%	2%	849
CLTW8040216T3	O	2	16%	28%	52%	3%	849
CLTW8040220T3	O	1	7%	93%	NA	0%	849
CLTR8040091T1	P	2	2%	31%	63%	4%	1,846
CLTW8040092T1	P	2	4%	39%	52%	4%	1,846
CLTR8040219T3	P	2	40%	15%	43%	2%	1,846
CLTR8040144T2	P	2	5%	52%	37%	5%	1,642
CLTR8040143T2	P	2	35%	36%	25%	4%	1,642
CLTR8030125T1	P	2	6%	41%	50%	2%	842
CLTW8030127T1	P	2	4%	34%	58%	5%	842

Table 8.A.21 Distribution of Item Scores for ELA, Grade Eleven

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTWH020232T1	E	2	3%	45%	49%	2%	3,840
CLTRH020033T1	E	2	5%	61%	32%	2%	3,823
CLTRH020234T1	E	2	16%	12%	70%	2%	3,823
CLTWH020222T2	E	2	5%	45%	45%	4%	3,823
CLTWH020226T2	E	2	8%	57%	33%	2%	3,823
CLTWH020236T1	E	2	4%	56%	34%	6%	979
CLTRH020032T1-M	E	2	21%	47%	25%	6%	2,834
CLTRH030038T1	E	2	54%	16%	21%	9%	979
CLTRH030037T1	E	2	11%	61%	15%	13%	979
CLTRH040131T1	O	2	8%	58%	26%	7%	979
CLTRH040132T1	O	2	8%	53%	25%	13%	979
CLTRH020218T2	E	2	10%	68%	12%	10%	979
CLTRH020214T2	E	2	24%	42%	23%	11%	979
CLTRH040130T1	O	1	41%	58%	NA	1%	1,855
CLTRH040208T2	O	2	16%	52%	30%	2%	1,855
CLTRH040209T2	O	2	3%	34%	59%	5%	1,855
CLTWH040210T2	O	1	61%	34%	NA	5%	1,855
CLTRH020189T2	E	2	21%	9%	68%	2%	1,855
CLTRH020187T2	E	1	68%	29%	NA	3%	1,855
CLTWH030230T3	E	1	71%	27%	NA	2%	1,855
CLTRH040056T3	O	2	24%	12%	62%	2%	1,855
CLTWH040096T3	O	1	36%	61%	NA	2%	2,781
CLTRH030093T2	E	2	1%	31%	67%	1%	926
CLTRH030094T2	E	2	17%	14%	68%	1%	926
CLTRH020224T2	E	2	24%	12%	64%	0%	926
CLTRH040224T2	O	2	2%	53%	45%	1%	926
CLTWH040226T2	O	2	3%	19%	75%	3%	926
CLTWH020433T3	E	2	25%	35%	33%	6%	926
CLTRH020267T3	E	2	10%	61%	28%	1%	926
CLTRH040054T3	O	1	39%	60%	NA	0%	926
CLTRH020275T3	O	1	34%	65%	NA	0%	926
CLTRH040206T2	P	2	5%	48%	43%	3%	1,649
CLTRH020031T1	P	1	31%	65%	NA	4%	1,418
CLTRH040134T1	P	2	41%	17%	38%	4%	756
CLTRH040135T1	P	1	39%	58%	NA	3%	756
CLTWH040136T1	P	2	3%	49%	42%	5%	756

Table 8.A.22 Distribution of Item Scores for Mathematics, Grade Three

Item ID	Item use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTM3020065T1	E	1	23%	74%	NA	3%	4,077
CLTM3020063T2	E	2	30%	9%	57%	3%	4,077
CLTM3030592T2	E	2	13%	63%	19%	4%	4,077
CLTM3020172T2	E	2	37%	23%	35%	4%	4,077
CLTM3181019T2	O	2	33%	42%	9%	16%	658
CLTM3030500T1	E	1	41%	49%	NA	10%	2,207
CLTM3030506T1	E	1	43%	39%	NA	18%	658
CLTM3020007T1	E	1	50%	43%	NA	7%	2,207
CLTM3020062T1	E	2	42%	6%	37%	15%	658
CLTM3020001T1	E	2	38%	14%	34%	14%	658
CLTM3180964T2	O	2	50%	25%	6%	19%	658
CLTM3030569T1	E	2	24%	35%	22%	19%	658
CLTM3020010T1	E	2	45%	14%	26%	16%	658
CLTM3020171T1	E	2	45%	24%	29%	2%	1,549
CLTM3030591T1	E	2	14%	54%	30%	2%	1,549
CLTM3020054T2	E	2	58%	9%	29%	4%	1,549
CLTM3030582T2	E	2	18%	43%	31%	9%	1,549
CLTM3030499T2	E	2	33%	50%	11%	7%	1,549
CLTM3020003T3	E	2	41%	10%	43%	5%	1,549
CLTM3030583T3	E	2	22%	68%	9%	1%	1,797
CLTM3181023T3	O	2	24%	53%	21%	2%	1,797
CLTM3020058T3	E	1	87%	10%	NA	3%	1,797
CLTM3020169T3	E	1	80%	16%	NA	4%	1,797
CLTM3020173T3	E	2	50%	13%	35%	2%	1,797
CLTM3030574T3-R	O	2	40%	19%	37%	5%	1,797
CLTM3030590T2	E	2	39%	47%	11%	3%	1,797
CLTM3030710T3	E	2	42%	40%	13%	5%	1,797
CLTM3030497T3-R	P	1	80%	10%	NA	9%	1,072
CLTM3181018T2	P	2	32%	34%	30%	3%	1,072
CLTM3180887T1	P	1	22%	71%	NA	6%	1,072
CLTM3180889T3	P	1	43%	47%	NA	10%	749
CLTM3180890T1	P	1	31%	61%	NA	8%	749
CLTM3181020T3	P	2	21%	62%	11%	5%	747
CLTM3180963T1	P	2	15%	43%	37%	5%	747
CLTM3180884T1	P	2	13%	34%	49%	3%	774
CLTM3180886T2	P	2	53%	35%	11%	0%	774
CLTM3180962T3	P	2	42%	35%	18%	5%	735
CLTM3180959T1	P	1	40%	54%	NA	5%	735
CLTM3180885T2	P	2	44%	15%	39%	0%	735

Table 8.A.23 Distribution of Item Scores for Mathematics, Grade Four

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTM4030475T1	E	2	3%	37%	59%	2%	4,364
CLTM4020177T1	E	2	9%	54%	35%	2%	4,339
CLTM4030612T1	E	2	3%	40%	55%	2%	4,339
CLTM4030484T1	E	2	34%	25%	34%	7%	4,339
CLTM4020178T2	E	2	25%	32%	36%	7%	4,339
CLTM4181003T2	O	2	28%	53%	8%	12%	1,426
CLTM4020170T1	E	2	39%	24%	33%	4%	3,660
CLTM4180852T1	O	1	41%	49%	NA	10%	1,426
CLTM4020231T1	E	2	13%	64%	13%	10%	1,426
CLTM4030613T2	E	2	20%	33%	29%	18%	1,426
CLTM4030650T1	E	2	10%	34%	47%	9%	3,660
CLTM4030494T2	E	2	23%	40%	22%	15%	1,426
CLTM4030476T2	E	2	36%	14%	28%	21%	1,426
CLTM4020250T2	E	2	12%	68%	18%	3%	2,234
CLTM4030479T2	E	2	38%	36%	23%	3%	2,234
CLTM4020230T3	E	2	24%	57%	16%	3%	2,875
CLTM4020212T3	E	2	26%	58%	13%	3%	2,234
CLTM4181004T3	O	2	46%	41%	13%	1%	641
CLTM4020233T3	E	2	37%	28%	33%	1%	641
CLTM4020224T3	E	2	43%	48%	7%	1%	641
CLTM4030672T2	E	2	7%	74%	18%	1%	641
CLTM4020229T2	E	2	19%	52%	27%	2%	641
CLTM4180855T3	P	1	90%	4%	NA	6%	1,039
CLTM4181000T1	P	1	50%	45%	NA	5%	1,039
CLTM4181010T2	P	2	45%	33%	17%	5%	1,039
CLTM4180857T2	P	1	36%	59%	NA	5%	1,039
CLTM4181002T1	P	2	4%	48%	45%	3%	809
CLTM4180858T2	P	1	39%	56%	NA	4%	809
CLTM4181027T2	P	2	29%	20%	42%	8%	809
CLTM4181032T2	P	2	34%	48%	12%	6%	802
CLTM4181005T1	P	2	18%	41%	37%	3%	802
CLTM4030652T3-R	P	2	34%	41%	19%	6%	845
CLTM4181031T1	P	2	25%	53%	19%	4%	845
CLTM4181006T2	P	2	41%	47%	8%	5%	845
CLTM4181030T1	P	2	42%	9%	44%	5%	844
CLTM4181009T2	P	2	37%	43%	17%	3%	844
CLTM4030673T3-R	P	2	21%	54%	21%	3%	844

Table 8.A.24 Distribution of Item Scores for Mathematics, Grade Five

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTM5020338T1	E	2	7%	40%	52%	1%	4,363
CLTM5030458T1	E	2	13%	46%	40%	1%	4,330
CLTM5020184T2	E	2	39%	24%	34%	2%	4,330
CLTM5020268T2	E	2	28%	45%	19%	7%	4,330
CLTM5030456T2	E	1	56%	34%	NA	10%	4,330
CLTM5020352T2	E	2	31%	7%	59%	2%	4,330
CLTM5030463T1	E	2	31%	37%	24%	8%	930
CLTM5030676T1	E	2	16%	63%	9%	12%	930
CLTM5020357T1	E	2	18%	47%	20%	14%	930
CLTM5020183T1	E	2	16%	42%	28%	14%	930
CLTM5020341T2	E	2	60%	10%	21%	9%	930
CLTM5181015T2	O	2	47%	31%	12%	11%	930
CLTM5030707T1-R	O	2	54%	8%	26%	12%	930
CLTM5030561T2-R	O	1	61%	36%	NA	2%	2,062
CLTM5030465T3	E	2	6%	67%	24%	3%	2,062
CLTM5030464T2	E	2	13%	65%	19%	3%	2,062
CLTM5020215T3	E	1	76%	15%	NA	9%	2,062
CLTM5020358T2	E	2	51%	14%	32%	3%	2,062
CLTM5030576T2	E	2	22%	55%	19%	3%	2,062
CLTM5180968T2	O	1	75%	21%	NA	3%	2,062
CLTM5030575T1	E	2	27%	44%	27%	3%	2,062
CLTM5020359T3	E	2	20%	44%	33%	3%	2,062
CLTM5030607T2	E	2	20%	52%	24%	3%	2,062
CLTM5030708T2	E	2	29%	43%	27%	1%	1,289
CLTM5020343T2	E	1	71%	28%	NA	2%	1,289
CLTM5030577T3	E	2	30%	28%	40%	1%	1,289
CLTM5030678T3	E	2	35%	25%	39%	1%	1,289
CLTM5030709T3	E	2	18%	46%	34%	2%	1,289
CLTM5180915T3	O	2	53%	37%	8%	1%	1,289
CLTM5020266T3	E	1	74%	23%	NA	2%	1,289
CLTM5030462T2	E	2	32%	46%	19%	3%	1,289
CLTM5180909T2	P	2	50%	37%	10%	4%	1,008
CLTM5180971T1	P	2	21%	42%	34%	3%	1,008
CLTM5181016T3	P	2	46%	43%	9%	2%	873
CLTM5180970T1	P	1	50%	46%	NA	4%	873
CLTM5180821T2	P	2	46%	39%	12%	3%	873
CLTM5180818T1	P	2	9%	32%	57%	1%	814
CLTM5030559T3-R	P	1	77%	9%	NA	14%	814

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTM5180908T2	P	2	45%	36%	14%	4%	814
CLTM5180911T1	P	1	29%	65%	NA	6%	800
CLTM5180824T3	P	1	50%	45%	NA	6%	800
CLTM5180819T2	P	2	41%	38%	16%	5%	800
CLTM5180967T2	P	1	66%	29%	NA	5%	835
CLTM5180972T3	P	2	52%	23%	21%	4%	835
CLTM5180822T1	P	2	12%	58%	27%	3%	835

Table 8.A.25 Distribution of Item Scores for Mathematics, Grade Six

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTM6020293T1	E	1	35%	63%	NA	2%	4,383
CLTM6020287T1	E	2	29%	11%	58%	2%	4,356
CLTM6020314T1	E	2	42%	23%	34%	1%	4,356
CLTM6030683T2	E	1	45%	52%	NA	3%	4,356
CLTM6020364T2	E	2	44%	25%	30%	2%	4,356
CLTM6180894T2	O	1	55%	41%	NA	3%	4,288
CLTM6030618T1	E	2	42%	9%	45%	4%	1,642
CLTM6020051T2	O	2	43%	10%	44%	2%	4,288
CLTM6020433T2	E	2	50%	17%	29%	4%	1,642
CLTM6030599T2	E	1	45%	49%	NA	6%	4,288
CLTM6020291T2	E	2	47%	10%	38%	5%	1,642
CLTM6020097T1	E	1	50%	44%	NA	6%	3,327
CLTM6030469T1	E	2	27%	32%	33%	7%	1,642
CLTM6030602T2	E	2	44%	39%	15%	2%	1,685
CLTM6020094T1	E	2	28%	57%	13%	1%	1,685
CLTM6180988T2	O	1	42%	56%	NA	2%	1,685
CLTM6020200T3	E	1	45%	51%	NA	4%	1,685
CLTM6030619T2	E	2	47%	37%	14%	2%	1,685
CLTM6020367T2	E	2	42%	45%	10%	2%	1,685
CLTM6020039T3	E	2	35%	44%	20%	1%	961
CLTM6020099T3	E	1	76%	20%	NA	3%	961
CLTM6020368T3	E	2	32%	38%	29%	2%	961
CLTM6020434T3	E	2	36%	16%	47%	1%	961
CLTM6020295T3	E	1	58%	40%	NA	2%	961
CLTM6030687T3	E	1	48%	47%	NA	4%	961
CLTM6030603T3	E	2	27%	47%	25%	1%	961
CLTM6020289T3	E	2	39%	24%	36%	1%	961
CLTM6180981T1	P	2	14%	32%	48%	6%	1,027
CLTM6180901T3	P	2	23%	43%	31%	2%	1,027
CLTM6180899T2	P	2	49%	41%	8%	1%	797
CLTM6180979T2	P	2	49%	36%	14%	2%	915
CLTM6180897T2	P	1	31%	42%	NA	27%	915
CLTM6180985T2	P	1	58%	34%	NA	8%	809
CLTM6180987T1	P	2	18%	55%	24%	2%	809
CLTM6180983T1	P	2	28%	39%	30%	2%	808
CLTM6180978T3	P	1	51%	40%	NA	8%	808
CLTM6180980T2	P	2	22%	37%	38%	2%	808

Table 8.A.26 Distribution of Item Scores for Mathematics, Grade Seven

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTM7020047T1	E	2	26%	10%	63%	1%	4,485
CLTM7020091T1	E	2	23%	3%	69%	5%	4,485
CLTM7020089T2	E	2	13%	68%	15%	3%	4,485
CLTM7020048T2	E	2	30%	26%	42%	3%	4,485
CLTM7020092T2	E	2	26%	3%	66%	5%	4,485
CLTM7030522T2	E	2	19%	63%	10%	8%	2,370
CLTM7020329T1	E	2	45%	8%	29%	17%	672
CLTM7020419T2	E	2	42%	32%	19%	7%	4,402
CLTM7020327T2	E	2	42%	24%	24%	11%	672
CLTM7030515T1	E	2	23%	36%	25%	15%	672
CLTM7030512T1	E	2	29%	34%	17%	19%	672
CLTM7030585T2	E	2	19%	65%	11%	5%	2,704
CLTM7030518T1	E	2	37%	11%	39%	13%	672
CLTM7020330T2	E	2	47%	16%	17%	19%	672
CLTM7030509T1	E	2	24%	34%	39%	3%	1,698
CLTM7020297T2	E	1	56%	39%	NA	5%	1,698
CLTM7020418T1	E	2	40%	25%	32%	3%	1,698
CLTM7030516T2	E	2	41%	41%	14%	4%	1,698
CLTM7030519T2	E	2	46%	35%	16%	2%	3,730
CLTM7020328T3	E	2	16%	66%	13%	5%	1,698
CLTM7020282T2	E	2	41%	34%	17%	8%	1,698
CLTM7020298T3	E	1	55%	40%	NA	5%	3,730
CLTM7030510T2	E	2	32%	42%	20%	6%	1,698
CLTM7020093T3	E	2	41%	37%	21%	1%	2,032
CLTM7020373T2	E	2	25%	52%	21%	2%	2,032
CLTM7030589T3	E	1	61%	37%	NA	2%	2,032
CLTM7030514T3	E	2	24%	52%	21%	3%	2,032
CLTM7030586T3	E	2	37%	43%	18%	3%	2,032
CLTM7020331T3	E	2	23%	57%	17%	3%	2,032
CLTM7020036T3	E	1	82%	14%	NA	4%	2,032
CLTM7180846T3	P	2	7%	55%	35%	3%	920
CLTM7180937T1	P	2	26%	41%	28%	4%	920
CLTM7180994T2	P	2	17%	40%	40%	2%	920
CLTM7180997T2	P	2	57%	28%	12%	3%	821
CLTM7180927T1	P	2	27%	27%	43%	3%	821
CLTM7180932T2	P	2	31%	25%	39%	4%	966
CLTM7030696T3-R	P	1	77%	11%	NA	12%	966
CLTM7180951T1	P	2	19%	46%	31%	4%	966
CLTM7180993T1	P	2	25%	29%	42%	4%	966

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTM7180933T2	P	2	41%	25%	31%	2%	914
CLTM7180953T2	P	2	17%	68%	10%	5%	914
CLTM7030511T3-R	P	2	19%	57%	19%	4%	914
CLTM7180949T1	P	2	22%	31%	43%	4%	864
CLTM7180935T2	P	1	83%	11%	NA	6%	864
CLTM7180952T2	P	2	10%	65%	20%	5%	864
CLTM7180995T3	P	2	30%	43%	23%	3%	864

Table 8.A.27 Distribution of Item Scores for Mathematics, Grade Eight

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTM8020028T1	E	2	8%	42%	48%	2%	4,270
CLTM8030530T1	E	2	39%	14%	45%	2%	4,238
CLTM8030536T2	E	2	32%	33%	32%	3%	4,238
CLTM8020305T1	E	2	44%	14%	39%	3%	4,238
CLTM8020416T2	E	2	34%	47%	15%	3%	4,238
CLTM8020277T1	E	2	35%	19%	42%	3%	4,238
CLTM8030539T2	E	2	24%	44%	29%	3%	4,238
CLTM8030535T1	E	2	35%	7%	48%	9%	634
CLTM8030528T2	E	2	19%	52%	23%	6%	2,716
CLTM8020378T1	E	2	43%	5%	42%	9%	634
CLTM8180817T2	O	1	43%	48%	NA	9%	4,207
CLTM8030538T1	E	2	38%	6%	44%	12%	634
CLTM8020029T2	E	2	21%	38%	24%	17%	634
CLTM8180860T1	O	1	41%	39%	NA	20%	634
CLTM8030527T1	E	2	36%	20%	42%	1%	2,082
CLTM8030624T1	E	1	36%	53%	NA	11%	2,082
CLTM8020390T3	E	1	80%	15%	NA	4%	2,082
CLTM8020379T2	E	2	50%	31%	5%	14%	2,082
CLTM8020083T2	E	1	53%	43%	NA	4%	2,082
CLTM8020030T3	E	2	38%	40%	18%	3%	2,082
CLTM8020415T1	E	2	35%	19%	43%	3%	2,082
CLTM8020084T3	E	1	53%	42%	NA	5%	2,082
CLTM8020080T2	E	2	35%	46%	13%	5%	2,082
CLTM8020307T3	E	2	28%	35%	35%	1%	1,491
CLTM8020046T2	E	2	55%	34%	6%	4%	1,491
CLTM8020393T3	E	2	47%	40%	11%	2%	1,491
CLTM8030540T3	E	2	37%	40%	21%	2%	1,491
CLTM8020392T2	E	2	33%	42%	22%	3%	1,491
CLTM8020453T3	E	1	54%	44%	NA	2%	1,491
CLTM8020417T3	E	2	26%	56%	16%	2%	1,491
CLTM8020069T2	E	1	66%	31%	NA	3%	1,491
CLTM8020380T3	E	2	47%	38%	11%	5%	1,491
CLTM8030537T3	E	2	23%	53%	22%	2%	1,491
CLTM8180881T3	P	1	44%	40%	NA	16%	902
CLTM8180862T1	P	2	22%	41%	33%	3%	902
CLTM8030524T1-R	P	1	13%	67%	NA	20%	764
CLTM8180815T2	P	1	25%	71%	NA	5%	764
CLTM8180865T2	P	2	42%	39%	16%	2%	764
CLTM8180804T3	P	2	7%	60%	31%	2%	764

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTM8180802T1	P	2	15%	44%	39%	2%	922
CLTM8180808T3	P	2	46%	36%	15%	2%	922
CLTM8180874T1	P	1	35%	58%	NA	6%	837
CLTM8030661T3-R	P	1	48%	50%	NA	2%	837
CLTM8180867T2	P	2	50%	33%	14%	3%	837
CLTM8180863T2	P	2	41%	39%	17%	2%	813
CLTM8180866T1	P	2	14%	32%	52%	2%	813
CLTM8180869T3	P	1	66%	29%	NA	5%	813

Table 8.A.28 Distribution of Item Scores for Mathematics, Grade Eleven

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTMH020447T1	E	1	32%	61%	NA	7%	3,799
CLTMH020406T1	E	2	43%	10%	45%	1%	3,784
CLTMH030642T2	E	2	18%	49%	27%	6%	3,784
CLTMH020397T1	E	2	39%	14%	45%	3%	3,784
CLTMH020076T1	E	1	44%	51%	NA	5%	3,784
CLTMH030555T2	E	2	20%	48%	25%	6%	3,784
CLTMH020043T1	E	1	56%	35%	NA	9%	1,211
CLTMH030645T2	E	2	14%	14%	67%	5%	3,719
CLTMH020398T2	E	2	10%	56%	26%	8%	1,211
CLTMH030644T1	E	2	47%	1%	36%	15%	1,211
CLTMH030630T1	E	1	50%	35%	NA	15%	1,211
CLTMH030665T1	E	2	46%	1%	39%	13%	1,211
CLTMH030551T2	E	2	7%	52%	32%	9%	1,211
CLTMH030666T2	E	2	20%	17%	54%	8%	2,544
CLTMH020336T2	E	1	54%	35%	NA	11%	1,211
CLTMH020381T1	E	2	43%	12%	34%	10%	1,211
CLTMH030641T1	E	2	41%	9%	48%	1%	1,333
CLTMH020402T2	E	2	23%	54%	20%	3%	1,333
CLTMH030542T2	E	1	53%	43%	NA	3%	1,333
CLTMH020385T2	E	2	46%	13%	38%	3%	1,333
CLTMH020077T2	E	1	59%	35%	NA	6%	2,508
CLTMH030552T3	E	2	20%	43%	33%	4%	1,333
CLTMH030712T1	E	1	50%	44%	NA	5%	1,333
CLTMH030646T3	E	2	11%	9%	78%	1%	1,175
CLTMH020078T3	E	1	65%	33%	NA	3%	1,175
CLTMH020382T2	E	2	52%	14%	33%	1%	1,175
CLTMH030667T3	E	2	11%	8%	80%	1%	1,175
CLTMH020401T3	E	1	46%	49%	NA	5%	1,175
CLTMH020407T2	E	2	41%	15%	43%	1%	1,175
CLTMH020446T3	E	1	71%	27%	NA	2%	1,175
CLTMH030643T3	E	2	32%	45%	21%	1%	1,175
CLTMH180831T3	P	1	73%	18%	NA	8%	877
CLTMH180919T2	P	2	25%	32%	39%	4%	877
CLTMH180917T3	P	2	79%	9%	6%	6%	707
CLTMH180828T2	P	1	41%	54%	NA	5%	707
CLTMH180947T3	P	2	55%	33%	7%	5%	754
CLTMH180830T2	P	1	34%	62%	NA	4%	754
CLTMH180811T1	P	2	31%	10%	55%	3%	754
CLTMH180809T3	P	2	29%	16%	45%	9%	750

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank	N Total
CLTMH180940T2	P	1	27%	69%	NA	3%	750
CLTMH030634T3-R	P	1	78%	16%	NA	5%	696
CLTMH180921T1	P	2	36%	12%	44%	8%	696
CLTMH180943T2	P	2	41%	41%	14%	3%	696

Appendix 8.B: Item Parameters for the Linking Set

For [Figure 8.B.1](#) through [Figure 8.B.14](#), the X-axis presents IRT b -parameter from the 2015–16 base scale of the item bank. The item bank b -parameters were either calibrated in 2015–16 or calibrated in 2016–17 but linked back to the 2015–16 base scale. The Y-axis presents the IRT b -parameter from the 2017–18 calibration that were linked back to the base scale. A square indicates that an item was dropped from the anchor set by robust-z statistics.

Data for these graphs is presented in [Table 8.B.1](#) through [Table 8.B.14](#). Each table follows its associated graph.

English Language Arts/Literacy (ELA) Graph and Table, Grade Three

[Figure 8.B.1](#) indicates, in the grade three ELA assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in [Table 8.B.1](#), which immediately follows the graph.

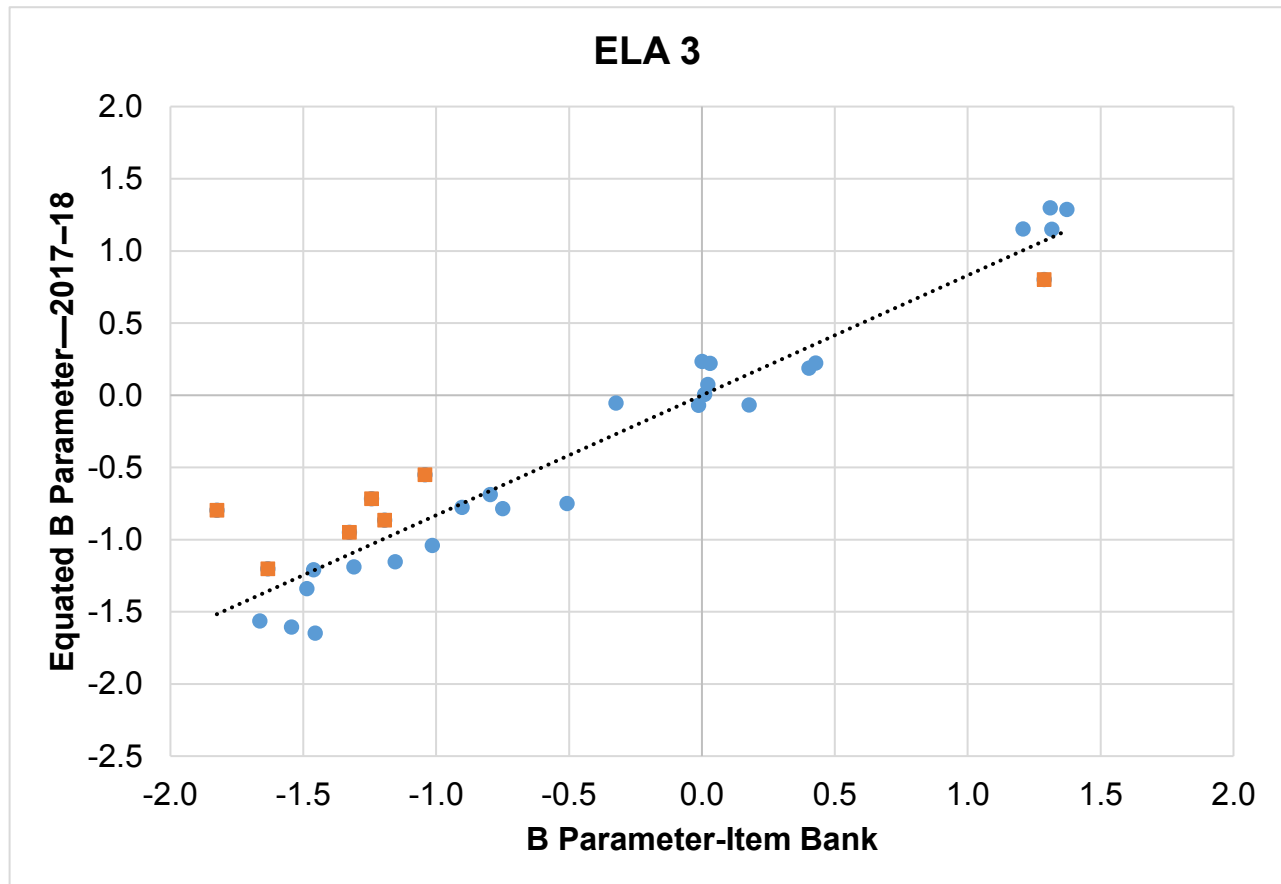


Figure 8.B.1 B -Parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Three

Table 8.B.1 B-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Three

B-parameter from Item Bank	B-parameter from 2017–18
-1.4615	-1.2102
-1.5447	-1.6049
-1.0144	-1.0400
-1.4551	-1.6479
-1.4873	-1.3405
0.4019	0.1868
0.0098	0.0048
-1.2439	-0.7166
-1.8255	-0.7978
-0.7968	-0.6887
-0.3234	-0.0536
-1.1947	-0.8655
-1.0421	-0.5518
-1.1547	-1.1548
-1.3273	-0.9488
-0.7502	-0.7860
-0.9032	-0.7764
0.0304	0.2199
0.0213	0.0746
0.4280	0.2232
-0.0126	-0.0696
-0.5083	-0.7508
0.1767	-0.0673
1.3096	1.2992
1.2872	0.8013
0.0001	0.2347
1.3727	1.2861
1.3158	1.1488
1.2073	1.1526

ELA Graph and Table, Grade Four

Figure 8.B.2 indicates, in the grade four ELA assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.2, which immediately follows the graph.

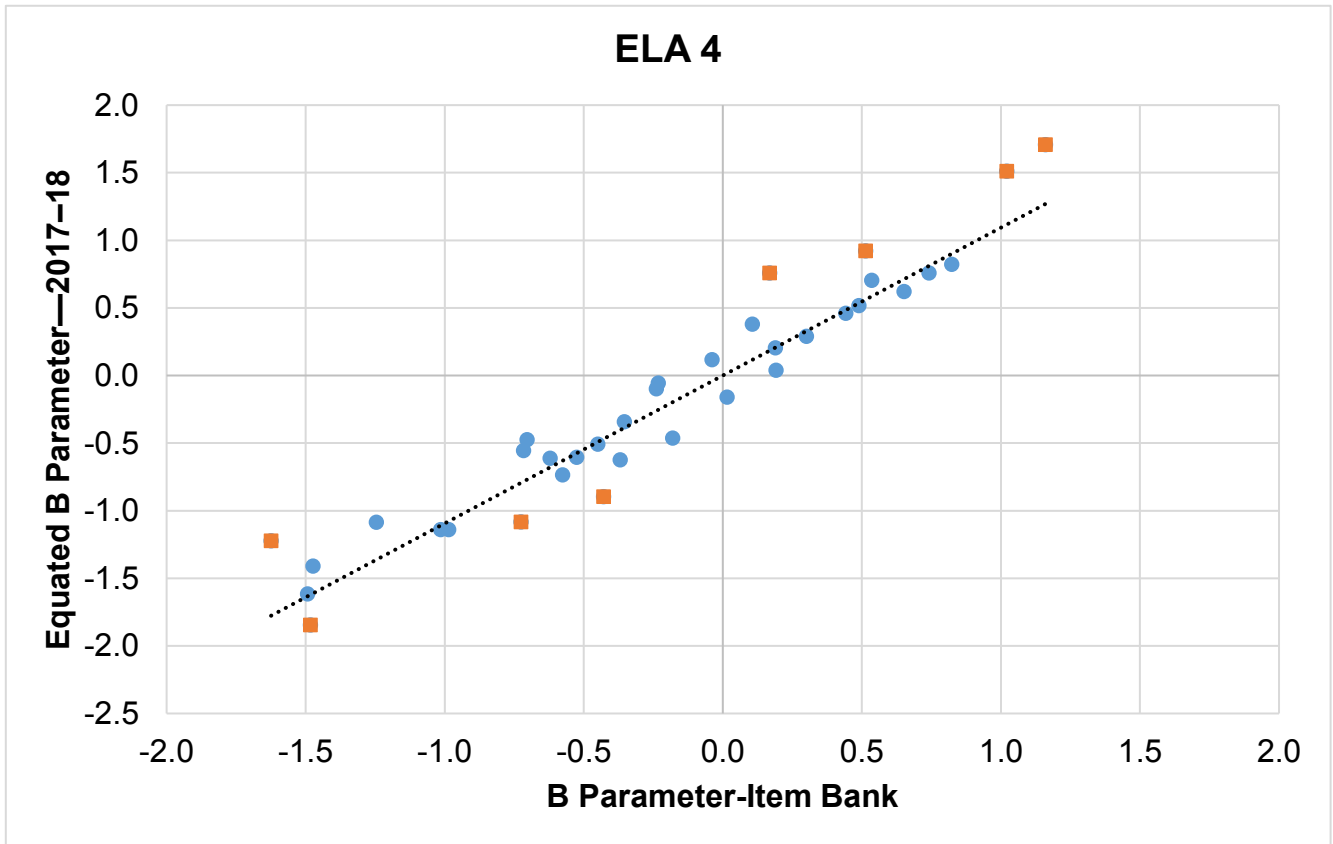


Figure 8.B.2 *B*-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Four

Table 8.B.2 B-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Four

B-parameter from Item Bank	B-parameter from 2017–18
-1.4936	-1.6174
-0.5766	-0.7356
-1.2457	-1.0852
-1.0151	-1.1399
-0.7262	-1.0839
-0.6205	-0.6124
-1.4738	-1.4097
-0.3542	-0.3440
-0.1798	-0.4636
0.1890	0.2043
-0.7034	-0.4757
-1.6244	-1.2245
-0.4286	-0.8979
-1.4825	-1.8467
-0.2318	-0.0558
-0.7168	-0.5571
-0.9859	-1.1405
0.1919	0.0373
-0.3695	-0.6240
0.0156	-0.1607
-0.5258	-0.6059
-0.4492	-0.5089
1.0212	1.5100
-0.2391	-0.0996
-0.0386	0.1171
0.1061	0.3779
0.8227	0.8215
0.5352	0.7030
1.1600	1.7066
0.1683	0.7580
0.5131	0.9203
0.6517	0.6193
0.7411	0.7575
0.3006	0.2882
0.4418	0.4597
0.4896	0.5158

ELA Graph and Table, Grade Five

Figure 8.B.3 indicates, in the grade five ELA assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.3, which immediately follows the graph.

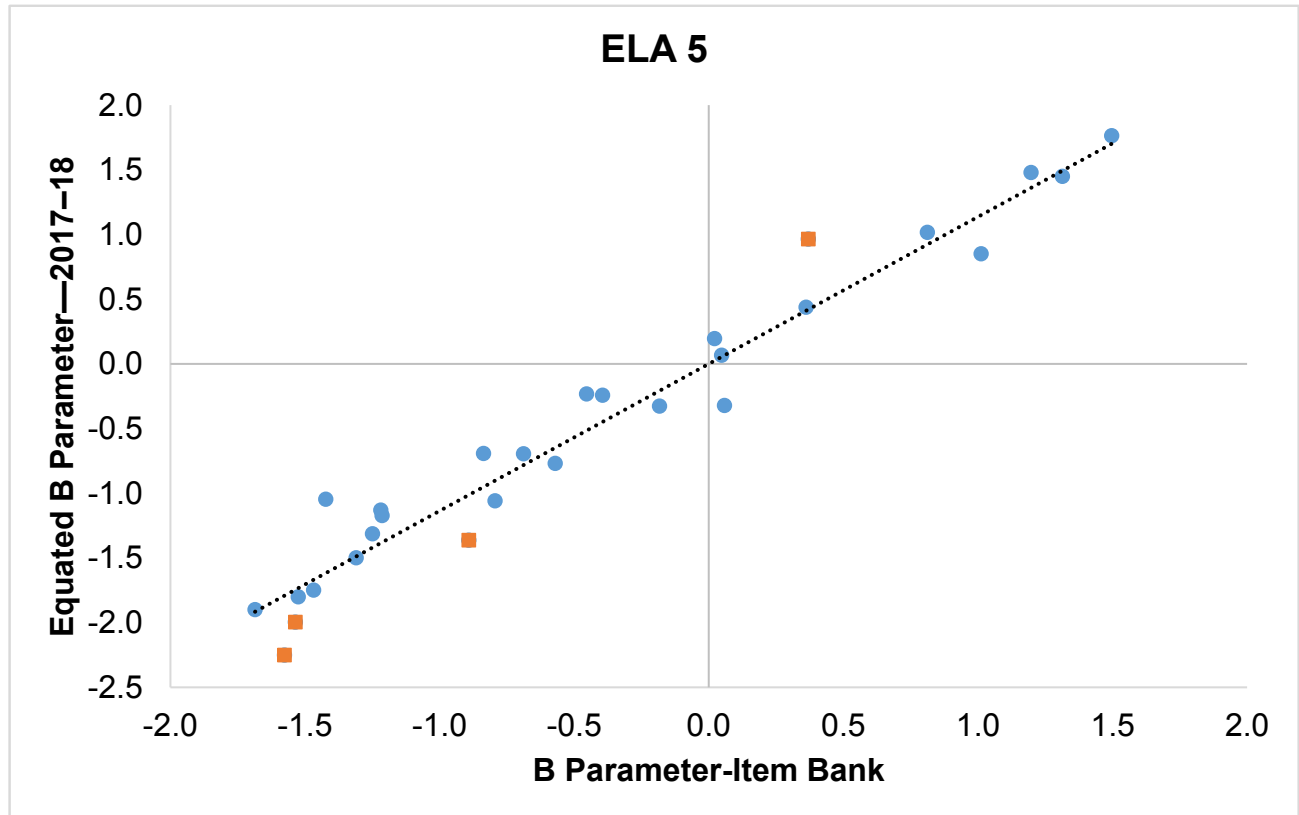


Figure 8.B.3 *B*-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Five

Table 8.B.3 B-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Five

B-parameter from Item Bank	B-parameter from 2017–18
-1.6857	-1.9011
-1.5765	-2.2502
-0.8924	-1.3627
-1.3106	-1.4992
-1.4687	-1.7498
-0.6889	-0.6965
-1.5360	-1.9952
-0.3951	-0.2421
-1.4227	-1.0471
1.0113	0.8506
-1.5255	-1.8021
-0.8366	-0.6918
-1.2184	-1.1309
-0.1828	-0.3277
-1.2499	-1.3143
-0.5709	-0.7685
0.0472	0.0665
-1.2145	-1.1720
0.8120	1.0173
-0.4549	-0.2329
-0.7938	-1.0597
0.3609	0.4367
0.0207	0.1947
0.3694	0.9652
1.4970	1.7626
1.1969	1.4798
1.3132	1.4492
0.0578	-0.3228

ELA Graph and Table, Grade Six

Figure 8.B.4 indicates, in the grade six ELA assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.4, which immediately follows the graph.

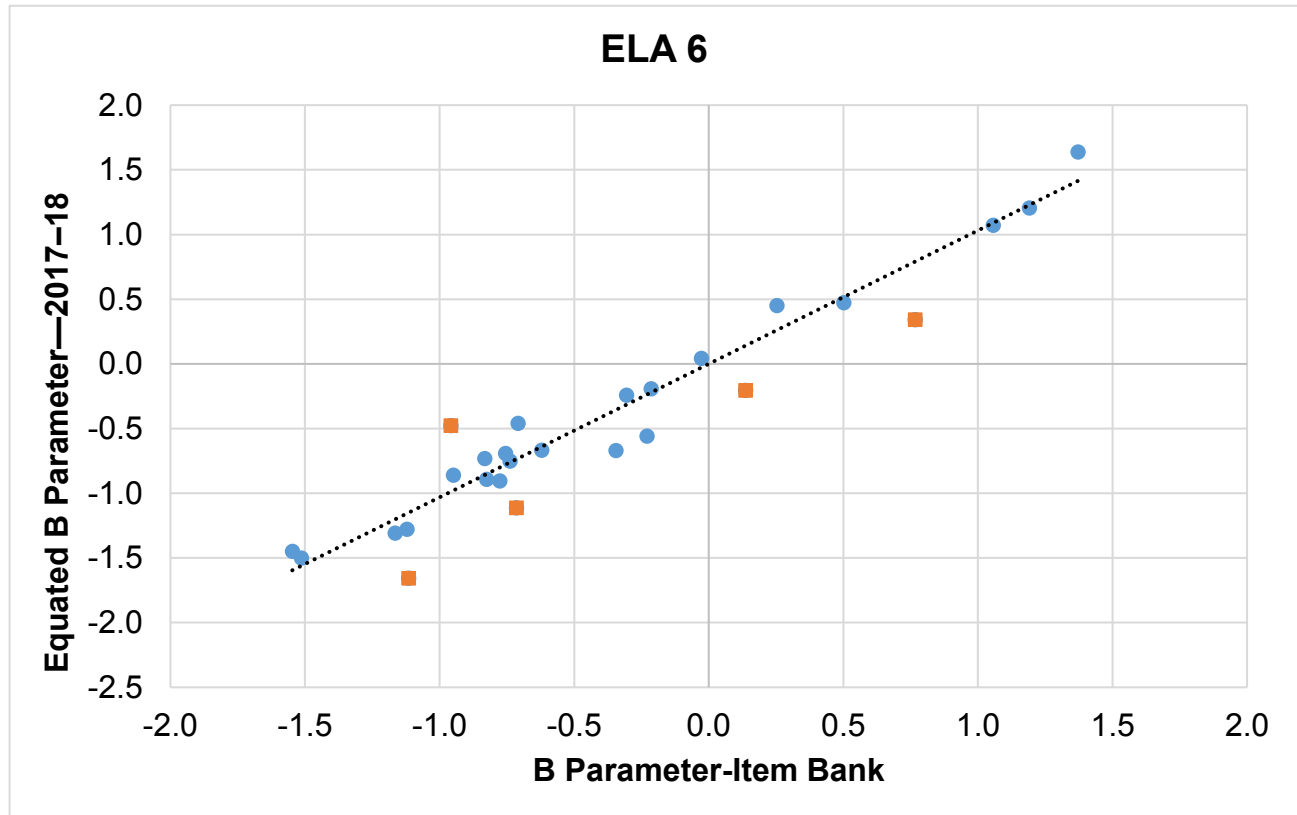


Figure 8.B.4 B-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Six

Table 8.B.4 B-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Six

B-parameter from Item Bank	B-parameter from 2017–18
-1.5136	-1.5022
-0.8255	-0.8929
-1.5474	-1.4499
-0.6208	-0.6686
-0.9484	-0.8621
-1.1655	-1.3098
-1.1152	-1.6579
-0.7084	-0.4611
-0.8319	-0.7328
-1.1218	-1.2802
-0.9579	-0.4786
-0.7761	-0.9065
-0.7141	-1.1127
-0.2144	-0.1930
-0.7380	-0.7524
-0.3444	-0.6704
-0.3057	-0.2440
0.2528	0.4507
0.7668	0.3415
-0.7555	-0.6922
0.1368	-0.2069
-0.2296	-0.5599
0.5019	0.4724
1.0566	1.0706
1.3716	1.6361
-0.0280	0.0423
1.1909	1.2052

ELA Graph and Table, Grade Seven

Figure 8.B.5 indicates, in the grade seven ELA assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.5, which immediately follows the graph.

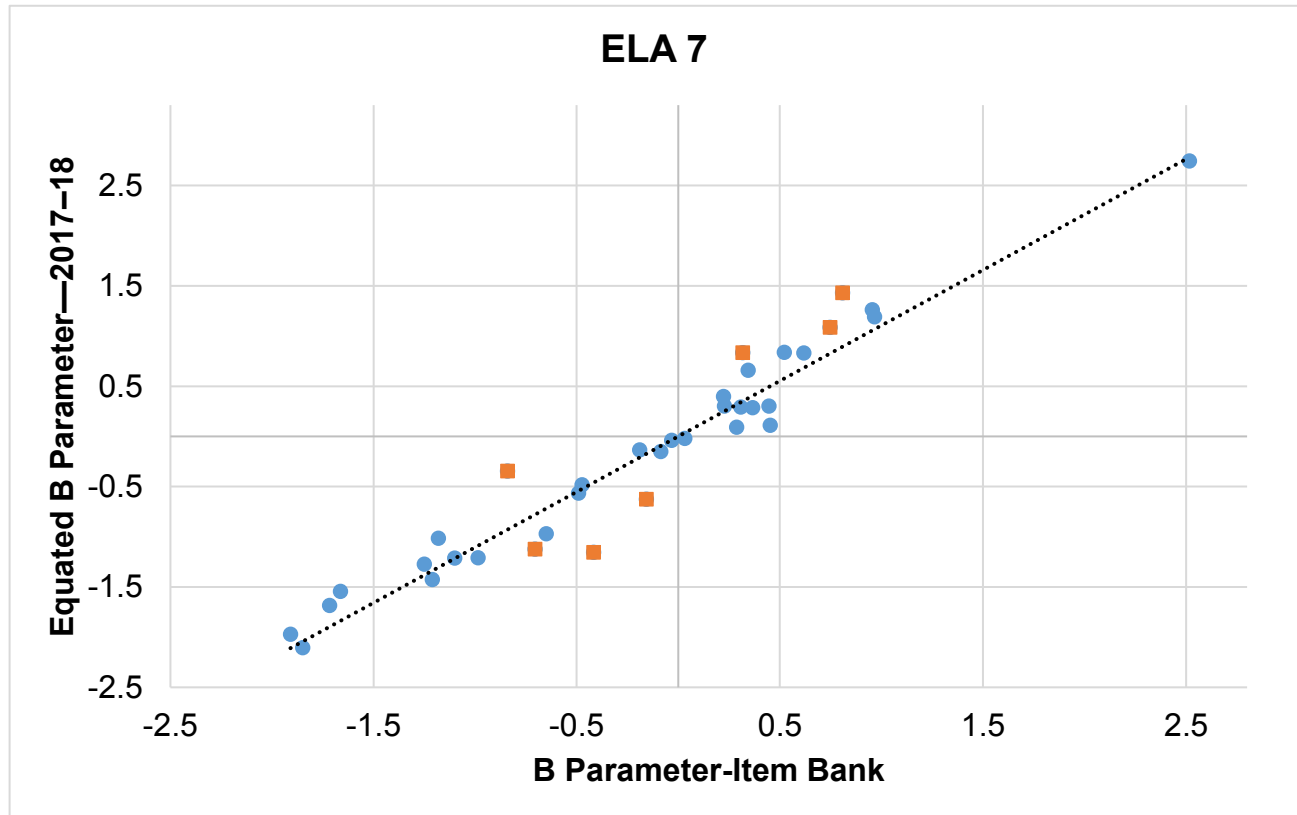


Figure 8.B.5 *B*-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Seven

Table 8.B.5 B-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Seven

B-parameter from Item Bank	B-parameter from 2017–18
-1.7163	-1.6861
-1.9090	-1.9730
-0.1567	-0.6278
-0.7061	-1.1234
-1.6637	-1.5455
-1.2499	-1.2743
-1.1009	-1.2142
-0.6505	-0.9702
-0.1899	-0.1371
-0.4747	-0.4838
-1.1810	-1.0172
-1.8489	-2.1068
0.2864	0.0891
-0.9860	-1.2100
-1.2117	-1.4273
-0.4905	-0.5676
-0.0859	-0.1525
0.2218	0.3969
-0.0325	-0.0407
0.0322	-0.0201
0.7465	1.0863
-0.8406	-0.3464
0.3443	0.6589
0.4529	0.1099
0.3081	0.2908
-0.4165	-1.1547
0.5212	0.8376
0.3664	0.2863
0.4458	0.3014
0.2269	0.3013
0.6171	0.8286
0.9544	1.2602
0.9664	1.1906
0.3166	0.8337
0.8082	1.4285
2.5152	2.7420

ELA Graph and Table, Grade Eight

Figure 8.B.6 indicates, in the grade eight ELA assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.6, which immediately follows the graph.

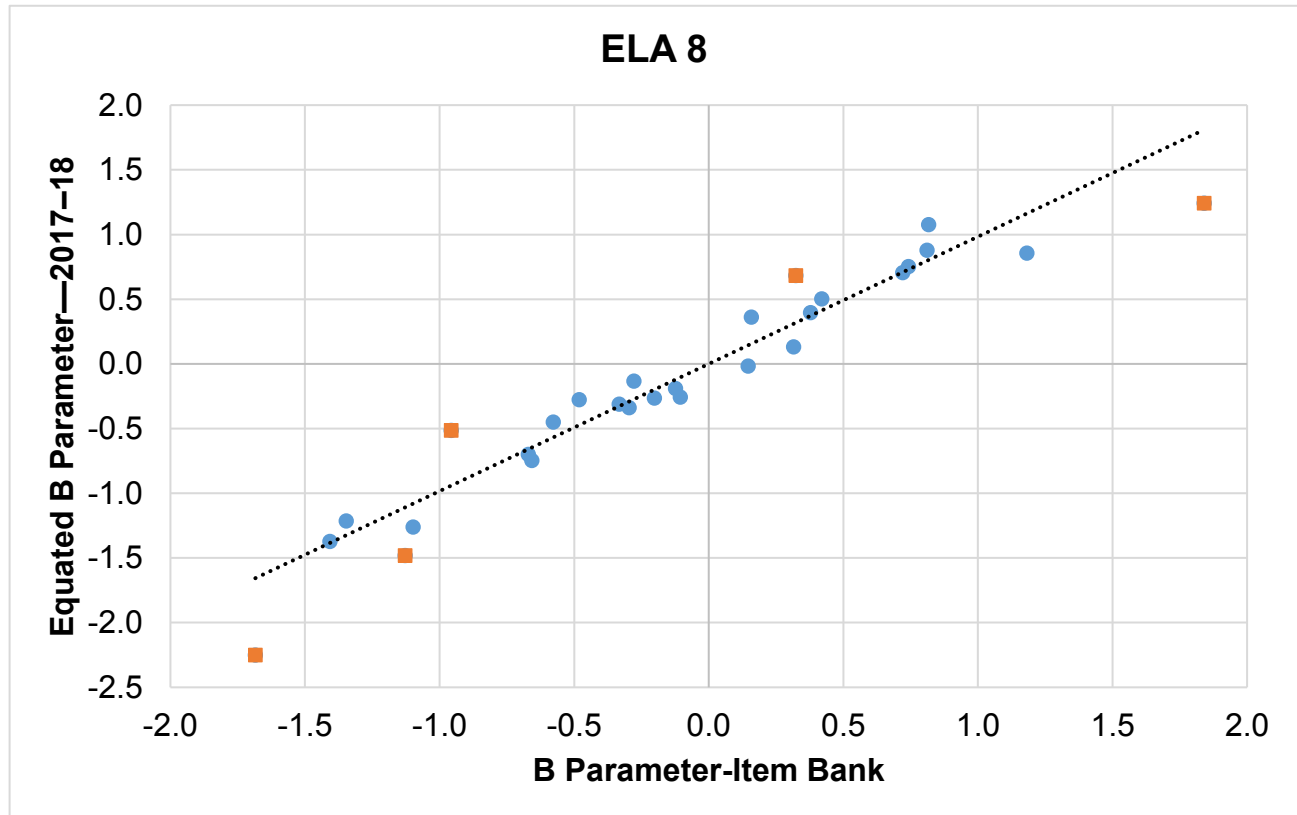


Figure 8.B.6 *B*-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Eight

Table 8.B.6 B-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Eight

B-parameter from Item Bank	B-parameter from 2017–18
-1.6844	-2.2501
-0.9574	-0.5150
-1.0981	-1.2627
-0.6707	-0.7011
-1.4083	-1.3740
-0.6578	-0.7467
-1.3467	-1.2155
0.7200	0.7042
-0.1057	-0.2572
-0.2960	-0.3388
-0.2025	-0.2648
-0.4820	-0.2786
-0.5774	-0.4503
-1.1281	-1.4828
-0.1240	-0.1906
0.3155	0.1309
-0.3334	-0.3118
0.1464	-0.0189
0.3234	0.6815
0.3783	0.3964
1.8404	1.2406
0.8109	0.8787
-0.2779	-0.1348
0.1583	0.3599
0.4197	0.5023
0.7422	0.7505
1.1815	0.8543
0.8169	1.0765

ELA Graph and Table, Grade Eleven

Figure 8.B.7 indicates, in the grade eleven ELA assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.7, which immediately follows the graph.

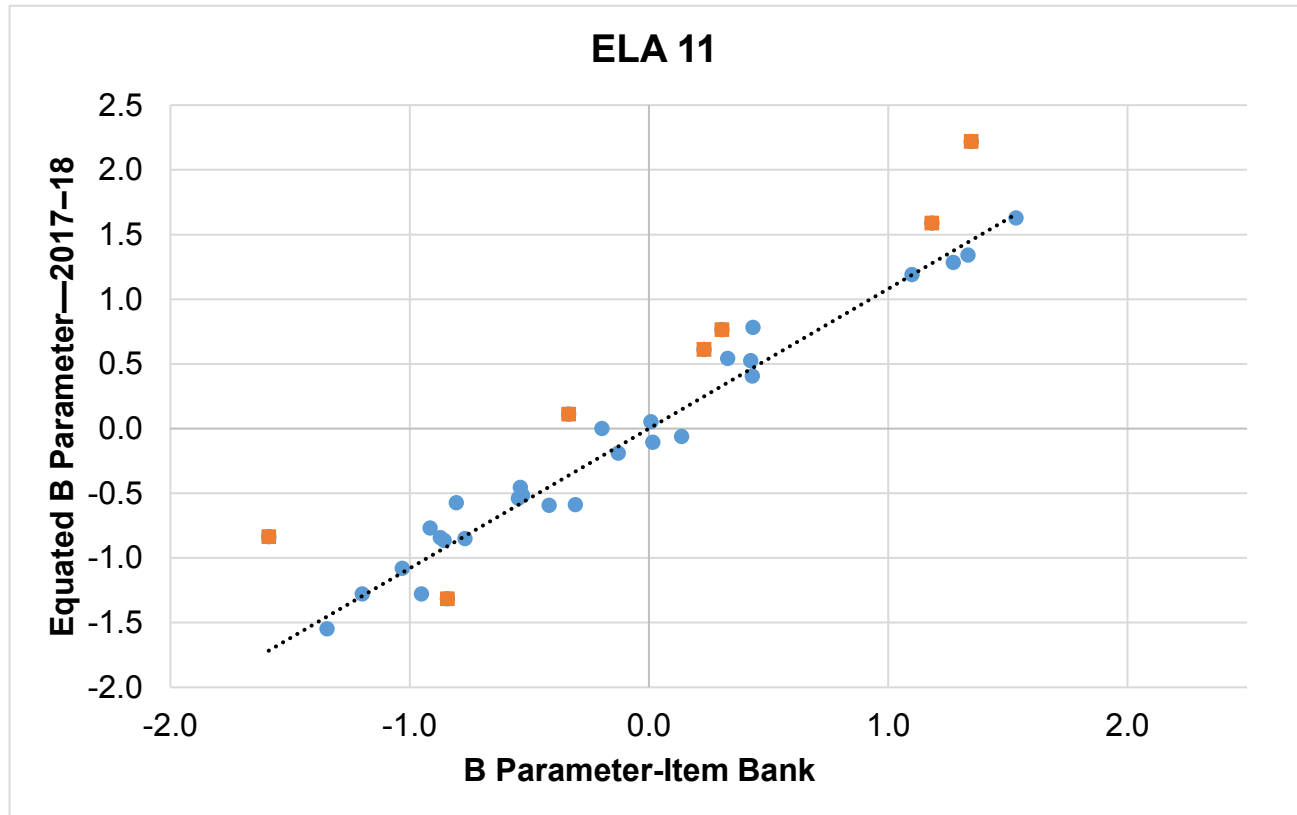


Figure 8.B.7 *B*-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Eleven

Table 8.B.7 B-parameters from Item Bank and 2017–18 for the Equating Set of ELA, Grade Eleven

B-parameter from Item Bank	B-parameter from 2017–18
-1.1990	-1.2786
-0.1290	-0.1901
-0.8423	-1.3156
-0.9516	-1.2782
-0.9145	-0.7680
-0.7695	-0.8520
-1.5894	-0.8357
0.0071	0.0512
-0.8565	-0.8664
-0.4176	-0.5926
-1.0316	-1.0806
-1.3459	-1.5476
0.1362	-0.0607
0.0154	-0.1071
-0.5459	-0.5394
-0.8724	-0.8429
-0.5292	-0.5160
-0.1969	0.0011
-0.3073	-0.5888
0.4320	0.4047
-0.5382	-0.4560
1.0986	1.1892
-0.3356	0.1116
0.2294	0.6112
1.2713	1.2837
-0.8060	-0.5727
0.3294	0.5422
0.4254	0.5242
0.3048	0.7639
1.3462	2.2196
1.3337	1.3405
1.1820	1.5877
1.5344	1.6275
0.4344	0.7806

Mathematics Graph and Table, Grade Three

[Figure 8.B.8](#) indicates, in the grade three mathematics assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in [Table 8.B.8](#), which immediately follows the graph.

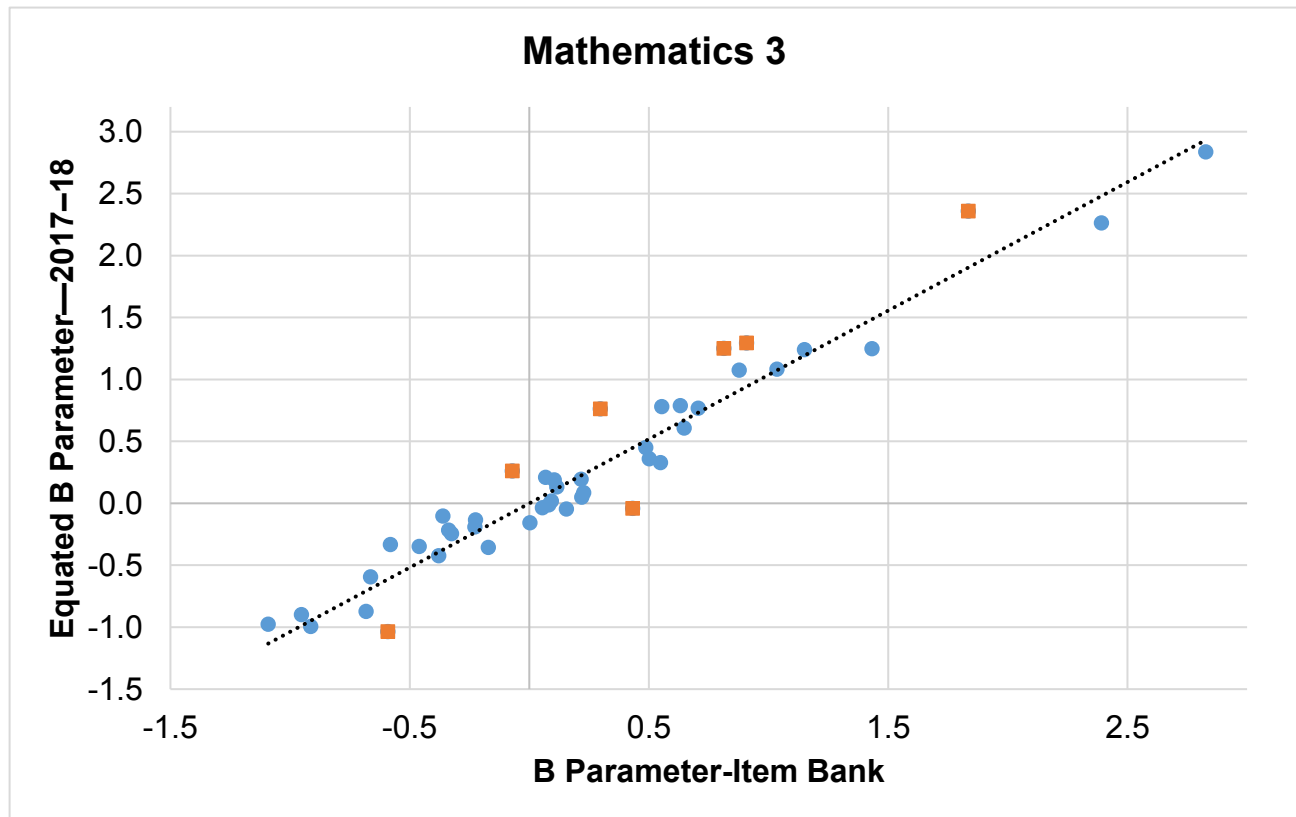


Figure 8.B.8 *B*-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Three

Table 8.B.8 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Three

B-parameter from Item Bank	B-parameter from 2017–18
-1.0912	-0.9779
-0.9525	-0.8992
-0.9135	-0.9952
-0.6822	-0.8739
-0.6635	-0.5946
-0.5915	-1.0350
-0.3260	-0.2444
0.0920	0.0178
0.4863	0.4500
0.2161	0.1946
-0.5809	-0.3327
-0.2280	-0.1922
-0.2246	-0.1349
0.2274	0.0848
-0.4612	-0.3502
-0.1717	-0.3565
-0.3371	-0.2178
-0.3611	-0.1035
0.0540	-0.0368
0.1037	0.1875
-0.3792	-0.4250
0.0814	-0.0125
0.5006	0.3581
0.2194	0.0486
0.0024	-0.1575
0.1147	0.1322
0.6469	0.6077
-0.0720	0.2620
1.4316	1.2470
0.5482	0.3277
0.0673	0.2082
0.1549	-0.0464
1.0348	1.0812
0.4321	-0.0417
0.7053	0.7680
0.9080	1.2947
0.5534	0.7803

B-parameter from Item Bank	B-parameter from 2017–18
1.8350	2.3584
0.6313	0.7878
0.8774	1.0742
2.8268	2.8350
2.3913	2.2633
0.2962	0.7618
0.8128	1.2512
1.1500	1.2403

Mathematics Graph and Table, Grade Four

Figure 8.B.9 indicates, in the grade four mathematics assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.1, which immediately follows the graph.

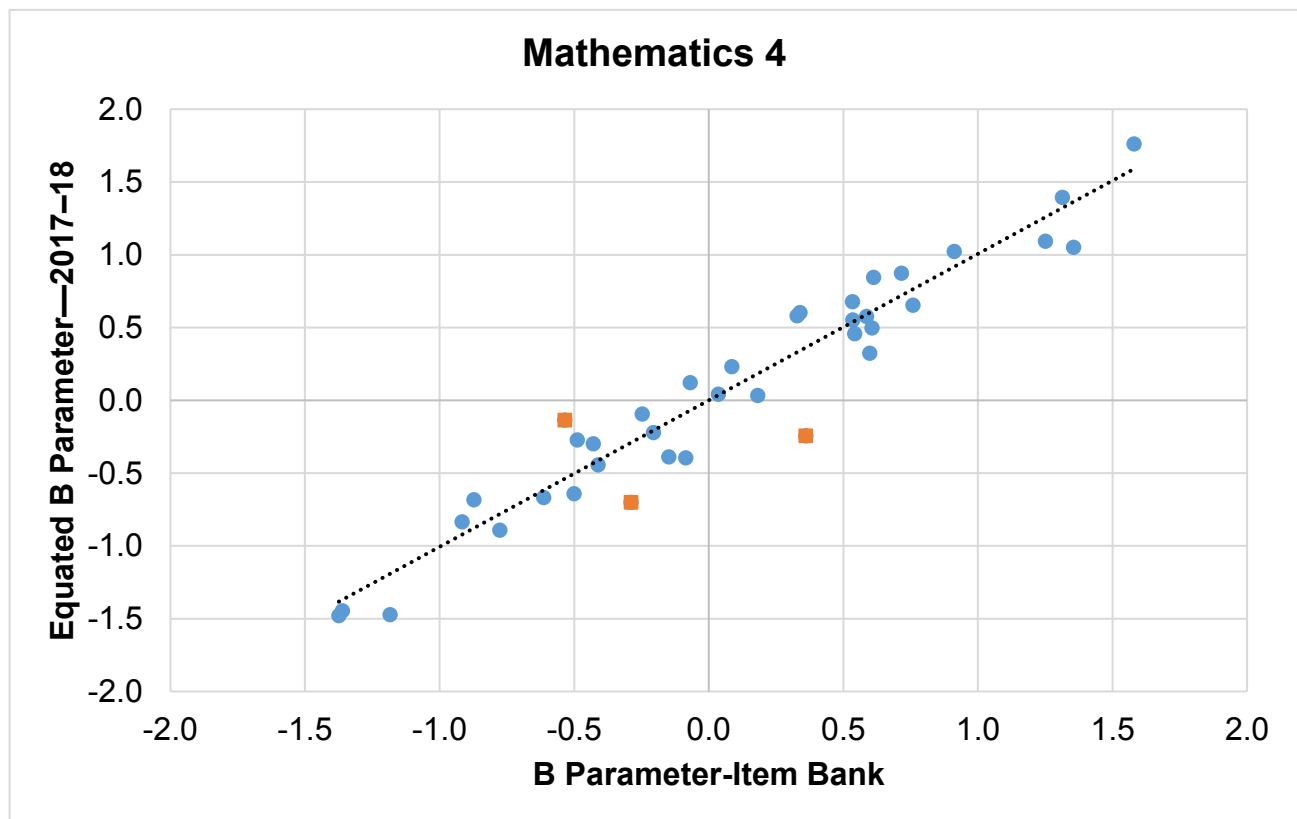


Figure 8.B.9 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Four

Table 8.B.9 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Four

B-parameter from Item Bank	B-parameter from 2017–18
-1.3743	-1.4787
-1.1847	-1.4725
-0.7759	-0.8915
-0.9167	-0.8350
-0.8724	-0.6833
-0.4114	-0.4436
-1.3616	-1.4449
-0.0695	0.1219
-0.4293	-0.2978
-0.2477	-0.0930
-0.2059	-0.2218
0.1822	0.0333
-0.2894	-0.6998
-0.5004	-0.6409
-0.4892	-0.2709
-0.6131	-0.6668
-0.1486	-0.3875
-0.0854	-0.3937
0.3600	-0.2433
-0.5346	-0.1355
0.3281	0.5824
0.7582	0.6537
0.0857	0.2309
1.3134	1.3955
0.0350	0.0425
0.5422	0.4576
0.5349	0.5525
0.6056	0.4971
0.5862	0.5779
0.9114	1.0244
1.2502	1.0934
0.5339	0.6780
0.5973	0.3240
0.3392	0.6025
0.6119	0.8442

B-parameter from Item Bank	B-parameter from 2017–18
1.5794	1.7623
1.3554	1.0519
0.7152	0.8742

Mathematics Graph and Table, Grade Five

Figure 8.B.10 indicates, in the grade five mathematics assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.10, which immediately follows the graph.

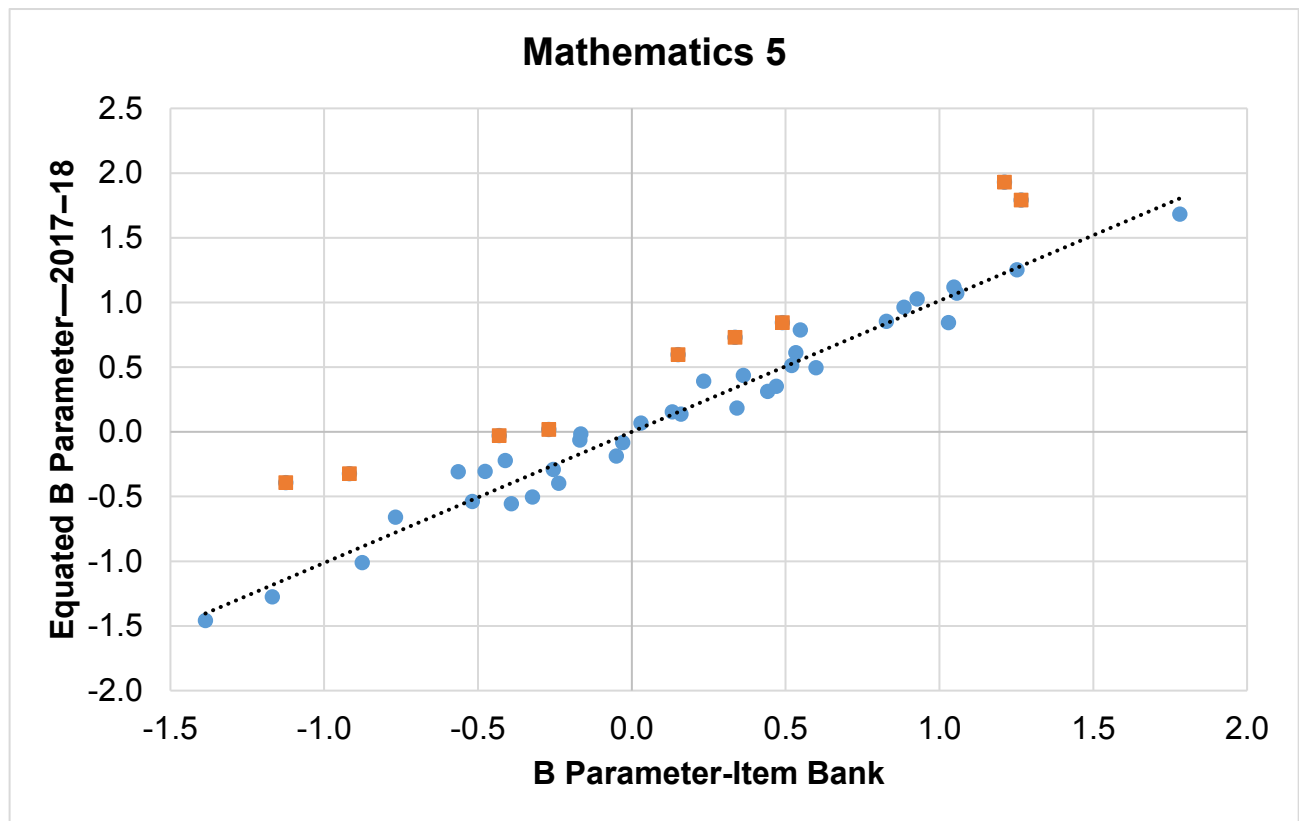


Figure 8.B.10 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Five

Table 8.B.10 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Five

B-parameter from Item Bank	B-parameter from 2017–18
-1.3863	-1.4594
-1.1694	-1.2752
-0.8771	-1.0109
-0.7683	-0.6594
-0.5184	-0.5385
-0.4316	-0.0297
0.3411	0.1833
0.3622	0.4364
0.5470	0.7870
-0.2558	-0.2908
-0.5650	-0.3079
-0.2705	0.0171
-0.2379	-0.3983
-0.4118	-0.2221
-0.4768	-0.3072
-1.1252	-0.3936
-0.3920	-0.5552
-0.9179	-0.3222
0.1592	0.1358
0.1500	0.5978
-0.1691	-0.0649
0.0293	0.0666
-0.0296	-0.0836
0.4415	0.3128
0.1309	0.1547
0.4695	0.3524
0.8840	0.9625
0.5984	0.4941
-0.1660	-0.0171
-0.3232	-0.5029
1.2649	1.7924
-0.0508	-0.1878
0.3347	0.7295
1.0291	0.8444
1.7806	1.6823
1.0462	1.1193
0.8274	0.8533

B-parameter from Item Bank	B-parameter from 2017–18
0.9271	1.0274
1.2521	1.2528
0.4896	0.8444
0.5194	0.5125
1.0561	1.0721
0.5326	0.6117
0.2334	0.3906
1.2107	1.9307

Mathematics Graph and Table, Grade Six

Figure 8.B.11 indicates, in the grade six mathematics assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.11, which immediately follows the graph.

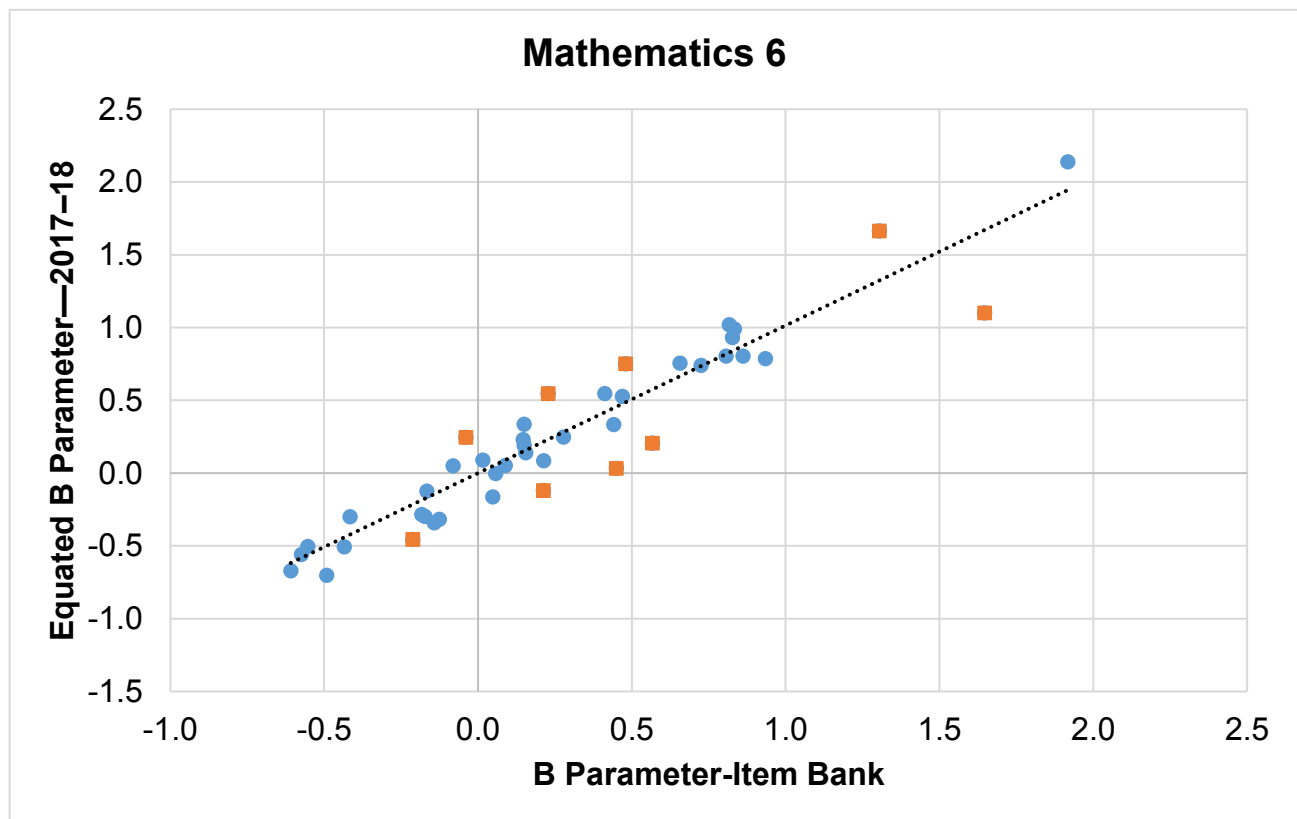


Figure 8.B.11 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Six

Table 8.B.11 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Six

B-parameter from Item Bank	B-parameter from 2017–18
-0.6092	-0.6716
-0.5739	-0.5597
-0.5540	-0.5033
-0.4923	-0.7010
-0.4354	-0.5059
-0.4165	-0.2983
0.1470	0.2314
0.0575	-0.0033
-0.1663	-0.1223
0.1495	0.3370
-0.1726	-0.2976
-0.1431	-0.3412
-0.0813	0.0506
-0.0402	0.2456
0.0482	-0.1622
-0.2121	-0.4555
0.1495	0.1905
-0.1828	-0.2833
-0.1257	-0.3178
0.0883	0.0526
0.1553	0.1408
0.2121	-0.1192
0.2781	0.2483
0.4122	0.5479
0.0150	0.0889
0.7254	0.7412
0.8060	0.8047
0.8267	0.9326
0.4412	0.3340
0.2129	0.0851
0.8166	1.0208
0.4495	0.0317
0.5666	0.2054
0.4686	0.5282
0.8326	0.9922
1.9169	2.1394
0.9335	0.7862

B-parameter from Item Bank	B-parameter from 2017–18
0.2276	0.5477
1.6469	1.1014
0.8616	0.8035
0.4792	0.7507
1.3042	1.6630
0.6559	0.7564

Mathematics Graph and Table, Grade Seven

Figure 8.B.12 indicates, in the grade seven mathematics assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.12, which immediately follows the graph.

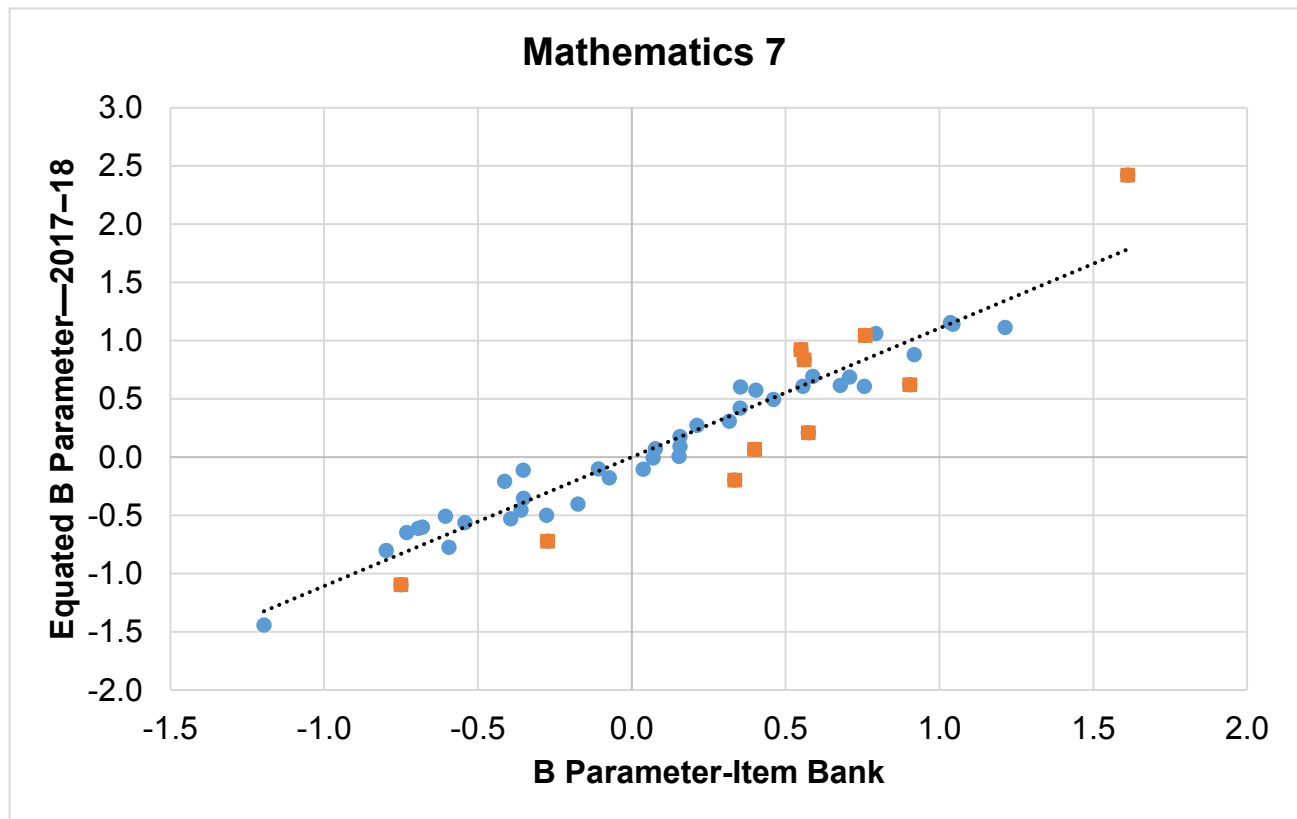


Figure 8.B.12 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Seven

Table 8.B.12 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Seven

B-parameter from Item Bank	B-parameter from 2017–18
-1.1962	-1.4418
-0.7987	-0.8009
-0.7316	-0.6483
-0.7504	-1.0960
-0.6060	-0.5086
-0.5423	-0.5635
-0.6947	-0.6127
0.0766	0.0726
-0.3536	-0.1126
-0.3609	-0.4549
-0.5952	-0.7756
-0.6811	-0.6009
0.0684	-0.0081
-0.4143	-0.2081
-0.3936	-0.5298
-0.2740	-0.7237
-0.1753	-0.4040
-0.1085	-0.1013
-0.2779	-0.4990
0.2115	0.2734
0.9036	0.6208
0.3343	-0.1970
0.0366	-0.1055
0.6770	0.6157
0.1565	0.0909
-0.0737	-0.1772
-0.3524	-0.3530
0.1534	0.0057
0.3161	0.3069
0.4599	0.4941
0.5597	0.8349
0.7072	0.6872
0.3514	0.4208
0.1562	0.1749
0.4032	0.5738
0.3989	0.0660
0.3531	0.6031

<i>B</i>-parameter from Item Bank	<i>B</i>-parameter from 2017–18
1.2129	1.1140
0.7931	1.0622
0.5554	0.6068
0.5737	0.2080
0.9176	0.8798
1.0355	1.1556
0.7584	1.0448
1.0435	1.1413
0.7554	0.6079
0.5491	0.9249
0.5883	0.6921
1.6117	2.4216

Mathematics Graph and Table, Grade Eight

Figure 8.B.13 indicates, in the grade eight mathematics assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.13, which immediately follows the graph.

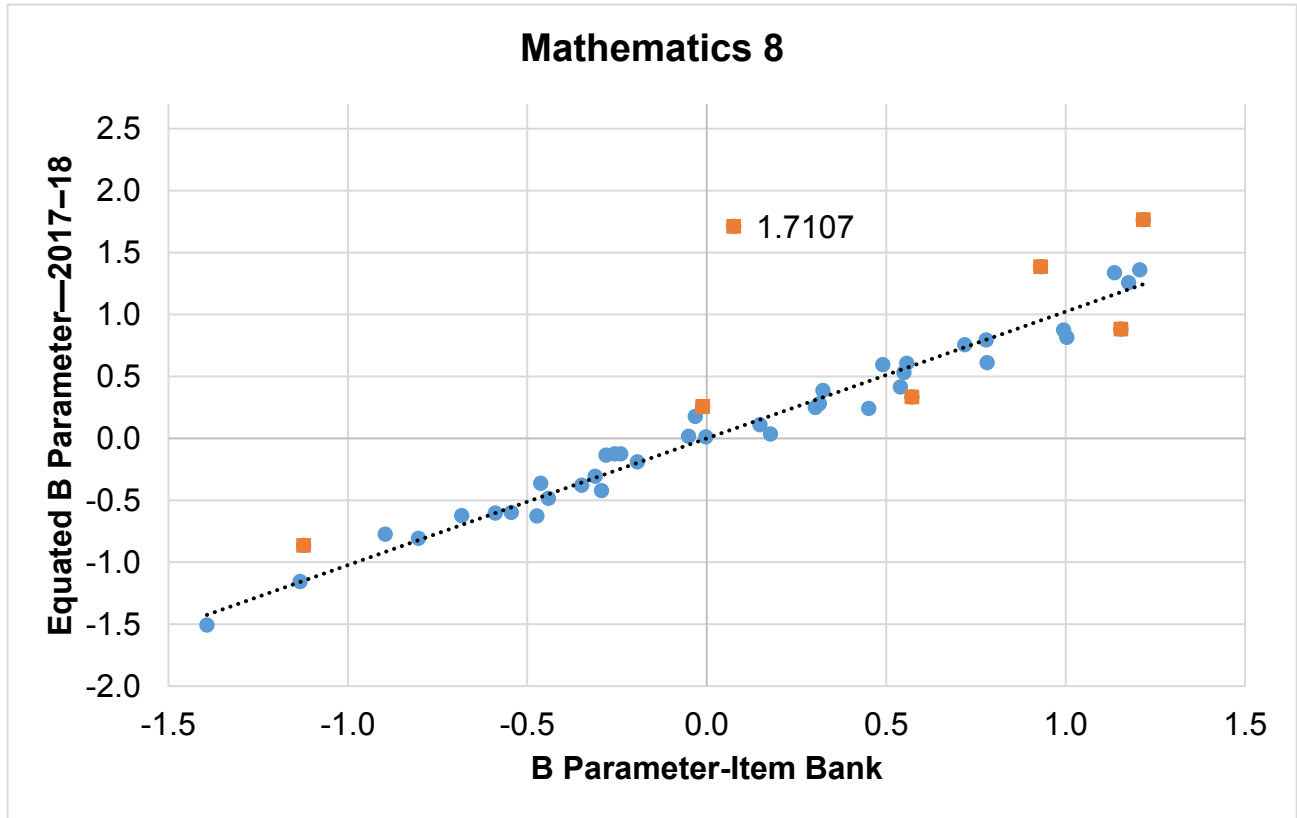


Figure 8.B.13 *B*-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Eight

Table 8.B.13 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Eight

B-parameter from Item Bank	B-parameter from 2017–18
-1.3928	-1.5089
-1.1330	-1.1554
-1.1239	-0.8641
-0.8037	-0.8075
-0.0026	0.0101
-0.0319	0.1774
-0.0508	0.0154
0.1482	0.1090
0.5573	0.6049
0.1772	0.0353
-0.8966	-0.7751
-0.5899	-0.6044
-0.5449	-0.5980
-0.4630	-0.3633
-0.6834	-0.6245
-0.2938	-0.4215
-0.4735	-0.6267
-0.3486	-0.3786
-0.4417	-0.4858
-0.2810	-0.1366
-0.3115	-0.3076
-0.2572	-0.1265
-0.1933	-0.1894
-0.2399	-0.1267
0.3022	0.2486
1.1753	1.2565
0.4902	0.5942
0.4510	0.2403
-0.0115	0.2564
0.5495	0.5293
0.0748	1.7107
0.3233	0.3850
0.3134	0.2806
1.2159	1.7651
0.7780	0.7953
1.2064	1.3596
0.5389	0.4143

B-parameter from Item Bank	B-parameter from 2017–18
1.1538	0.8825
1.1362	1.3376
0.5718	0.3337
0.9945	0.8748
0.7187	0.7543
1.0029	0.8153
0.9297	1.3858
0.7811	0.6101

Mathematics Graph and Table, Grade Eleven

Figure 8.B.14 indicates, in the grade eleven mathematics assessment, the relationship between the item bank parameters (calibrated in 2015–16 or 2016–17) and the equated parameters from 2017–18, the first iteration of the robust-z evaluation for the anchor items. The x-axis is the item bank parameter, and the y-axis is the 2017–18 spring equated parameters. Data used to create this graph is found in Table 8.B.14, which immediately follows the graph.

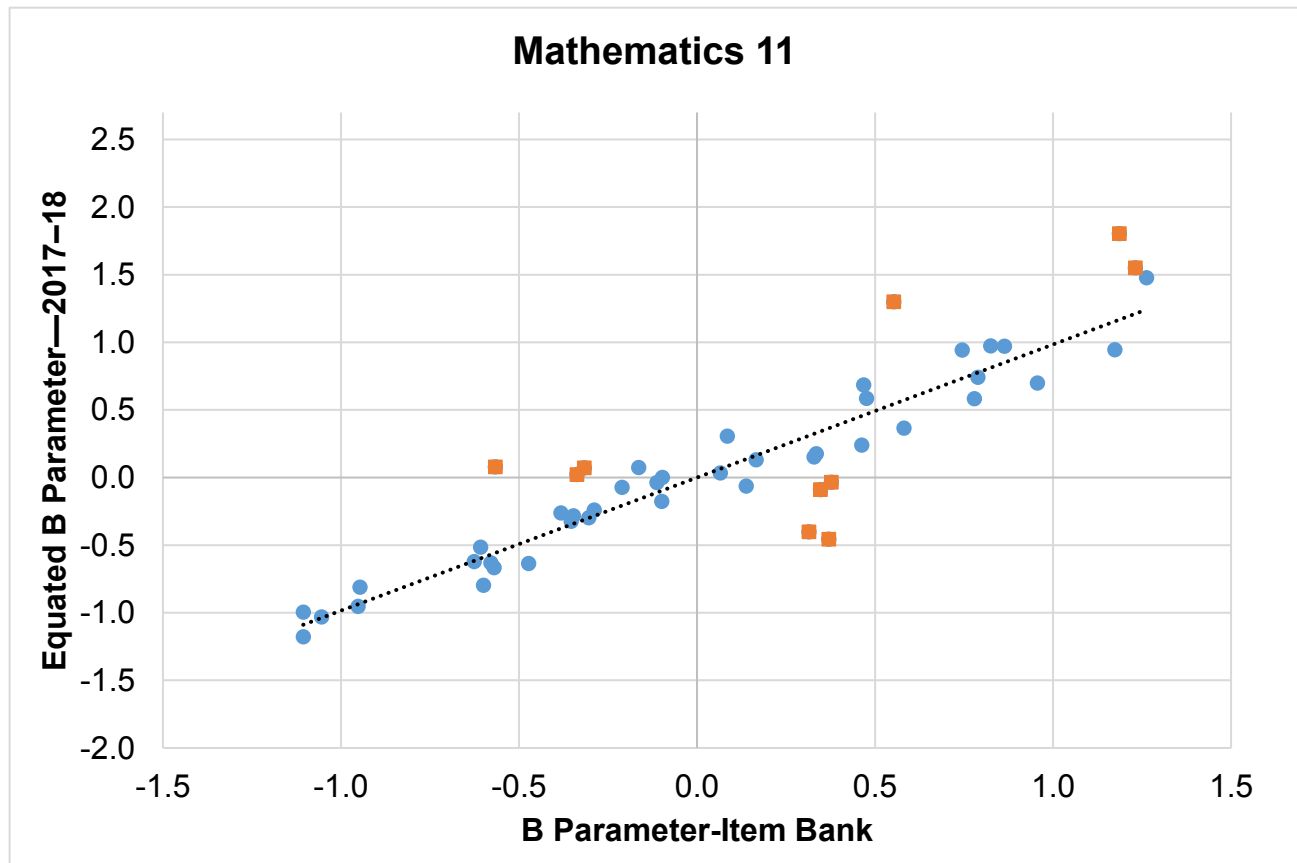


Figure 8.B.14 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Eleven

Table 8.B.14 B-parameters from Item Bank and 2017–18 for the Equating Set of Mathematics, Grade Eleven

B-parameter from Item Bank	B-parameter from 2017–18
-1.1058	-1.1774
-1.0545	-1.0296
-0.6080	-0.5134
-0.9523	-0.9528
-0.0973	0.0006
-0.1124	-0.0370
0.3775	-0.0341
0.1377	-0.0620
0.3467	-0.0883
0.0653	0.0334
-0.5794	-0.6315
-0.5668	0.0798
-0.3473	-0.2817
-0.2886	-0.2400
-0.3373	0.0222
-0.4733	-0.6360
-0.3534	-0.3223
-0.3039	-0.2956
-0.5994	-0.7954
-0.9469	-0.8107
-1.1060	-0.9957
-0.6261	-0.6200
-0.5704	-0.6664
-0.3163	0.0734
-0.2105	-0.0727
0.4627	0.2400
0.3287	0.1521
0.0849	0.3075
1.1733	0.9452
0.9556	0.7005
0.1661	0.1327
0.4760	0.5866
0.8244	0.9734
-0.1637	0.0743
-0.0988	-0.1770
-0.3827	-0.2610
0.3349	0.1773

<i>B</i>-parameter from Item Bank	<i>B</i>-parameter from 2017–18
0.8632	0.9714
0.4675	0.6864
0.5521	1.3016
0.5809	0.3654
0.3146	-0.4016
1.2625	1.4771
0.7788	0.5830
0.3698	-0.4551
0.7886	0.7419
1.2306	1.5509
1.1857	1.8040
0.7451	0.9441

Appendix 8.C: IRT Analyses Results

Note: For [Table 8.C.1](#) through [Table 8.C.14](#), “NA” in the *d-values* and *d-values Standard Error (SE)* columns indicates that the item is a 1-point item with no *d-value*. The colon (:) is used to separate the two *d-values*.

Table 8.C.1 Item Response Theory (IRT) Item Difficulty for English Language Arts/Literacy (ELA), Grade Three

Item ID	<i>b-value</i>		<i>d-values</i>	<i>d-values SE</i>
	<i>b-value</i>	SE		
CLTW3020108T1	-1.2020	0.05	NA	NA
CLTR3020057T1-M	-1.1884	0.04	1.1777 : -1.1777	0.0416 : 0.0416
CLTR3020058T1-M	-1.5636	0.05	NA	NA
CLTR3020059T1-O	-1.2102	0.03	-1.3367 : 1.3367	0.0681 : 0.0681
CLTW3020095T1	-1.6049	0.05	1.1986 : -1.1986	0.0483 : 0.0483
CLTR3020105T1	-1.0400	0.05	NA	NA
CLTW3020107T1	-1.6479	0.05	NA	NA
CLTR3020140T2-M	-1.3405	0.04	1.4481 : -1.4481	0.0453 : 0.0453
CLTR3020141T2-M	0.1868	0.04	NA	NA
CLTR3020142T2-M	0.0048	0.03	-0.6796 : 0.6796	0.0458 : 0.0458
CLTR3020051T1	-0.7166	0.06	NA	NA
CLTR3020052T1	-0.7978	0.06	NA	NA
CLTR3020053T1-M	-0.6887	0.06	NA	NA
CLTR3020170T1	-0.0536	0.04	-0.5992 : 0.5992	0.0663 : 0.0663
CLTR3020169T1	-0.8655	0.05	1.1487 : -1.1487	0.0514 : 0.0514
CLTW3020171T1-R	0.1886	0.06	NA	NA
CLTR3020093T1	-0.5518	0.06	NA	NA
CLTR3040231T1	-2.1147	0.07	NA	NA
CLTW3020146T2	-1.1548	0.06	1.5341 : -1.5341	0.0586 : 0.0586
CLTR3020143T2	-0.9488	0.06	NA	NA
CLTW3020145T2-M	-0.7860	0.04	0.6112 : -0.6112	0.0516 : 0.0516
CLTW3020162T2	-0.7764	0.06	NA	NA
CLTW3040186T2	-0.2539	0.04	0.6966 : -0.6966	0.0509 : 0.0509
CLTR3030110T2	-1.4258	0.05	0.8875 : -0.8875	0.0579 : 0.0579
CLTR3030028T1	0.0353	0.06	NA	NA
CLTR3020094T1	0.2199	0.06	NA	NA
CLTW3030030T1	0.0746	0.04	0.1532 : -0.1532	0.0602 : 0.0602
CLTR3030136T1	-0.8994	0.06	0.6495 : -0.6495	0.0755 : 0.0755
CLTW3020165T2	-0.2936	0.06	NA	NA
CLTR3020163T2	-0.2373	0.06	NA	NA
CLTR3020164T2	-0.5903	0.07	NA	NA
CLTR3030080T2	0.2232	0.06	NA	NA
CLTR3030081T2	-0.0696	0.06	NA	NA
CLTW3030082T2	-0.7508	0.06	0.9865 : -0.9865	0.0717 : 0.0717
CLTW3030113T2	-0.0673	0.04	-0.26 : 0.26	0.0569 : 0.0569

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTR3040181T2	-0.3181	0.05	0.6322 : -0.6322	0.0535 : 0.0535
CLTW3020403T3	0.8013	0.04	-0.1798 : 0.1798	0.0506 : 0.0506
CLTW3020161T2	1.2992	0.05	NA	NA
CLTR3040191T3	1.0254	0.06	NA	NA
CLTR3030168T3	0.2347	0.06	NA	NA
CLTR3040188T2	-0.5843	0.11	NA	NA
CLTR3040187T2	0.8023	0.09	2.1643 : -2.1643	0.0908 : 0.0908
CLTR3040189T2	0.1509	0.09	NA	NA
CLTR3040182T2	0.1579	0.09	NA	NA
CLTW3020179T3	1.2861	0.06	0.2959 : -0.2959	0.0775 : 0.0775
CLTR3030158T3-R	-2.3055	0.21	NA	NA
CLTR3030159T3	1.1488	0.08	NA	NA
CLTW3030160T3	1.1526	0.06	-0.473 : 0.473	0.0914 : 0.0914
CLTR3030166T3	-0.1375	0.10	1.4494 : -1.4494	0.1068 : 0.1068
CLTR3040194T3	0.2198	0.09	NA	NA
CLTR3040190T3	-1.2824	0.19	0.8855 : -0.8855	0.2042 : 0.2042
CLTR3040024T1	-0.3107	0.08	NA	NA
CLTR3040025T1	-1.6008	0.09	1.0031 : -1.0031	0.0957 : 0.0957
CLTR3040026T1	-0.5753	0.08	NA	NA
CLTW3040004T1	-0.0122	0.07	NA	NA
CLTR3040039T1	0.3047	0.09	NA	NA
CLTR3040038T1	-0.5971	0.07	1.3993 : -1.3993	0.0841 : 0.0841
CLTR3040040T1	0.2238	0.08	NA	NA
CLTW3040227T2	1.3617	0.09	NA	NA
CLTR3040232T1	-1.1344	0.09	1.1986 : -1.1986	0.0963 : 0.0963
CLTR3040183T2	-1.4139	0.09	1.1072 : -1.1072	0.1061 : 0.1061
CLTW3040184T2	0.6629	0.09	NA	NA
CLTW3040022T1	-1.3976	0.11	NA	NA
CLTR3040180T2	0.1562	0.08	NA	NA
CLTR3040085T2	1.0056	0.09	NA	NA
CLTR3040084T2	0.2345	0.09	NA	NA
CLTW3040086T2	-0.5037	0.07	0.7516 : -0.7516	0.0797 : 0.0797
CLTR3030164T3	-1.4405	0.11	1.2273 : -1.2273	0.1134 : 0.1134
CLTR3040179T2	-0.7722	0.10	NA	NA
CLTW3040193T3	0.6194	0.06	-0.1479 : 0.1479	0.094 : 0.094
CLTR3040192T3	-0.3103	0.05	-1.285 : 1.285	0.1363 : 0.1363

Table 8.C.2 IRT Item Difficulty for ELA, Grade Four

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTR4020239T1	-1.6174	0.05	NA	NA
CLTR4020304T1-M	-0.7356	0.04	NA	NA
CLTR4020305T1-M	-1.0852	0.04	1.0683 : -1.0683	0.0391 : 0.0391
CLTW4020306T1-O	-1.1399	0.04	1.2711 : -1.2711	0.0395 : 0.0395
CLTW4020240T1-M	-1.0839	0.03	0.3671 : -0.3671	0.0399 : 0.0399
CLTR4020308T1	-0.6124	0.04	NA	NA
CLTR4020084T2	-1.4097	0.04	NA	NA
CLTR4030020T2	-0.3440	0.04	NA	NA
CLTR4030021T2	-0.4636	0.03	1.5181 : -1.5181	0.0354 : 0.0354
CLTW4030022T2	0.2043	0.04	NA	NA
CLTR4020256T1-M	-0.4757	0.06	NA	NA
CLTR4020257T1-M	-1.2245	0.05	1.0088 : -1.0088	0.0573 : 0.0573
CLTR4020258T1-M	-0.8979	0.04	-1.3175 : 1.3175	0.0868 : 0.0868
CLTR4040202T1	-1.3672	0.06	NA	NA
CLTR4030173T1	-0.3374	0.06	NA	NA
CLTR4020237T1	-1.8467	0.07	NA	NA
CLTR4030170T1	-0.0558	0.06	NA	NA
CLTR4030171T1	-1.7140	0.05	1.0277 : -1.0277	0.0572 : 0.0572
CLTW4040203T1	-1.3333	0.06	NA	NA
CLTR4020116T2	-0.5571	0.06	NA	NA
CLTR4020117T2	-1.1405	0.05	1.1147 : -1.1147	0.0576 : 0.0576
CLTW4020118T2	0.0373	0.06	NA	NA
CLTR4030023T2-R	-0.4582	0.06	NA	NA
CLTR4030024T2	-0.6240	0.05	1.416 : -1.416	0.0572 : 0.0572
CLTR4030025T2	-0.1607	0.04	-0.4186 : 0.4186	0.0679 : 0.0679
CLTR4040200T1	1.0577	0.06	NA	NA
CLTR4030172T1	-0.6059	0.05	0.6798 : -0.6798	0.0596 : 0.0596
CLTR4030062T2	-0.8180	0.05	0.3222 : -0.3222	0.056 : 0.056
CLTW4040074T2	0.7441	0.05	NA	NA
CLTR4040005T2	-1.0417	0.07	NA	NA
CLTR4040069T2	0.5668	0.05	NA	NA
CLTW4020138T2	-0.5089	0.06	NA	NA
CLTR4020090T2	1.5100	0.07	NA	NA
CLTR4020091T2	-0.0996	0.05	1.5126 : -1.5126	0.0559 : 0.0559
CLTR4020092T2	0.1171	0.04	-0.4643 : 0.4643	0.0631 : 0.0631
CLTR4040072T2	-0.1543	0.05	1.2021 : -1.2021	0.0541 : 0.0541
CLTR4020245T3	0.3779	0.06	NA	NA
CLTR4020244T3-M	0.8215	0.04	-0.0068 : 0.0068	0.0598 : 0.0598
CLTW4020246T3	0.7030	0.04	0.4621 : -0.4621	0.0551 : 0.0551
CLTR4020119T2-M	1.7066	0.07	NA	NA
CLTR4020120T2-M	0.7580	0.05	0.8737 : -0.8737	0.0614 : 0.0614
CLTW4020121T2-M	0.9203	0.07	NA	NA

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTR4020083T2	0.6193	0.07	NA	NA
CLTR4040195T3	0.7261	0.07	NA	NA
CLTR4030089T3	0.7575	0.07	NA	NA
CLTR4030090T3	0.2882	0.06	1.3919 : -1.3919	0.0704 : 0.0704
CLTR4030091T3	0.4597	0.05	-0.8522 : 0.8522	0.0883 : 0.0883
CLTW4030132T3-R	0.8818	0.07	NA	NA
CLTW4030133T3-R	0.6248	0.05	0.0483 : -0.0483	0.0674 : 0.0674
CLTR4020128T3	-0.2647	0.08	NA	NA
CLTR4030131T3	0.5158	0.07	NA	NA
CLTR4040006T1	-0.9121	0.09	NA	NA
CLTR4040007T1	-1.0469	0.07	0.3942 : -0.3942	0.0841 : 0.0841
CLTW4040008T1	-0.6390	0.07	1.2921 : -1.2921	0.0738 : 0.0738
CLTR4040199T1	-1.7658	0.10	NA	NA
CLTR4040001T2	-0.9917	0.09	NA	NA
CLTR4040002T2	-0.2325	0.08	NA	NA
CLTR4040003T2	-0.9432	0.05	-0.7752 : 0.7752	0.1135 : 0.1135
CLTR4040071T2	-0.7951	0.09	NA	NA
CLTR4040100T1	-2.0914	0.12	NA	NA
CLTR4040101T1	-1.2662	0.08	1.0156 : -1.0156	0.0975 : 0.0975
CLTW4040102T1	0.4418	0.09	NA	NA
CLTR4040201T1	-1.2849	0.10	1.6228 : -1.6228	0.1057 : 0.1057
CLTR4040051T2	-0.6473	0.09	NA	NA
CLTR4040052T2	-0.6973	0.07	1.4413 : -1.4413	0.0814 : 0.0814
CLTW4040053T2	0.4830	0.08	NA	NA
CLTW4040076T2	-1.0349	0.08	1.1992 : -1.1992	0.0866 : 0.0866
CLTR4040070T2	-1.3240	0.10	1.4626 : -1.4626	0.105 : 0.105
CLTW4040073T2	0.6081	0.08	NA	NA
CLTW4040009T3	0.4733	0.05	-0.0196 : 0.0196	0.0823 : 0.0823
CLTR4040197T3	-1.3567	0.10	NA	NA

Table 8.C.3 IRT Item Difficulty for ELA, Grade Five

Item ID	<i>b</i> -value		<i>d</i> -values	
	<i>b</i> -value	SE	<i>d</i> -values	<i>d</i> -values SE
CLTW5020317T1	-1.9011	0.05	1.1669 : -1.1669	0.0532 : 0.0532
CLTR5020453T1-M	-2.2502	0.06	0.8333 : -0.8333	0.0634 : 0.0634
CLTW5020454T1-M	-1.3627	0.04	1.3623 : -1.3623	0.0451 : 0.0451
CLTR5030154T1	-1.4992	0.04	0.8485 : -0.8485	0.0463 : 0.0463
CLTR5030156T1	-1.7498	0.05	1.0828 : -1.0828	0.0523 : 0.0523
CLTR5020314T1	-0.6965	0.04	NA	NA
CLTR5030185T2	-1.9952	0.06	1.2737 : -1.2737	0.0608 : 0.0608
CLTR5020253T2-M	-0.2421	0.04	NA	NA
CLTR5020254T2-M	-1.0471	0.04	1.438 : -1.438	0.0404 : 0.0404
CLTW5020255T2-M	0.8506	0.04	NA	NA
CLTW5030157T1	-1.8021	0.07	NA	NA
CLTR5040041T1	-0.4708	0.06	NA	NA
CLTR5020327T1-M	-0.6918	0.07	NA	NA
CLTR5020328T1-M	-1.1309	0.05	0.9358 : -0.9358	0.0591 : 0.0591
CLTW5020329T1-M	-0.3277	0.07	NA	NA
CLTW5020335T1	0.2349	0.07	NA	NA
CLTR5030263T1	-0.4589	0.07	NA	NA
CLTR5030264T1	-1.1141	0.06	1.4323 : -1.4323	0.0643 : 0.0643
CLTW5030265T1	0.0480	0.07	NA	NA
CLTR5020047T2	-1.3143	0.06	1.5055 : -1.5055	0.067 : 0.067
CLTR5020346T2	-0.7685	0.04	-0.5784 : 0.5784	0.0721 : 0.0721
CLTR5030183T2	-1.0902	0.06	1.5106 : -1.5106	0.0647 : 0.0647
CLTR5040104T2	-0.3695	0.07	NA	NA
CLTW5040105T2	-0.9806	0.06	1.3464 : -1.3464	0.0624 : 0.0624
CLTR5040103T2	0.1779	0.07	NA	NA
CLTR5030122T1	0.0665	0.06	NA	NA
CLTR5030123T1-M	0.4855	0.04	-0.4859 : 0.4859	0.0632 : 0.0632
CLTW5030124T1	-1.1720	0.07	1.1472 : -1.1472	0.0791 : 0.0791
CLTW5020347T2	1.0173	0.04	NA	NA
CLTR5030179T2	-0.2329	0.06	NA	NA
CLTR5030180T2	-1.0597	0.06	1.0929 : -1.0929	0.0711 : 0.0711
CLTW5030181T2-R	0.2081	0.06	NA	NA
CLTR5040116T2	0.3342	0.06	NA	NA
CLTR5020342T2	0.4367	0.03	-1.2502 : 1.2502	0.0619 : 0.0619
CLTR5040109T2	-1.5157	0.08	NA	NA
CLTR5040110T2	-0.8283	0.05	0.2216 : -0.2216	0.0669 : 0.0669
CLTW5040111T2	-1.0580	0.06	0.1803 : -0.1803	0.0734 : 0.0734
CLTR5030140T3	0.1947	0.06	NA	NA
CLTR5020073T3	0.9652	0.06	NA	NA
CLTW5030139T3	-0.2891	0.06	NA	NA
CLTR5040087T2	0.0143	0.07	NA	NA
CLTR5040088T2	-0.9520	0.10	0.978 : -0.978	0.1116 : 0.1116

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTR5040089T2	0.6296	0.04	-0.9032 : 0.9032	0.0806 : 0.0806
CLTR5040115T2	-1.9590	0.26	1.9064 : -1.9064	0.2608 : 0.2608
CLTR5020038T3-M	1.7626	0.07	NA	NA
CLTR5020039T3-M	1.4798	0.06	NA	NA
CLTW5020040T3-M	1.4492	0.04	0.1673 : -0.1673	0.0617 : 0.0617
CLTR5020341T3	-0.3228	0.10	2.4683 : -2.4683	0.1078 : 0.1078
CLTR5040171T3	0.4117	0.06	NA	NA
CLTW5040230T3	0.0323	0.05	-0.4708 : 0.4708	0.0805 : 0.0805
CLTR5040228T3	0.8469	0.06	NA	NA
CLTR5040229T3	0.8469	0.06	NA	NA
CLTW5040174T3	-0.2379	0.07	NA	NA
CLTW5040019T1	-0.5331	0.08	NA	NA
CLTR5040014T1	-0.9810	0.08	NA	NA
CLTR5040013T1	-1.7599	0.10	0.5689 : -0.5689	0.1111 : 0.1111
CLTW5040015T1	-1.0834	0.07	0.5615 : -0.5615	0.0828 : 0.0828
CLTW5030187T2-R	-0.1486	0.08	NA	NA
CLTR5040035T1	-1.1546	0.10	NA	NA
CLTW5040036T1	-1.5350	0.10	NA	NA
CLTR5040034T1	-1.5457	0.09	1.1016 : -1.1016	0.1014 : 0.1014
CLTR5040118T2	-1.7846	0.12	1.331 : -1.331	0.123 : 0.123
CLTR5020250T3	-0.2407	0.06	0.3936 : -0.3936	0.0769 : 0.0769
CLTW5020251T3	-0.6012	0.06	0.0343 : -0.0343	0.086 : 0.086
CLTR5020252T3	0.6292	0.08	NA	NA
CLTR5030145T1	-1.1075	0.10	NA	NA
CLTR5040016T1	-1.4732	0.11	NA	NA
CLTR5040018T1	-0.5330	0.05	-1.2947 : 1.2947	0.1335 : 0.1335
CLTR5040017T1	-1.1961	0.08	0.6154 : -0.6154	0.0965 : 0.0965
CLTR5020336T1	-0.6850	0.05	-1.4169 : 1.4169	0.1396 : 0.1396
CLTR5030182T2-R	-0.2204	0.09	NA	NA
CLTR5040117T2	-0.5769	0.09	NA	NA
CLTW5040120T2	0.4517	0.08	NA	NA

Table 8.C.4 IRT Item Difficulty for ELA, Grade Six

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTR6020097T1	-1.5022	0.03	-1.6343 : 1.6343	0.0796 : 0.0796
CLTR6030030T1	-0.8929	0.03	-0.7381 : 0.7381	0.0484 : 0.0484
CLTR6030031T1	-1.4499	0.04	NA	NA
CLTW6030032T1-O	-0.6686	0.03	0.8043 : -0.8043	0.0338 : 0.0338
CLTW6030202T1	-0.8621	0.04	NA	NA
CLTW6020104T1	-1.3098	0.04	1.3108 : -1.3108	0.0435 : 0.0435
CLTR6020204T2	-1.6579	0.05	1.3009 : -1.3009	0.0526 : 0.0526
CLTR6020200T2-M	-0.4611	0.04	NA	NA
CLTR6020199T2-M	-0.7328	0.04	NA	NA
CLTR6020202T2	-1.2802	0.04	1.1829 : -1.1829	0.0432 : 0.0432
CLTR6020101T1-R	-0.6821	0.12	NA	NA
CLTW6030012T1-R	-0.2067	0.13	NA	NA
CLTR6030010T1-R	-0.5276	0.12	NA	NA
CLTR6030011T1-R	0.0392	0.11	0.1748 : -0.1748	0.152 : 0.152
CLTR6030203T1	-0.4786	0.12	NA	NA
CLTR6020098T1	-0.9065	0.11	1.3091 : -1.3091	0.1131 : 0.1131
CLTR6030042T1	-0.8831	0.07	-1.5637 : 1.5637	0.1931 : 0.1931
CLTR6040124T1	-1.1619	0.12	NA	NA
CLTR6020099T1	-1.1127	0.07	-1.6406 : 1.6406	0.1951 : 0.1951
CLTR6030073T2	-0.1930	0.13	NA	NA
CLTR6030074T2-R	1.4046	0.21	NA	NA
CLTW6030075T2	-0.7524	0.08	0.1129 : -0.1129	0.1192 : 0.1192
CLTW6040204T2	-0.2741	0.13	NA	NA
CLTR6030128T2	-0.8376	0.09	0.7813 : -0.7813	0.1133 : 0.1133
CLTW6020208T2	-0.6704	0.12	NA	NA
CLTR6030064T1-R	-0.9326	0.05	NA	NA
CLTR6030065T1-R	-1.7819	0.06	NA	NA
CLTW6030066T1	-0.2440	0.04	1.0808 : -1.0808	0.0466 : 0.0466
CLTW6040166T2	-1.2360	0.06	1.5068 : -1.5068	0.0594 : 0.0594
CLTR6030260T2	-0.4466	0.05	NA	NA
CLTR6030261T2	-0.3778	0.04	0.9673 : -0.9673	0.0463 : 0.0463
CLTR6030262T2	-0.5699	0.03	-1.0635 : 1.0635	0.0687 : 0.0687
CLTW6040165T2	0.2025	0.05	NA	NA
CLTR6030197T2	0.4507	0.04	NA	NA
CLTR6030147T2	0.3415	0.05	NA	NA
CLTR6030148T2	-0.6922	0.04	1.0886 : -1.0886	0.0487 : 0.0487
CLTW6030149T2	-0.2069	0.05	NA	NA
CLTR6030205T3	-0.5599	0.05	1.3699 : -1.3699	0.0492 : 0.0492
CLTW6040033T3	0.8573	0.06	NA	NA
CLTR6040030T3	-0.2947	0.04	1.221 : -1.221	0.0476 : 0.0476
CLTR6040163T2	0.8887	0.05	NA	NA
CLTW6040168T2	-1.5690	0.10	0.5244 : -0.5244	0.1133 : 0.1133

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTR6040169T2	-0.6047	0.06	NA	NA
CLTR6040170T2	1.1444	0.05	NA	NA
CLTW6020209T2	0.4724	0.04	0.7034 : -0.7034	0.0467 : 0.0467
CLTW6030228T3	-0.1409	0.05	NA	NA
CLTR6020418T3	1.0706	0.03	-0.3387 : 0.3387	0.0545 : 0.0545
CLTR6020416T3	1.6361	0.05	NA	NA
CLTR6020417T3	0.0423	0.05	1.6841 : -1.6841	0.0547 : 0.0547
CLTW6020424T3	1.2052	0.05	NA	NA
CLTR6040032T3	-0.4727	0.06	1.3778 : -1.3778	0.0624 : 0.0624
CLTR6040010T3	-1.0384	0.07	0.7288 : -0.7288	0.0801 : 0.0801
CLTR6040011T3	0.7180	0.05	NA	NA
CLTW6040012T3	0.9452	0.04	0.1804 : -0.1804	0.0488 : 0.0488
CLTW6040123T1	-1.4798	0.08	0.9944 : -0.9944	0.0943 : 0.0943
CLTR6040112T1	-1.1193	0.06	-1.2681 : 1.2681	0.1272 : 0.1272
CLTR6040114T1	-0.3989	0.08	NA	NA
CLTR6040113T1	-1.3521	0.08	NA	NA
CLTR6040176T2	-1.6746	0.09	0.6966 : -0.6966	0.1093 : 0.1093
CLTW6040177T2	-0.5834	0.08	NA	NA
CLTR6040178T2	0.1444	0.08	NA	NA
CLTR6040164T2	-0.1195	0.08	NA	NA
CLTW6040108T1	0.0059	0.08	NA	NA
CLTR6040106T1	-0.7685	0.09	NA	NA
CLTR6040107T1	0.0207	0.05	-0.1863 : 0.1863	0.0811 : 0.0811
CLTR6040167T2	-1.3129	0.09	1.4425 : -1.4425	0.1005 : 0.1005
CLTW6020103T1	0.1112	0.08	NA	NA
CLTR6040236T1	-1.1335	0.08	1.3106 : -1.3106	0.0939 : 0.0939
CLTR6040121T1	-0.6711	0.05	-0.8765 : 0.8765	0.1109 : 0.1109
CLTW6020102T1	-0.6868	0.09	NA	NA
CLTR6020423T2-R	-1.1826	0.10	NA	NA
CLTR6040031T3	0.8050	0.08	NA	NA
CLTW6040138T1	0.2959	0.08	NA	NA
CLTR6040122T1	-0.8701	0.09	NA	NA

Table 8.C.5 IRT Item Difficulty for ELA, Grade Seven

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTW7020385T1	-1.6861	0.05	NA	NA
CLTR7020411T1	-1.9730	0.05	NA	NA
CLTR7020410T1	-0.6278	0.04	NA	NA
CLTW7020412T1	-1.1234	0.05	2.3954 : -2.3954	0.0483 : 0.0483
CLTR7020380T1	-1.5455	0.05	NA	NA
CLTW7020386T1	-1.2743	0.04	1.6936 : -1.6936	0.0437 : 0.0437
CLTR7020368T2	-1.2142	0.05	1.8255 : -1.8255	0.0455 : 0.0455
CLTR7030070T2	-0.9702	0.04	1.712 : -1.712	0.041 : 0.041
CLTR7030071T2	-0.1371	0.04	NA	NA
CLTW7030072T2	-0.4838	0.04	NA	NA
CLTR7020382T1	-1.0172	0.06	1.5399 : -1.5399	0.0588 : 0.0588
CLTR7030252T1-R	-2.1068	0.07	NA	NA
CLTR7030253T1-R	0.0891	0.07	NA	NA
CLTW7030254T1	-1.2100	0.05	1.1999 : -1.1999	0.0585 : 0.0585
CLTR7020379T1	-1.4273	0.06	1.3255 : -1.3255	0.0632 : 0.0632
CLTR7020383T1	-0.5676	0.04	-1.1793 : 1.1793	0.0854 : 0.0854
CLTR7040127T1	-2.0499	0.07	NA	NA
CLTR7040128T1	-0.3863	0.06	NA	NA
CLTW7040129T1	-1.5035	0.05	0.6615 : -0.6615	0.0635 : 0.0635
CLTR7020378T2	-0.1525	0.04	-0.361 : 0.361	0.0693 : 0.0693
CLTR7020377T2	0.3969	0.07	NA	NA
CLTR7020376T2	-0.0407	0.07	NA	NA
CLTW7040065T2	-1.6017	0.05	0.7465 : -0.7465	0.0504 : 0.0504
CLTW7040066T2	-0.2578	0.07	NA	NA
CLTR7040175T2	-0.3799	0.06	NA	NA
CLTW7030246T1	-0.3904	0.06	NA	NA
CLTR7020381T1	-0.0201	0.05	NA	NA
CLTW7020384T1	1.0863	0.06	NA	NA
CLTR7030054T2	-0.3464	0.06	NA	NA
CLTR7030055T2	0.6589	0.06	NA	NA
CLTW7030056T2	0.1099	0.04	0.7291 : -0.7291	0.0477 : 0.0477
CLTW7030242T2	-0.8996	0.06	NA	NA
CLTWT020155T2	0.2908	0.04	0.5744 : -0.5744	0.0484 : 0.0484
CLTR7020154T2	-1.1547	0.07	NA	NA
CLTR7020153T2	0.8376	0.05	NA	NA
CLTR7020370T2	0.2863	0.05	NA	NA
CLTR7020365T3	0.3014	0.03	-0.8691 : 0.8691	0.0657 : 0.0657
CLTR7040062T3	-0.7241	0.06	1.5122 : -1.5122	0.06 : 0.06
CLTR7030250T3	0.4306	0.05	NA	NA
CLTR7020158T2	0.3013	0.06	0.3566 : -0.3566	0.0776 : 0.0776
CLTR7020156T2	0.8286	0.07	NA	NA
CLTR7020157T2	1.2602	0.07	NA	NA

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTR7040045T2	-0.2055	0.09	NA	NA
CLTR7040046T2	-0.3633	0.09	NA	NA
CLTR7040047T2	0.3984	0.05	-1.4821 : 1.4821	0.1225 : 0.1225
CLTR7020360T3	-0.2154	0.11	2.184 : -2.184	0.1109 : 0.1109
CLTR7020362T3	1.1906	0.07	NA	NA
CLTW7030116T3	0.9769	0.05	0.1483 : -0.1483	0.0714 : 0.0714
CLTR7030114T3	0.0743	0.08	NA	NA
CLTR7030115T3	0.5775	0.07	NA	NA
CLTW7020350T3	0.8337	0.06	0.4384 : -0.4384	0.0707 : 0.0707
CLTR7020348T3	1.4285	0.07	NA	NA
CLTR7020349T3	2.7420	0.09	NA	NA
CLTR7040061T3	0.9730	0.05	-0.768 : 0.768	0.0874 : 0.0874
CLTR7040153T2	-0.8531	0.09	NA	NA
CLTR7040154T2	-1.2058	0.07	0.9018 : -0.9018	0.0873 : 0.0873
CLTW7040155T2	-0.9855	0.07	0.3076 : -0.3076	0.0873 : 0.0873
CLTR7040162T1	-1.5846	0.10	NA	NA
CLTR7040042T2	-0.6917	0.09	NA	NA
CLTR7040043T2	-0.8560	0.09	NA	NA
CLTW7040044T2	-1.1822	0.08	0.9832 : -0.9832	0.0918 : 0.0918
CLTR7040064T2	0.4710	0.08	NA	NA
CLTR7040077T3	0.5296	0.08	NA	NA
CLTR7040078T3	0.3545	0.08	NA	NA
CLTW7040079T3	0.3923	0.05	-0.0906 : 0.0906	0.079 : 0.079
CLTW7040068T2	0.4125	0.08	NA	NA
CLTR7040049T2	-0.3388	0.08	NA	NA
CLTR7040048T2	-0.9566	0.08	1.5558 : -1.5558	0.0846 : 0.0846
CLTW7040050T2	-0.2663	0.07	NA	NA
CLTR7040063T2	-0.3444	0.08	NA	NA
CLTR7040125T1	-0.7918	0.06	-1.1737 : 1.1737	0.1279 : 0.1279
CLTR7040156T1	-1.9263	0.11	0.8345 : -0.8345	0.1201 : 0.1201
CLTW7040157T1	-0.3065	0.09	NA	NA
CLTR7040126T1	-0.6443	0.08	NA	NA

Table 8.C.6 IRT Item Difficulty for ELA, Grade Eight

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTW8020390T1	-2.2501	0.06	NA	NA
CLTR8020394T1-M	-0.5150	0.04	1.7532 : -1.7532	0.0372 : 0.0372
CLTR8020395T1-M	-1.2627	0.04	NA	NA
CLTW8020396T1-O	-0.7011	0.04	1.535 : -1.535	0.038 : 0.038
CLTR8020446T1	-1.3740	0.05	1.381 : -1.381	0.0483 : 0.0483
CLTR8020447T1	-0.7467	0.04	1.9917 : -1.9917	0.0431 : 0.0431
CLTR8020321T2-M	-1.2155	0.04	0.9677 : -0.9677	0.044 : 0.044
CLTR8020322T2-M	0.7042	0.04	NA	NA
CLTR8020323T2-M	-0.2572	0.02	-1.0948 : 1.0948	0.05 : 0.05
CLTW8030219T2	-0.3388	0.03	-0.2922 : 0.2922	0.0393 : 0.0393
CLTW8030212T1	-0.2648	0.03	1.0117 : -1.0117	0.0361 : 0.0361
CLTR8020445T1	-0.2786	0.04	NA	NA
CLTR8020210T1-R	-0.6614	0.06	NA	NA
CLTR8020211T1-M	-0.4503	0.06	NA	NA
CLTW8020212T1-M	-1.4828	0.06	NA	NA
CLTR8040080T1	-0.0307	0.04	-0.8737 : 0.8737	0.0712 : 0.0712
CLTR8040151T2	-0.4291	0.04	NA	NA
CLTW8040037T1	-1.7813	0.07	NA	NA
CLTR8030210T1-R	-0.6131	0.06	NA	NA
CLTW8020260T2	-0.1906	0.04	-0.0382 : 0.0382	0.0565 : 0.0565
CLTR8030207T2	0.1309	0.06	NA	NA
CLTR8030208T2	-0.3118	0.05	1.4943 : -1.4943	0.0542 : 0.0542
CLTW8030209T2-R	-0.3173	0.06	NA	NA
CLTR8020259T2	-1.0014	0.05	0.904 : -0.904	0.0545 : 0.0545
CLTR8040152T2	-0.1641	0.06	NA	NA
CLTW8040158T2	-0.2878	0.05	NA	NA
CLTR8040150T2	0.2580	0.03	-0.4463 : 0.4463	0.0598 : 0.0598
CLTR8040145T2	1.2234	0.06	NA	NA
CLTR8040146T2	-1.1841	0.07	0.9424 : -0.9424	0.0789 : 0.0789
CLTW8040147T2	-1.0882	0.07	1.1174 : -1.1174	0.0761 : 0.0761
CLTR8020290T2	-0.0189	0.06	NA	NA
CLTR8020285T2-M	0.6815	0.05	NA	NA
CLTR8020286T2-M	0.3964	0.05	NA	NA
CLTW8020287T2-M	1.2406	0.05	NA	NA
CLTR8020072T3	0.8787	0.06	NA	NA
CLTR8020439T3	-0.1348	0.05	1.1866 : -1.1866	0.0528 : 0.0528
CLTW8030129T3	0.0753	0.04	0.2544 : -0.2544	0.0523 : 0.0523
CLTR8030223T2	-0.4635	0.09	NA	NA
CLTR8040148T2	-0.7487	0.12	1.4778 : -1.4778	0.1304 : 0.1304
CLTR8020066T3-M	0.3599	0.07	1.4075 : -1.4075	0.0789 : 0.0789
CLTR8020068T3-M	0.5023	0.05	-1.0476 : 1.0476	0.1076 : 0.1076
CLTR8020067T3-M	0.7505	0.08	NA	NA

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTR8030120T3	0.8543	0.08	NA	NA
CLTW8020069T3	1.0765	0.08	NA	NA
CLTR8040214T3	-0.8796	0.13	1.3095 : -1.3095	0.138 : 0.138
CLTR8040215T3	-0.4919	0.11	1.6939 : -1.6939	0.1171 : 0.1171
CLTW8040216T3	0.3649	0.05	0.0361 : -0.0361	0.081 : 0.081
CLTW8040220T3	-1.7665	0.15	NA	NA
CLTR8040090T1	-0.8413	0.06	NA	NA
CLTR8040091T1	-1.3863	0.06	0.7063 : -0.7063	0.0739 : 0.0739
CLTW8040092T1	-1.0583	0.06	0.8485 : -0.8485	0.0638 : 0.0638
CLTR8040219T3	0.0357	0.03	-0.8336 : 0.8336	0.068 : 0.068
CLTR8040142T2	-1.1994	0.07	NA	NA
CLTR8040144T2	-0.7148	0.05	1.2528 : -1.2528	0.0601 : 0.0601
CLTR8040143T2	0.3681	0.04	0.3916 : -0.3916	0.0549 : 0.0549
CLTR8040217T3	0.2453	0.06	NA	NA
CLTR8040218T3	-0.1672	0.08	NA	NA
CLTR8030125T1	-0.9950	0.08	0.9372 : -0.9372	0.09 : 0.09
CLTR8030126T1	-1.2165	0.10	NA	NA
CLTW8030127T1	-1.1438	0.08	0.7264 : -0.7264	0.094 : 0.094

Table 8.C.7 IRT Item Difficulty for ELA, Grade Eleven

Item ID	b-value	b-value SE	d-values	d-values SE
CLTRH020034T1	-1.2786	0.05	NA	NA
CLTRH020230T1	-0.1901	0.04	NA	NA
CLTRH020231T1	-1.3156	0.05	NA	NA
CLTWH020232T1	-1.2782	0.05	1.4444 : -1.4444	0.0482 : 0.0482
CLTRH020033T1	-0.7680	0.05	1.8409 : -1.8409	0.0456 : 0.0456
CLTRH020234T1	-0.8520	0.03	-0.7317 : 0.7317	0.0544 : 0.0544
CLTRH020220T2	-0.8357	0.05	NA	NA
CLTRH020221T2	0.0512	0.04	NA	NA
CLTWH020222T2	-0.8664	0.04	1.1879 : -1.1879	0.0426 : 0.0426
CLTWH020226T2	-0.5926	0.04	1.5851 : -1.5851	0.0407 : 0.0407
CLTRH020233T1	-1.0806	0.08	NA	NA
CLTWH020236T1	-1.5476	0.07	1.3083 : -1.3083	0.0793 : 0.0793
CLTRH020032T1-M	-0.0607	0.04	0.8504 : -0.8504	0.0396 : 0.0396
CLTRH030038T1	-0.1071	0.05	-0.6841 : 0.6841	0.0959 : 0.0959
CLTRH030037T1	-0.5394	0.07	1.3852 : -1.3852	0.073 : 0.073
CLTRH030036T1-R	-0.6395	0.08	NA	NA
CLTRH040131T1	-1.1302	0.07	1.2619 : -1.2619	0.0739 : 0.0739
CLTRH040132T1	-0.9282	0.06	1.0206 : -1.0206	0.071 : 0.071
CLTWH040133T1	-0.2914	0.08	NA	NA
CLTRH020217T2	-0.8429	0.07	NA	NA
CLTRH020218T2	-0.5160	0.07	1.7088 : -1.7088	0.0765 : 0.0765
CLTWH020219T2	0.0011	0.08	NA	NA
CLTRH020214T2	-0.5888	0.05	0.5834 : -0.5834	0.0699 : 0.0699
CLTWH040207T2	-0.2398	0.05	NA	NA
CLTWH040222T2	-0.2963	0.08	NA	NA
CLTWH030151T1	0.4047	0.05	NA	NA
CLTRH040130T1	-0.1258	0.06	NA	NA
CLTRH040221T2	-0.3976	0.06	NA	NA
CLTRH040208T2	-0.0488	0.04	0.9653 : -0.9653	0.0498 : 0.0498
CLTRH040209T2	-0.9805	0.05	0.6586 : -0.6586	0.0636 : 0.0636
CLTWH040210T2	0.9602	0.06	NA	NA
CLTRH020189T2	-0.4560	0.04	-1.3693 : 1.3693	0.0875 : 0.0875
CLTRH020187T2	1.1892	0.06	NA	NA
CLTRH020223T2	0.1116	0.05	NA	NA
CLTRH020213T2	0.6112	0.06	NA	NA
CLTWH030230T3	1.2837	0.06	NA	NA
CLTRH040056T3	-0.3124	0.04	-1.0251 : 1.0251	0.0749 : 0.0749
CLTWH040096T3	0.0670	0.05	NA	NA
CLTRH030093T2	-0.5727	0.13	1.1398 : -1.1398	0.1336 : 0.1336
CLTRH030092T2	0.5422	0.08	NA	NA
CLTRH030094T2	0.5242	0.06	-0.7011 : 0.7011	0.1013 : 0.1013
CLTRH020224T2	0.7639	0.05	-1.013 : 1.013	0.1069 : 0.1069
CLTRH040224T2	-0.1969	0.12	1.7701 : -1.7701	0.1207 : 0.1207

Item ID	<i>b</i>-value	<i>b</i>-value SE	<i>d</i>-values	<i>d</i>-values SE
CLTRH040225T2	-0.8962	0.12	NA	NA
CLTWH040226T2	-0.1769	0.08	0.108 : -0.108	0.1088 : 0.1088
CLTRH020278T3	2.2196	0.08	NA	NA
CLTWH020433T3	1.3405	0.05	0.2872 : -0.2872	0.071 : 0.071
CLTRH020266T3	1.5877	0.08	NA	NA
CLTWH020268T3	1.6275	0.08	NA	NA
CLTRH020267T3	0.7806	0.07	1.4915 : -1.4915	0.077 : 0.077
CLTRH040054T3	0.9265	0.08	NA	NA
CLTRH020275T3	0.6812	0.08	NA	NA
CLTWH040137T1	-1.1490	0.07	NA	NA
CLTRH040206T2	-1.0104	0.07	1.4123 : -1.4123	0.069 : 0.069
CLTRH040223T2	-0.8669	0.07	NA	NA
CLTRH040205T2	0.7038	0.06	NA	NA
CLTWH030052T1-R	-0.7944	0.07	NA	NA
CLTRH020031T1	-0.5027	0.07	NA	NA
CLTWH030153T2-R	0.0933	0.07	NA	NA
CLTRH030152T2	-0.6261	0.07	NA	NA
CLTRH040134T1	0.3429	0.05	-0.5222 : 0.5222	0.1004 : 0.1004
CLTRH040135T1	-0.1637	0.09	NA	NA
CLTWH040136T1	-0.8738	0.09	1.3775 : -1.3775	0.0976 : 0.0976
CLTRH030229T3-R	0.0468	0.09	NA	NA

Table 8.C.8 IRT Item Difficulty for Mathematics, Grade Three

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTM3020004T1	-0.9779	0.04	NA	NA
CLTM3020210T1	-0.8992	0.04	NA	NA
CLTM3020186T1	-0.9952	0.04	NA	NA
CLTM3030566T1	-0.8739	0.04	NA	NA
CLTM3020059T1	-0.5946	0.04	NA	NA
CLTM3020065T1	-1.0350	0.04	NA	NA
CLTM3020063T2	-0.2444	0.02	-1.3967 : 1.3967	0.0572 : 0.0572
CLTM3030592T2	0.0178	0.03	1.4232 : -1.4232	0.0342 : 0.0342
CLTM3020008T2	0.4500	0.04	NA	NA
CLTM3020172T2	0.1946	0.02	-0.3325 : 0.3325	0.0404 : 0.0404
CLTM3020018T1	-0.3327	0.09	NA	NA
CLTM3181019T2	0.3369	0.08	0.8082 : -0.8082	0.1013 : 0.1013
CLTM3030500T1	-0.1922	0.05	NA	NA
CLTM3020017T1	-0.7523	0.09	NA	NA
CLTM3030506T1	-0.1349	0.09	NA	NA
CLTM3020007T1	0.0848	0.05	NA	NA
CLTM3020062T1	-0.3502	0.05	-1.9157 : 1.9157	0.1724 : 0.1724
CLTM3020001T1	-0.3565	0.05	-1.0158 : 1.0158	0.1214 : 0.1214
CLTM3180964T2	0.7474	0.09	0.2979 : -0.2979	0.1185 : 0.1185
CLTM3030569T1	-0.2178	0.06	0.2611 : -0.2611	0.0886 : 0.0886
CLTM3180960T2	0.2349	0.10	NA	NA
CLTM3030496T2-R	0.0419	0.10	NA	NA
CLTM3020060T2	-0.0368	0.09	NA	NA
CLTM3020010T1	-0.1035	0.06	-0.9646 : 0.9646	0.122 : 0.122
CLTM3030578T1-R	-0.8594	0.09	NA	NA
CLTM3020171T1	0.1875	0.04	-0.3392 : 0.3392	0.0635 : 0.0635
CLTM3030591T1	-0.4250	0.04	0.9442 : -0.9442	0.0542 : 0.0542
CLTM3020057T2	-0.0125	0.06	NA	NA
CLTM3020054T2	0.3581	0.04	-1.4346 : 1.4346	0.0918 : 0.0918
CLTM3020202T2	0.0486	0.06	NA	NA
CLTM3030582T2	-0.1575	0.04	0.4759 : -0.4759	0.0535 : 0.0535
CLTM3030567T2	0.1322	0.06	NA	NA
CLTM3030499T2	0.6077	0.05	0.9557 : -0.9557	0.0584 : 0.0584
CLTM3030579T2	0.2620	0.06	NA	NA
CLTM3020205T3	0.3277	0.06	NA	NA
CLTM3020187T2	1.2470	0.07	NA	NA
CLTM3030502T3	0.2082	0.06	NA	NA
CLTM3020003T3	-0.0464	0.03	-1.4164 : 1.4164	0.0884 : 0.0884
CLTM3020209T3	2.3584	0.07	NA	NA
CLTM3020204T2	1.0812	0.05	NA	NA
CLTM3030565T3	0.7878	0.05	NA	NA
CLTM3020066T2	-0.0417	0.06	NA	NA

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTM3020168T2	0.7680	0.06	NA	NA
CLTM3030583T3	1.0742	0.05	1.7224 : -1.7224	0.0576 : 0.0576
CLTM3181023T3	0.6404	0.04	0.908 : -0.908	0.0493 : 0.0493
CLTM3020058T3	2.8350	0.09	NA	NA
CLTM3020169T3	2.2633	0.08	NA	NA
CLTM3020173T3	0.7618	0.03	-1.0944 : 1.0944	0.0731 : 0.0731
CLTM3030574T3-R	0.6458	0.04	-0.647 : 0.647	0.0621 : 0.0621
CLTM3030590T2	1.2947	0.04	0.8802 : -0.8802	0.0547 : 0.0547
CLTM3030710T3	1.2512	0.04	0.6043 : -0.6043	0.0541 : 0.0541
CLTM3020175T2	0.7803	0.05	NA	NA
CLTM3020203T3	1.2403	0.06	NA	NA
CLTM3030497T3-R	2.5023	0.11	NA	NA
CLTM3180958T1	-0.2453	0.07	NA	NA
CLTM3181018T2	0.2299	0.05	0.2348 : -0.2348	0.067 : 0.067
CLTM3180887T1	-0.8950	0.08	NA	NA
CLTM3180889T3	0.2240	0.08	NA	NA
CLTM3181024T1	-0.2343	0.08	NA	NA
CLTM3180961T2	-0.4038	0.09	NA	NA
CLTM3180890T1	-0.4166	0.08	NA	NA
CLTM3181020T3	0.5898	0.07	1.4924 : -1.4924	0.0847 : 0.0847
CLTM3030501T2-R	0.4706	0.09	NA	NA
CLTM3180963T1	-0.2796	0.06	0.6419 : -0.6419	0.0798 : 0.0798
CLTM3180891T2	1.0145	0.09	NA	NA
CLTM3180957T1	-0.5745	0.08	NA	NA
CLTM3180884T1	-0.6030	0.06	0.3539 : -0.3539	0.0838 : 0.0838
CLTM3180888T2	0.1641	0.08	NA	NA
CLTM3180886T2	0.9677	0.07	0.5664 : -0.5664	0.0889 : 0.0889
CLTM3180962T3	0.7078	0.06	0.3652 : -0.3652	0.0847 : 0.0847
CLTM3180959T1	-0.0841	0.08	NA	NA
CLTM3180885T2	0.1985	0.05	-0.8628 : 0.8628	0.1065 : 0.1065
CLTM3030563T1-R	0.4549	0.08	NA	NA

Table 8.C.9 IRT Item Difficulty for Mathematics, Grade Four

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTM4020255T1	-1.4787	0.04	NA	NA
CLTM4030475T1	-1.4725	0.04	0.9798 : -0.9798	0.0462 : 0.0462
CLTM4030481T1	-0.8915	0.04	NA	NA
CLTM4020246T1	-0.8350	0.04	NA	NA
CLTM4020177T1	-0.6833	0.03	1.2203 : -1.2203	0.0351 : 0.0351
CLTM4020189T1	-0.4436	0.04	NA	NA
CLTM4030612T1	-1.4449	0.04	1.1306 : -1.1306	0.0474 : 0.0474
CLTM4030484T1	0.1219	0.02	-0.1986 : 0.1986	0.0366 : 0.0366
CLTM4030482T2	-0.2978	0.04	NA	NA
CLTM4020178T2	-0.0930	0.02	0.1533 : -0.1533	0.0339 : 0.0339
CLTM4030490T1	-0.2218	0.06	NA	NA
CLTM4181003T2	0.3212	0.06	1.2365 : -1.2365	0.0666 : 0.0666
CLTM4020170T1	0.0333	0.03	-0.3069 : 0.3069	0.0403 : 0.0403
CLTM4180848T1	-0.5668	0.06	NA	NA
CLTM4180852T1	-0.5298	0.06	NA	NA
CLTM4020252T1	-0.6998	0.06	NA	NA
CLTM4020237T1	-0.6409	0.06	NA	NA
CLTM4020231T1	-0.2709	0.05	1.4509 : -1.4509	0.0608 : 0.0608
CLTM4030613T2	-0.3937	0.04	0.111 : -0.111	0.0612 : 0.0612
CLTM4030650T1	-0.6668	0.03	0.2989 : -0.2989	0.0397 : 0.0397
CLTM4180850T2	0.4004	0.07	NA	NA
CLTM4180854T2	0.2802	0.06	NA	NA
CLTM4030494T2	-0.2433	0.04	0.435 : -0.435	0.0576 : 0.0576
CLTM4020219T1	-0.3875	0.06	NA	NA
CLTM4030476T2	-0.1355	0.04	-0.9089 : 0.9089	0.0792 : 0.0792
CLTM4020253T2	0.6537	0.05	NA	NA
CLTM4020247T2	0.2309	0.05	NA	NA
CLTM4030668T1	0.5824	0.05	NA	NA
CLTM4020244T2	1.3955	0.05	NA	NA
CLTM4020250T2	0.0425	0.04	1.5291 : -1.5291	0.0472 : 0.0472
CLTM4180853T2	1.2014	0.05	NA	NA
CLTM4030616T2-R	0.5131	0.05	NA	NA
CLTM4030479T2	0.4576	0.03	0.2659 : -0.2659	0.047 : 0.047
CLTM4020230T3	0.5525	0.03	1.1349 : -1.1349	0.0404 : 0.0404
CLTM4020238T2	0.7842	0.05	NA	NA
CLTM4020221T3	0.4971	0.05	NA	NA
CLTM4020212T3	0.5779	0.04	1.2105 : -1.2105	0.0473 : 0.0473
CLTM4180849T2	-0.0956	0.05	NA	NA
CLTM4030491T2	1.0244	0.09	NA	NA
CLTM4020239T3	1.2266	0.09	NA	NA
CLTM4030669T2	1.0934	0.09	NA	NA
CLTM4181004T3	1.4996	0.08	0.6739 : -0.6739	0.0932 : 0.0932

Item ID	b-value	b-value SE	d-values	d-values SE
CLTM4020190T2	0.6780	0.09	NA	NA
CLTM4020233T3	0.8442	0.06	-0.1581 : 0.1581	0.0923 : 0.0923
CLTM4030617T3-R	0.7795	0.09	NA	NA
CLTM4030492T3-R	0.8607	0.09	NA	NA
CLTM4020224T3	1.7623	0.09	1.1049 : -1.1049	0.1007 : 0.1007
CLTM4030672T2	0.3240	0.09	1.968 : -1.968	0.0993 : 0.0993
CLTM4020194T3	1.0519	0.09	NA	NA
CLTM4020229T2	0.6025	0.07	0.933 : -0.933	0.0842 : 0.0842
CLTM4020245T3	0.8742	0.09	NA	NA
CLTM4180855T3	3.3489	0.17	NA	NA
CLTM4181000T1	0.2107	0.07	NA	NA
CLTM4181010T2	0.6963	0.05	0.2975 : -0.2975	0.0733 : 0.0733
CLTM4180857T2	-0.3882	0.07	NA	NA
CLTM4180851T3	1.8148	0.10	NA	NA
CLTM4181002T1	-1.1815	0.09	1.256 : -1.256	0.0974 : 0.0974
CLTM4180858T2	-0.3349	0.08	NA	NA
CLTM4181027T2	-0.1316	0.05	-0.4917 : 0.4917	0.092 : 0.092
CLTM4181035T3	0.3204	0.08	NA	NA
CLTM4181032T2	0.6780	0.06	0.9689 : -0.9689	0.0803 : 0.0803
CLTM4181005T1	-0.3523	0.06	0.5811 : -0.5811	0.0765 : 0.0765
CLTM4030649T3-R	0.4241	0.08	NA	NA
CLTM4030652T3-R	0.4356	0.06	0.5913 : -0.5913	0.075 : 0.075
CLTM4181031T1	0.2297	0.06	1.0033 : -1.0033	0.0727 : 0.0727
CLTM4030648T2-R	1.3491	0.09	NA	NA
CLTM4181006T2	0.9989	0.07	1.1114 : -1.1114	0.0861 : 0.0861
CLTM4030670T3-R	1.4880	0.09	NA	NA
CLTM4181030T1	0.0976	0.04	-1.5032 : 1.5032	0.1274 : 0.1274
CLTM4181009T2	0.5628	0.06	0.7106 : -0.7106	0.0769 : 0.0769
CLTM4030673T3-R	0.1274	0.06	1.044 : -1.044	0.0732 : 0.0732

Table 8.C.10 IRT Item Difficulty for Mathematics, Grade Five

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTM5030609T1	-1.4594	0.04	NA	NA
CLTM5020180T1	-1.2752	0.04	NA	NA
CLTM5020338T1	-1.0109	0.03	0.8521 : -0.8521	0.0398 : 0.0398
CLTM5030557T1	-0.6594	0.04	NA	NA
CLTM5030458T1	-0.5385	0.03	0.8426 : -0.8426	0.0347 : 0.0347
CLTM5020184T2	0.1833	0.02	-0.2761 : 0.2761	0.0374 : 0.0374
CLTM5020268T2	0.4364	0.03	0.7028 : -0.7028	0.0328 : 0.0328
CLTM5030456T2	0.7870	0.04	NA	NA
CLTM5020258T1	-0.0297	0.04	NA	NA
CLTM5020352T2	-0.2908	0.02	-1.6644 : 1.6644	0.0619 : 0.0619
CLTM5030463T1	-0.3079	0.05	0.3077 : -0.3077	0.0708 : 0.0708
CLTM5180906T2	0.4824	0.08	NA	NA
CLTM5030676T1	0.0171	0.07	1.4963 : -1.4963	0.0799 : 0.0799
CLTM5020165T1	-0.3983	0.08	NA	NA
CLTM5020404T1	-0.2221	0.04	NA	NA
CLTM5020357T1	-0.3072	0.06	0.7229 : -0.7229	0.0728 : 0.0728
CLTM5020354T1	-0.3936	0.08	NA	NA
CLTM5180907T2	0.0714	0.08	NA	NA
CLTM5020183T1	-0.5552	0.05	0.5197 : -0.5197	0.0722 : 0.0722
CLTM5020341T2	0.1358	0.05	-1.2918 : 1.2918	0.1217 : 0.1217
CLTM5020262T2	0.5978	0.09	NA	NA
CLTM5020345T1	-0.3222	0.07	NA	NA
CLTM5181015T2	0.3176	0.06	0.2652 : -0.2652	0.0821 : 0.0821
CLTM5030707T1-R	-0.0364	0.05	-1.5936 : 1.5936	0.1311 : 0.1311
CLTM5030610T2	-0.0649	0.08	NA	NA
CLTM5030561T2-R	0.5872	0.05	NA	NA
CLTM5030465T3	-0.5029	0.05	1.6285 : -1.6285	0.0533 : 0.0533
CLTM5030464T2	-0.0836	0.04	1.3902 : -1.3902	0.0483 : 0.0483
CLTM5020215T3	1.7924	0.07	NA	NA
CLTM5020358T2	0.3128	0.03	-1.0037 : 1.0037	0.0658 : 0.0658
CLTM5030576T2	0.1547	0.04	0.9837 : -0.9837	0.0458 : 0.0458
CLTM5180968T2	1.3572	0.06	NA	NA
CLTM5020265T2	0.3524	0.05	NA	NA
CLTM5020355T2	0.9625	0.05	NA	NA
CLTM5020361T2	0.4941	0.05	NA	NA
CLTM5030575T1	0.0666	0.03	0.5199 : -0.5199	0.0459 : 0.0459
CLTM5180912T2	0.1222	0.05	NA	NA
CLTM5020359T3	-0.1878	0.03	0.5304 : -0.5304	0.0466 : 0.0466
CLTM5030607T2	-0.0171	0.04	0.8715 : -0.8715	0.0454 : 0.0454
CLTM5030708T2	0.7295	0.04	0.5046 : -0.5046	0.0587 : 0.0587
CLTM5181014T3	0.8444	0.06	NA	NA
CLTM5020346T2	0.8444	0.07	NA	NA

Item ID	b-value	b-value SE	d-values	d-values SE
CLTM5020347T3	1.2528	0.07	NA	NA
CLTM5020343T2	1.6823	0.07	NA	NA
CLTM5020181T2	1.1193	0.07	NA	NA
CLTM5020356T3	0.8444	0.06	NA	NA
CLTM5030577T3	0.5125	0.04	-0.1233 : 0.1233	0.0639 : 0.0639
CLTM5020344T3	1.0721	0.06	NA	NA
CLTM5030678T3	0.6117	0.04	-0.3255 : 0.3255	0.0668 : 0.0668
CLTM5030709T3	0.3906	0.05	0.6927 : -0.6927	0.0586 : 0.0586
CLTM5020259T2	0.8533	0.06	NA	NA
CLTM5180915T3	1.7712	0.06	0.7171 : -0.7171	0.0731 : 0.0731
CLTM5020266T3	1.9307	0.08	NA	NA
CLTM5030462T2	1.0274	0.05	0.722 : -0.722	0.0594 : 0.0594
CLTM5180909T2	1.1307	0.06	0.6967 : -0.6967	0.0801 : 0.0801
CLTM5030558T2-R	1.3346	0.08	NA	NA
CLTM5180971T1	-0.1125	0.05	0.5674 : -0.5674	0.0671 : 0.0671
CLTM5180905T1	0.0368	0.07	NA	NA
CLTM5020349T2-R	1.0000	0.08	NA	NA
CLTM5181016T3	0.9852	0.07	0.877 : -0.877	0.0832 : 0.0832
CLTM5180970T1	0.1908	0.07	NA	NA
CLTM5180821T2	0.8611	0.06	0.6368 : -0.6368	0.0808 : 0.0808
CLTM5180818T1	-0.9884	0.07	0.5005 : -0.5005	0.0885 : 0.0885
CLTM5030559T3-R	2.5154	0.13	NA	NA
CLTM5180908T2	0.7900	0.06	0.484 : -0.484	0.081 : 0.081
CLTM5030455T1-R	-0.8488	0.09	NA	NA
CLTM5180911T1	-0.6005	0.08	NA	NA
CLTM5180824T3	0.3188	0.08	NA	NA
CLTM5180819T2	0.7038	0.06	0.539 : -0.539	0.081 : 0.081
CLTM5180910T1	-0.1779	0.08	NA	NA
CLTM5180904T1	0.0811	0.08	NA	NA
CLTM5180967T2	1.0659	0.09	NA	NA
CLTM5180972T3	0.6814	0.05	-0.2106 : 0.2106	0.0875 : 0.0875
CLTM5180822T1	-0.2961	0.07	1.2713 : -1.2713	0.0771 : 0.0771

Table 8.C.11 IRT Item Difficulty for Mathematics, Grade Six

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTM6020284T1	-0.6716	0.04	NA	NA
CLTM6020198T1	-0.5597	0.04	NA	NA
CLTM6020293T1	-0.5033	0.04	NA	NA
CLTM6030685T1	-0.7010	0.04	NA	NA
CLTM6020427T1	-0.5059	0.04	NA	NA
CLTM6020287T1	-0.2983	0.02	-1.2464 : 1.2464	0.0515 : 0.0515
CLTM6020314T1	0.2314	0.02	-0.401 : 0.401	0.0406 : 0.0406
CLTM6030683T2	-0.0033	0.04	NA	NA
CLTM6020285T2	-0.1223	0.04	NA	NA
CLTM6020364T2	0.3370	0.02	-0.2488 : 0.2488	0.0399 : 0.0399
CLTM6180894T2	0.4639	0.04	NA	NA
CLTM6030618T1	-0.2976	0.03	-1.5438 : 1.5438	0.0907 : 0.0907
CLTM6030621T1	-0.3412	0.06	NA	NA
CLTM6020320T1	0.0506	0.06	NA	NA
CLTM6030598T1	0.2456	0.06	NA	NA
CLTM6030472T1	-0.1622	0.06	NA	NA
CLTM6020051T2	0.0892	0.02	-1.3253 : 1.3253	0.0522 : 0.0522
CLTM6020433T2	0.0526	0.03	-0.7319 : 0.7319	0.0698 : 0.0698
CLTM6030682T1	-0.4555	0.06	NA	NA
CLTM6030599T2	0.1408	0.03	NA	NA
CLTM6020291T2	-0.1192	0.03	-1.4373 : 1.4373	0.0875 : 0.0875
CLTM6020097T1	0.1905	0.04	NA	NA
CLTM6020425T2	0.2483	0.06	NA	NA
CLTM6030469T1	-0.2833	0.03	0.0353 : -0.0353	0.0544 : 0.0544
CLTM6020037T1	-0.3178	0.05	NA	NA
CLTM6030637T3	0.3340	0.05	NA	NA
CLTM6030686T2-R	-0.0190	0.05	NA	NA
CLTM6030602T2	0.7412	0.04	0.469 : -0.469	0.0544 : 0.0544
CLTM6020094T1	0.5479	0.04	1.1343 : -1.1343	0.0531 : 0.0531
CLTM6180988T2	-0.0959	0.06	NA	NA
CLTM6020200T3	0.0851	0.05	NA	NA
CLTM6180989T2	0.0089	0.05	NA	NA
CLTM6030473T2	1.0208	0.06	NA	NA
CLTM6030619T2	0.8047	0.04	0.4071 : -0.4071	0.0555 : 0.0555
CLTM6020367T2	0.9326	0.05	0.8465 : -0.8465	0.0575 : 0.0575
CLTM6030635T1	0.0889	0.05	NA	NA
CLTM6020039T3	0.9922	0.05	0.6373 : -0.6373	0.0681 : 0.0681
CLTM6020199T2	0.0317	0.08	NA	NA
CLTM6030622T2	0.2054	0.07	NA	NA
CLTM6020099T3	2.1394	0.08	NA	NA
CLTM6020368T3	0.7862	0.05	0.2843 : -0.2843	0.0687 : 0.0687
CLTM6020434T3	0.5477	0.04	-0.8898 : 0.8898	0.0918 : 0.0918

Item ID	<i>b</i>-value	<i>b</i>-value SE	<i>d</i>-values	<i>d</i>-values SE
CLTM6020295T3	1.1014	0.08	NA	NA
CLTM6030687T3	0.8035	0.07	NA	NA
CLTM6030603T3	0.7507	0.05	0.6571 : -0.6571	0.0672 : 0.0672
CLTM6020322T3	1.6630	0.08	NA	NA
CLTM6020041T2	0.5282	0.08	NA	NA
CLTM6020289T3	0.7564	0.04	-0.3607 : 0.3607	0.0787 : 0.0787
CLTM6180981T1	-0.3846	0.05	0.1647 : -0.1647	0.0715 : 0.0715
CLTM6180893T2	-0.0160	0.07	NA	NA
CLTM6180898T1	-0.8342	0.08	NA	NA
CLTM6180901T3	-0.0072	0.05	0.5913 : -0.5913	0.0667 : 0.0667
CLTM6180832T2	-0.0245	0.08	NA	NA
CLTM6180835T2	0.0961	0.08	NA	NA
CLTM6180899T2	1.1051	0.08	0.8838 : -0.8838	0.0906 : 0.0906
CLTM6180836T2	0.3225	0.08	NA	NA
CLTM6180986T1	-0.3822	0.08	NA	NA
CLTM6180979T2	0.8553	0.06	0.4396 : -0.4396	0.0779 : 0.0779
CLTM6180897T2	0.4553	0.07	NA	NA
CLTM6180903T2	0.5914	0.08	NA	NA
CLTM6030636T2-R	0.2277	0.08	NA	NA
CLTM6180896T1	-0.4782	0.08	NA	NA
CLTM6180985T2	0.7806	0.08	NA	NA
CLTM6180987T1	-0.0165	0.06	1.0309 : -1.0309	0.074 : 0.074
CLTM6180983T1	0.0760	0.05	0.3831 : -0.3831	0.0752 : 0.0752
CLTM6180978T3	0.4479	0.08	NA	NA
CLTM6180984T1	-0.5665	0.08	NA	NA
CLTM6180980T2	-0.2138	0.06	0.3385 : -0.3385	0.0773 : 0.0773

Table 8.C.12 IRT Item Difficulty for Mathematics, Grade Seven

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTM7020050T1	-1.4418	0.04	NA	NA
CLTM7030688T1	-0.8009	0.04	NA	NA
CLTM7020085T1	-0.6483	0.04	NA	NA
CLTM7020280T1	-1.0960	0.04	NA	NA
CLTM7020047T1	-0.5086	0.02	-1.2134 : 1.2134	0.0522 : 0.0522
CLTM7020091T1	-0.5635	0.02	-2.3832 : 2.3832	0.0868 : 0.0868
CLTM7020299T1	-0.6127	0.04	NA	NA
CLTM7020089T2	0.0726	0.03	1.67 : -1.67	0.0342 : 0.0342
CLTM7020048T2	-0.1126	0.02	-0.1971 : 0.1971	0.0355 : 0.0355
CLTM7020092T2	-0.4549	0.02	-2.6586 : 2.6586	0.0974 : 0.0974
CLTM7020034T1	-0.7756	0.09	NA	NA
CLTM7030522T2	0.2734	0.04	1.4617 : -1.4617	0.0487 : 0.0487
CLTM7030691T1	-0.6009	0.09	NA	NA
CLTM7020323T1	-0.0081	0.09	NA	NA
CLTM7020329T1	-0.2081	0.05	-1.5747 : 1.5747	0.1523 : 0.1523
CLTM7020296T1	-0.5298	0.09	NA	NA
CLTM7020369T1	-0.7237	0.09	NA	NA
CLTM7020419T2	0.6208	0.03	0.2262 : -0.2262	0.0351 : 0.0351
CLTM7020327T2	-0.1970	0.06	-0.2957 : 0.2957	0.0999 : 0.0999
CLTM7030515T1	-0.4040	0.06	0.2451 : -0.2451	0.0876 : 0.0876
CLTM7020086T2	-0.1055	0.09	NA	NA
CLTM7030512T1	-0.1013	0.06	0.2625 : -0.2625	0.0921 : 0.0921
CLTM7030585T2	0.6157	0.04	1.6139 : -1.6139	0.0447 : 0.0447
CLTM7030518T1	-0.4990	0.05	-1.3437 : 1.3437	0.1344 : 0.1344
CLTM7020330T2	0.0909	0.06	-0.6922 : 0.6922	0.1148 : 0.1148
CLTM7030653T1	-0.1772	0.06	NA	NA
CLTM7030509T1	-0.3530	0.04	0.1657 : -0.1657	0.0526 : 0.0526
CLTM7020297T2	0.3069	0.06	NA	NA
CLTM7020418T1	0.0057	0.03	-0.3329 : 0.3329	0.0588 : 0.0588
CLTM7030516T2	0.4941	0.04	0.607 : -0.607	0.0553 : 0.0553
CLTM7030519T2	0.8349	0.03	0.3965 : -0.3965	0.039 : 0.039
CLTM7020300T2	0.6872	0.06	NA	NA
CLTM7020328T3	0.0660	0.05	1.4569 : -1.4569	0.0544 : 0.0544
CLTM7020282T2	0.4208	0.04	0.2796 : -0.2796	0.0553 : 0.0553
CLTM7020298T3	0.6031	0.04	NA	NA
CLTM7030510T2	0.1749	0.04	0.5125 : -0.5125	0.052 : 0.052
CLTM7020451T3	1.1140	0.06	NA	NA
CLTM7020324T2	0.5738	0.06	NA	NA
CLTM7020093T3	0.8798	0.04	0.3473 : -0.3473	0.0484 : 0.0484
CLTM7030705T2	1.0622	0.05	NA	NA
CLTM7020373T2	0.6068	0.04	0.9259 : -0.9259	0.0467 : 0.0467
CLTM7020423T3	1.1556	0.05	NA	NA

Item ID	b-value	b-value SE	d-values	d-values SE
CLTM7030589T3	1.0448	0.05	NA	NA
CLTM7020371T3	1.1413	0.05	NA	NA
CLTM7020035T2	0.2080	0.05	NA	NA
CLTM7030514T3	0.6079	0.04	0.927 : -0.927	0.0463 : 0.0463
CLTM7030586T3	0.9249	0.04	0.612 : -0.612	0.0475 : 0.0475
CLTM7020331T3	0.6921	0.04	1.1464 : -1.1464	0.0474 : 0.0474
CLTM7020036T3	2.4216	0.08	NA	NA
CLTM7180846T3	-0.6477	0.07	1.2446 : -1.2446	0.0769 : 0.0769
CLTM7030587T1-R	-1.2272	0.09	NA	NA
CLTM7180937T1	0.0963	0.05	0.5058 : -0.5058	0.0692 : 0.0692
CLTM7180994T2	-0.3887	0.06	0.5217 : -0.5217	0.0723 : 0.0723
CLTM7030704T1-R	-0.6689	0.08	NA	NA
CLTM7180997T2	1.0480	0.06	0.2575 : -0.2575	0.0907 : 0.0907
CLTM7180996T2	0.1998	0.08	NA	NA
CLTM7180927T1	-0.1631	0.05	-0.1273 : 0.1273	0.0826 : 0.0826
CLTM7180932T2	-0.0404	0.05	-0.2296 : 0.2296	0.0775 : 0.0775
CLTM7030696T3-R	2.2495	0.11	NA	NA
CLTM7180951T1	-0.1246	0.05	0.6935 : -0.6935	0.0679 : 0.0679
CLTM7180993T1	-0.1935	0.05	-0.0199 : 0.0199	0.0755 : 0.0755
CLTM7180933T2	0.1883	0.05	-0.2055 : 0.2055	0.0802 : 0.0802
CLTM7180928T1	-0.4938	0.07	NA	NA
CLTM7180953T2	0.4972	0.07	1.7341 : -1.7341	0.0795 : 0.0795
CLTM7030511T3-R	0.1158	0.06	1.1561 : -1.1561	0.0716 : 0.0716
CLTM7180949T1	-0.2975	0.05	0.1103 : -0.1103	0.0793 : 0.0793
CLTM7180935T2	2.3358	0.13	NA	NA
CLTM7180952T2	-0.1418	0.07	1.5575 : -1.5575	0.0776 : 0.0776
CLTM7180995T3	0.2398	0.06	0.6491 : -0.6491	0.0736 : 0.0736

Table 8.C.13 IRT Item Difficulty for Mathematics, Grade Eight

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTM8020332T1	-1.5089	0.04	NA	NA
CLTM8030638T1	-1.1554	0.04	NA	NA
CLTM8020302T1	-0.8641	0.04	NA	NA
CLTM8020028T1	-0.8075	0.03	0.776 : -0.776	0.0367 : 0.0367
CLTM8030530T1	0.0101	0.02	-0.9836 : 0.9836	0.0464 : 0.0464
CLTM8030536T2	0.1090	0.02	0.1306 : -0.1306	0.0334 : 0.0334
CLTM8020305T1	0.1774	0.02	-0.9424 : 0.9424	0.0456 : 0.0456
CLTM8020416T2	0.6049	0.03	0.8463 : -0.8463	0.0335 : 0.0335
CLTM8020277T1	0.0154	0.02	-0.5978 : 0.5978	0.0425 : 0.0425
CLTM8030539T2	0.0353	0.03	0.6033 : -0.6033	0.0321 : 0.0321
CLTM8020079T1	-0.7751	0.09	NA	NA
CLTM8020278T1	-0.6044	0.09	NA	NA
CLTM8030535T1	-0.5980	0.05	-1.8532 : 1.8532	0.1709 : 0.1709
CLTM8030528T2	-0.1366	0.03	0.8701 : -0.8701	0.0398 : 0.0398
CLTM8030697T1	-0.3633	0.09	NA	NA
CLTM8030659T1	-0.6245	0.09	NA	NA
CLTM8180880T2	0.5718	0.10	NA	NA
CLTM8020378T1	-0.4215	0.05	-2.1377 : 2.1377	0.1902 : 0.1902
CLTM8180817T2	0.1622	0.04	NA	NA
CLTM8020412T1	-0.6267	0.09	NA	NA
CLTM8020388T1	-0.3786	0.09	NA	NA
CLTM8180975T2	-0.3401	0.04	NA	NA
CLTM8030538T1	-0.4858	0.05	-1.9318 : 1.9318	0.1716 : 0.1716
CLTM8020029T2	-0.3076	0.06	0.3513 : -0.3513	0.0857 : 0.0857
CLTM8180860T1	-0.1049	0.09	NA	NA
CLTM8030527T1	-0.1265	0.03	-0.5918 : 0.5918	0.0585 : 0.0585
CLTM8030624T1	-0.1894	0.05	NA	NA
CLTM8020390T3	1.7107	0.07	NA	NA
CLTM8020026T2	0.2486	0.05	NA	NA
CLTM8020379T2	1.2565	0.05	0.5941 : -0.5941	0.0633 : 0.0633
CLTM8030663T2	0.5942	0.05	NA	NA
CLTM8020083T2	0.2403	0.05	NA	NA
CLTM8030698T2	0.2564	0.04	NA	NA
CLTM8020030T3	0.3850	0.04	0.4573 : -0.4573	0.0478 : 0.0478
CLTM8020415T1	-0.1267	0.03	-0.6888 : 0.6888	0.061 : 0.061
CLTM8020084T3	0.2806	0.05	NA	NA
CLTM8020080T2	0.5293	0.04	0.7795 : -0.7795	0.0486 : 0.0486
CLTM8020307T3	0.4143	0.04	0.2036 : -0.2036	0.0555 : 0.0555
CLTM8020027T3	0.8825	0.06	NA	NA
CLTM8020046T2	1.7651	0.06	0.6959 : -0.6959	0.0711 : 0.0711
CLTM8020393T3	1.3376	0.05	0.6673 : -0.6673	0.0616 : 0.0616
CLTM8020279T3	0.3337	0.06	NA	NA

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTM8030540T3	0.8748	0.04	0.451 : -0.451	0.0551 : 0.0551
CLTM8020392T2	0.7953	0.04	0.5174 : -0.5174	0.0548 : 0.0548
CLTM8020453T3	0.7543	0.06	NA	NA
CLTM8020417T3	0.8153	0.05	1.0658 : -1.0658	0.055 : 0.055
CLTM8020069T2	1.3596	0.06	NA	NA
CLTM8020380T3	1.3858	0.05	0.5843 : -0.5843	0.0617 : 0.0617
CLTM8030537T3	0.6101	0.04	0.926 : -0.926	0.0531 : 0.0531
CLTM8180881T3	0.5046	0.08	NA	NA
CLTM8180805T2	-1.0695	0.08	NA	NA
CLTM8180862T1	-0.1102	0.05	0.4989 : -0.4989	0.0698 : 0.0698
CLTM8180877T2	0.3145	0.07	NA	NA
CLTM8030524T1-R	-0.6695	0.08	NA	NA
CLTM8180815T2	-0.8584	0.09	NA	NA
CLTM8180865T2	0.6733	0.06	0.5203 : -0.5203	0.0803 : 0.0803
CLTM8180804T3	-0.6158	0.08	1.4604 : -1.4604	0.087 : 0.087
CLTM8180802T1	-0.4189	0.05	0.6688 : -0.6688	0.0719 : 0.0719
CLTM8030660T2-R	0.3668	0.07	NA	NA
CLTM8180808T3	0.7301	0.06	0.4463 : -0.4463	0.0775 : 0.0775
CLTM8030625T2-R	0.7946	0.07	NA	NA
CLTM8180874T1	-0.3284	0.08	NA	NA
CLTM8030661T3-R	0.0463	0.07	NA	NA
CLTM8180867T2	0.8391	0.06	0.3508 : -0.3508	0.0827 : 0.0827
CLTM8180816T1	-0.7727	0.08	NA	NA
CLTM8180814T1	-1.3101	0.09	NA	NA
CLTM8180863T2	0.6207	0.06	0.5175 : -0.5175	0.0774 : 0.0774
CLTM8180866T1	-0.6247	0.06	0.2827 : -0.2827	0.0824 : 0.0824
CLTM8180869T3	1.0688	0.09	NA	NA

Table 8.C.14 IRT Item Difficulty for Mathematics, Grade Eleven

Item ID	<i>b</i> -value		<i>d</i> -values	<i>d</i> -values SE
	<i>b</i> -value	SE		
CLTMH020019T1	-1.1774	0.04	NA	NA
CLTMH020272T1	-1.0296	0.04	NA	NA
CLTMH020447T1	-0.5134	0.04	NA	NA
CLTMH030553T1	-0.9528	0.04	NA	NA
CLTMH020406T1	0.0006	0.03	-1.2916 : 1.2916	0.0575 : 0.0575
CLTMH030642T2	-0.0620	0.03	0.9081 : -0.9081	0.0347 : 0.0347
CLTMH020397T1	-0.0370	0.03	-0.9584 : 0.9584	0.0517 : 0.0517
CLTMH030628T2	-0.0883	0.04	NA	NA
CLTMH020076T1	-0.0341	0.04	NA	NA
CLTMH030555T2	0.0334	0.03	0.8616 : -0.8616	0.0346 : 0.0346
CLTMH020022T1	-0.6315	0.07	NA	NA
CLTMH020043T1	0.0798	0.07	NA	NA
CLTMH030645T2	-0.7954	0.03	-0.7519 : 0.7519	0.0559 : 0.0559
CLTMH030549T1	-0.2817	0.07	NA	NA
CLTMH020398T2	-0.8107	0.06	1.0788 : -1.0788	0.0635 : 0.0635
CLTMH030644T1	-0.2400	0.04	-3.4845 : 3.4845	0.2673 : 0.2673
CLTMH030630T1	0.0222	0.07	NA	NA
CLTMH020068T1	-0.6360	0.05	NA	NA
CLTMH030665T1	-0.3223	0.04	-3.3144 : 3.3144	0.2453 : 0.2453
CLTMH030551T2	-0.9957	0.06	0.9435 : -0.9435	0.0669 : 0.0669
CLTMH180926T1	-0.4530	0.07	NA	NA
CLTMH020020T2	-0.6200	0.07	NA	NA
CLTMH030666T2	-0.6664	0.03	-0.6705 : 0.6705	0.0598 : 0.0598
CLTMH020336T2	0.0734	0.07	NA	NA
CLTMH020381T1	-0.2956	0.04	-1.1328 : 1.1328	0.094 : 0.094
CLTMH030641T1	-0.0727	0.04	-1.4854 : 1.4854	0.1001 : 0.1001
CLTMH020045T3	0.0743	0.06	NA	NA
CLTMH020402T2	0.1521	0.05	0.9622 : -0.9622	0.0575 : 0.0575
CLTMH030542T2	0.3075	0.06	NA	NA
CLTMH020044T2	0.9452	0.07	NA	NA
CLTMH020400T2	0.7005	0.06	NA	NA
CLTMH020385T2	0.1327	0.04	-1.1392 : 1.1392	0.0879 : 0.0879
CLTMH020270T2	0.5866	0.06	NA	NA
CLTMH020077T2	0.9734	0.05	NA	NA
CLTMH030552T3	-0.1770	0.04	0.4856 : -0.4856	0.0579 : 0.0579
CLTMH020337T3	-0.2610	0.06	NA	NA
CLTMH030712T1	0.2400	0.06	NA	NA
CLTMH020023T2	0.1773	0.07	NA	NA
CLTMH020313T3	0.3654	0.07	NA	NA
CLTMH030646T3	-0.4016	0.06	-1.1392 : 1.1392	0.113 : 0.113
CLTMH020078T3	1.4771	0.07	NA	NA
CLTMH020382T2	0.9714	0.04	-0.9444 : 0.9444	0.0882 : 0.0882

Item ID	<i>b</i>-value	<i>b</i>-value SE	<i>d</i>-values	<i>d</i>-values SE
CLTMH030543T3	0.5830	0.07	NA	NA
CLTMH030667T3	-0.4551	0.07	-1.2691 : 1.2691	0.1204 : 0.1204
CLTMH020401T3	0.7419	0.07	NA	NA
CLTMH030714T3	1.5509	0.07	NA	NA
CLTMH020407T2	0.6864	0.04	-0.9041 : 0.9041	0.086 : 0.086
CLTMH030631T2	1.3016	0.07	NA	NA
CLTMH020446T3	1.8040	0.08	NA	NA
CLTMH030643T3	0.9441	0.05	0.6645 : -0.6645	0.0625 : 0.0625
CLTMH180831T3	1.7593	0.10	NA	NA
CLTMH180826T1	-0.9283	0.08	NA	NA
CLTMH180919T2	-0.1731	0.05	0.174 : -0.174	0.0775 : 0.0775
CLTMH180924T2	-0.0804	0.08	NA	NA
CLTMH180917T3	1.8294	0.11	-0.561 : 0.561	0.1562 : 0.1562
CLTMH180813T1	0.0069	0.08	NA	NA
CLTMH180828T2	-0.1705	0.09	NA	NA
CLTMH180812T2	1.1994	0.09	NA	NA
CLTMH180947T3	1.3456	0.09	0.6986 : -0.6986	0.1065 : 0.1065
CLTMH180830T2	-0.5298	0.09	NA	NA
CLTMH180811T1	-0.3084	0.05	-1.2204 : 1.2204	0.1236 : 0.1236
CLTMH030713T2-R	1.1092	0.09	NA	NA
CLTMH180809T3	-0.1151	0.06	-0.8032 : 0.8032	0.1062 : 0.1062
CLTMH180976T2	-0.7215	0.09	NA	NA
CLTMH180827T2	-0.2489	0.08	NA	NA
CLTMH180940T2	-0.9344	0.09	NA	NA
CLTMH030634T3-R	1.7872	0.12	NA	NA
CLTMH180921T1	-0.0260	0.05	-1.0629 : 1.0629	0.12 : 0.12
CLTMH030633T2-R	0.2787	0.09	NA	NA
CLTMH180943T2	0.6631	0.07	0.7075 : -0.7075	0.0868 : 0.0868

Table 8.C.15 IRT Item Difficulty Summary for Operational Items by the Content Complexity (Tier) for ELA

Test	Tier Set	Number of Items	Mean <i>b</i>-value	SD <i>b</i>-value	Minimum <i>b</i>-value	Maximum <i>b</i>-value	Median <i>b</i>-value
Grade 3	Tier 1-Op	19	-0.8225	0.6807	-2.1147	0.2199	-0.8655
Grade 3	Tier 2-Op	22	-0.3078	0.6631	-1.4258	1.2992	-0.2738
Grade 3	Tier 3-Op	10	0.2143	1.1841	-2.3055	1.2861	0.5180
Grade 3	All Operational Items	51	-0.3972	0.8665	-2.3055	1.2992	-0.3181
Grade 4	Tier 1-Op	17	-0.8868	0.7047	-1.8467	1.0577	-1.0839
Grade 4	Tier 2-Op	23	-0.0260	0.8123	-1.4097	1.7066	-0.1543
Grade 4	Tier 3-Op	11	0.5356	0.3249	-0.2647	0.8818	0.6248
Grade 4	All Operational Items	51	-0.1918	0.8739	-1.8467	1.7066	-0.2647
Grade 5	Tier 1-Op	18	-0.8774	0.8018	-2.2502	0.4855	-0.9053
Grade 5	Tier 2-Op	23	-0.5106	0.8608	-1.9952	1.0173	-0.7685
Grade 5	Tier 3-Op	12	0.5949	0.7366	-0.3228	1.7626	0.6293
Grade 5	All Operational Items	53	-0.3849	0.9752	-2.2502	1.7626	-0.3277
Grade 6	Tier 1-Op	18	-0.8647	0.4799	-1.7819	0.0392	-0.8880
Grade 6	Tier 2-Op	24	-0.3191	0.8001	-1.6579	1.4046	-0.4539
Grade 6	Tier 3-Op	12	0.3307	0.8437	-1.0384	1.6361	0.3801
Grade 6	All Operational Items	54	-0.3566	0.8335	-1.7819	1.6361	-0.5031
Grade 7	Tier 1-Op	18	-0.9852	0.8465	-2.1068	1.0863	-1.1667
Grade 7	Tier 2-Op	24	-0.1183	0.7092	-1.6017	1.2602	-0.1448
Grade 7	Tier 3-Op	12	0.7157	0.8848	-0.7241	2.7420	0.7056
Grade 7	All Operational Items	54	-0.2219	1.0062	-2.1068	2.7420	-0.2105
Grade 8	Tier 1-Op	14	-0.8866	0.6440	-2.2501	-0.0307	-0.6812
Grade 8	Tier 2-Op	22	-0.1537	0.6993	-1.2155	1.2406	-0.2725
Grade 8	Tier 3-Op	12	0.1325	0.8360	-1.7665	1.0765	0.3624
Grade 8	All Operational Items	48	-0.2959	0.8106	-2.2501	1.2406	-0.2998
Grade 11	Tier 1-Op	17	-0.6899	0.5557	-1.5476	0.4047	-0.7680
Grade 11	Tier 2-Op	25	-0.1500	0.6163	-0.9805	1.1892	-0.2398
Grade 11	Tier 3-Op	10	1.0202	0.7577	-0.3124	2.2196	1.1051
Grade 11	All Operational Items	52	-0.1015	0.8603	-1.5476	2.2196	-0.2184

Table 8.C.16 IRT Item Difficulty Summary for Operational Items by the Content Complexity (Tier) for Mathematics

Test	Tier Set	Number of Items	Mean <i>b</i>-value	SD <i>b</i>-value	Minimum <i>b</i>-value	Maximum <i>b</i>-value	Median <i>b</i>-value
Grade 3	Tier 1-Op	18	-0.4904	0.3922	-1.0350	0.1875	-0.3907
Grade 3	Tier 2-Op	22	0.3687	0.4500	-0.2444	1.2947	0.2485
Grade 3	Tier 3-Op	13	1.1037	0.8815	-0.0464	2.8350	0.7878
Grade 3	All Operational Items	53	0.2572	0.8302	-1.0350	2.8350	0.1322
Grade 4	Tier 1-Op	18	-0.5831	0.5452	-1.4787	0.5824	-0.6038
Grade 4	Tier 2-Op	22	0.3975	0.5042	-0.3937	1.3955	0.3622
Grade 4	Tier 3-Op	11	0.9570	0.4005	0.4971	1.7623	0.8607
Grade 4	All Operational Items	51	0.1721	0.7766	-1.4787	1.7623	0.2802
Grade 5	Tier 1-Op	17	-0.4027	0.5039	-1.4594	0.5872	-0.3222
Grade 5	Tier 2-Op	25	0.5027	0.4883	-0.2908	1.6823	0.4364
Grade 5	Tier 3-Op	12	0.8610	0.7630	-0.5029	1.9307	0.8444
Grade 5	All Operational Items	54	0.2973	0.7446	-1.4594	1.9307	0.2480
Grade 6	Tier 1-Op	18	-0.2079	0.3562	-0.7010	0.5479	-0.2979
Grade 6	Tier 2-Op	18	0.2347	0.3305	-0.1223	0.9326	0.1150
Grade 6	Tier 3-Op	12	0.9151	0.5521	0.0851	2.1394	0.7949
Grade 6	All Operational Items	48	0.2388	0.5915	-0.7010	2.1394	0.1150
Grade 7	Tier 1-Op	19	-0.5288	0.3628	-1.4418	0.0057	-0.5298
Grade 7	Tier 2-Op	19	0.3249	0.3874	-0.4549	1.0622	0.3069
Grade 7	Tier 3-Op	11	0.9683	0.5803	0.0660	2.4216	0.9249
Grade 7	All Operational Items	49	0.1383	0.7236	-1.4418	2.4216	0.0726
Grade 8	Tier 1-Op	20	-0.4779	0.4198	-1.5089	0.1774	-0.4536
Grade 8	Tier 2-Op	17	0.4555	0.5824	-0.3401	1.7651	0.2564
Grade 8	Tier 3-Op	12	0.8154	0.4590	0.2806	1.7107	0.7848
Grade 8	All Operational Items	49	0.1627	0.7342	-1.5089	1.7651	0.1622
Grade 11	Tier 1-Op	18	-0.3519	0.4057	-1.1774	0.2400	-0.2887
Grade 11	Tier 2-Op	20	0.1501	0.6739	-0.9957	1.3016	0.1424
Grade 11	Tier 3-Op	12	0.5205	0.7965	-0.4551	1.8040	0.4742
Grade 11	All Operational Items	50	0.0583	0.7023	-1.1774	1.8040	-0.0168

Table 8.C.17 IRT Item Difficulty Summary for Field Test Items by the Content Complexity (Tier) for ELA

Test	Tier Set	Number of Items	Mean <i>b</i>-value	SD <i>b</i>-value	Minimum <i>b</i>-value	Maximum <i>b</i>-value	Median <i>b</i>-value
Grade 3	Tier 1-FT	9	-0.5666	0.6928	-1.6008	0.3047	-0.5753
Grade 3	Tier 2-FT	8	0.0914	0.9386	-1.4139	1.3617	0.1953
Grade 3	Tier 3-FT	3	-0.3771	1.0316	-1.4405	0.6194	-0.3103
Grade 3	All Field-test Items	20	-0.2750	0.8586	-1.6008	1.3617	-0.3105
Grade 4	Tier 1-FT	8	-1.0706	0.7661	-2.0914	0.4418	-1.1566
Grade 4	Tier 2-FT	10	-0.5575	0.6484	-1.3240	0.6081	-0.7462
Grade 4	Tier 3-FT	2	-0.4417	1.2940	-1.3567	0.4733	-0.4417
Grade 4	All Field-test Items	20	-0.7512	0.7591	-2.0914	0.6081	-0.9277
Grade 5	Tier 1-FT	12	-1.1323	0.4036	-1.7599	-0.5330	-1.1311
Grade 5	Tier 2-FT	5	-0.4558	0.8297	-1.7846	0.4517	-0.2204
Grade 5	Tier 3-FT	3	-0.0709	0.6325	-0.6012	0.6292	-0.2407
Grade 5	All Field-test Items	20	-0.8040	0.6828	-1.7846	0.6292	-0.8330
Grade 6	Tier 1-FT	13	-0.6190	0.5848	-1.4798	0.2959	-0.6868
Grade 6	Tier 2-FT	6	-0.7881	0.7177	-1.6746	0.1444	-0.8830
Grade 6	Tier 3-FT	1	0.8050	NA	0.8050	0.8050	0.8050
Grade 6	All Field-test Items	20	-0.5985	0.6833	-1.6746	0.8050	-0.6790
Grade 7	Tier 1-FT	8	-1.0373	0.5215	-1.9263	-0.3065	-0.9193
Grade 7	Tier 2-FT	9	-0.4170	0.5762	-1.1822	0.4710	-0.3444
Grade 7	Tier 3-FT	3	0.4254	0.0921	0.3545	0.5296	0.3923
Grade 7	All Field-test Items	20	-0.5387	0.7066	-1.9263	0.5296	-0.6680
Grade 8	Tier 1-FT	6	-1.1069	0.1881	-1.3863	-0.8413	-1.1010
Grade 8	Tier 2-FT	3	-0.5154	0.8026	-1.1994	0.3681	-0.7148
Grade 8	Tier 3-FT	3	0.0379	0.2063	-0.1672	0.2453	0.0357
Grade 8	All Field-test Items	12	-0.6728	0.6231	-1.3863	0.3681	-0.9181
Grade 11	Tier 1-FT	6	-0.5235	0.5418	-1.1490	0.3429	-0.6486
Grade 11	Tier 2-FT	5	-0.3413	0.7222	-1.0104	0.7038	-0.6261
Grade 11	Tier 3-FT	1	0.0468	NA	0.0468	0.0468	0.0468
Grade 11	All Field-test Items	12	-0.4000	0.5926	-1.1490	0.7038	-0.5644

Table 8.C.18 IRT Item Difficulty Summary for Field Test Items by the Content Complexity (Tier) for Mathematics

Test	Tier Set	Number of Items	Mean <i>b</i>-value	SD <i>b</i>-value	Minimum <i>b</i>-value	Maximum <i>b</i>-value	Median <i>b</i>-value
Grade 3	Tier 1-FT	9	-0.3197	0.3800	-0.8950	0.4549	-0.2796
Grade 3	Tier 2-FT	7	0.3774	0.4954	-0.4038	1.0145	0.2299
Grade 3	Tier 3-FT	4	1.0060	1.0186	0.2240	2.5023	0.6488
Grade 3	All Field-test Items	20	0.1894	0.7605	-0.8950	2.5023	0.1813
Grade 4	Tier 1-FT	5	-0.1991	0.5976	-1.1815	0.2297	0.0976
Grade 4	Tier 2-FT	8	0.4288	0.6424	-0.3882	1.3491	0.6204
Grade 4	Tier 3-FT	7	1.1370	1.1663	0.1274	3.3489	0.4356
Grade 4	All Field-test Items	20	0.5197	0.9678	-1.1815	3.3489	0.3723
Grade 5	Tier 1-FT	9	-0.3017	0.4206	-0.9884	0.1908	-0.1779
Grade 5	Tier 2-FT	7	0.9837	0.2170	0.7038	1.3346	1.0000
Grade 5	Tier 3-FT	4	1.1252	0.9660	0.3188	2.5154	0.8333
Grade 5	All Field-test Items	20	0.4336	0.8396	-0.9884	2.5154	0.5001
Grade 6	Tier 1-FT	7	-0.3694	0.3136	-0.8342	0.0760	-0.3846
Grade 6	Tier 2-FT	11	0.3800	0.4175	-0.2138	1.1051	0.3225
Grade 6	Tier 3-FT	2	0.2204	0.3218	-0.0072	0.4479	0.2204
Grade 6	All Field-test Items	20	0.1017	0.5063	-0.8342	1.1051	0.0344
Grade 7	Tier 1-FT	8	-0.3841	0.4131	-1.2272	0.0963	-0.2455
Grade 7	Tier 2-FT	8	0.4622	0.8734	-0.3887	2.3358	0.1940
Grade 7	Tier 3-FT	4	0.4893	1.2373	-0.6477	2.2495	0.1778
Grade 7	All Field-test Items	20	0.1291	0.8778	-1.2272	2.3358	-0.0825
Grade 8	Tier 1-FT	7	-0.6049	0.3842	-1.3101	-0.1102	-0.6247
Grade 8	Tier 2-FT	8	0.2101	0.7498	-1.0695	0.8391	0.4938
Grade 8	Tier 3-FT	5	0.3468	0.6538	-0.6158	1.0688	0.5046
Grade 8	All Field-test Items	20	-0.0410	0.7260	-1.3101	1.0688	-0.0319
Grade 11	Tier 1-FT	4	-0.3140	0.4333	-0.9283	0.0069	-0.1672
Grade 11	Tier 2-FT	11	0.0356	0.7053	-0.9344	1.1994	-0.1705
Grade 11	Tier 3-FT	5	1.3213	0.8263	-0.1151	1.8294	1.7593
Grade 11	All Field-test Items	20	0.2871	0.9107	-0.9344	1.8294	-0.0532

Note: In [Table 8.C.19](#) through [Table 8.C.32](#), an expression that opens with a parenthesis and closes with a bracket indicates that a value is greater than the first number and is less than or equal to the second number. For example, “(0.5, 2]” indicates a value greater than 0.5 but less than or equal to 2.

Table 8.C.19 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Three

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field- test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	1	NA
(-2.2, -2.0]	NA	NA	1	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	2	NA	NA	NA	NA	1
(-1.6, -1.4]	1	NA	NA	1	NA	2
(-1.4, -1.2]	2	1	NA	NA	1	1
(-1.2, -1.0]	2	NA	NA	1	NA	1
(-1.0, -0.8]	NA	NA	2	1	NA	NA
(-0.8, -0.6]	NA	NA	3	3	NA	1
(-0.6, -0.4]	NA	NA	1	2	NA	3
(-0.4, -0.2]	NA	NA	NA	4	NA	2
(-0.2, 0.0]	NA	NA	1	2	1	1
(0.0, 0.2]	NA	2	3	2	NA	1
(0.2, 0.4]	NA	NA	1	1	2	3
(0.4, 0.6]	NA	NA	NA	NA	NA	NA
(0.6, 0.8]	NA	NA	NA	NA	NA	2
(0.8, 1.0]	NA	NA	NA	1	1	NA
(1.0, 1.2]	NA	NA	NA	NA	3	1
(1.2, 1.4]	NA	NA	NA	1	1	1
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.20 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Four

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	1
(-2.0, -1.8]	NA	NA	1	NA	NA	NA
(-1.8, -1.6]	1	NA	1	NA	NA	1
(-1.6, -1.4]	NA	1	NA	NA	NA	NA
(-1.4, -1.2]	NA	NA	3	NA	NA	4
(-1.2, -1.0]	3	NA	NA	2	NA	2
(-1.0, -0.8]	NA	NA	1	1	NA	3
(-0.8, -0.6]	2	NA	1	1	NA	4
(-0.6, -0.4]	NA	1	1	3	NA	NA
(-0.4, -0.2]	NA	1	1	NA	1	1
(-0.2, 0.0]	NA	NA	1	3	NA	NA
(0.0, 0.2]	NA	NA	NA	2	NA	NA
(0.2, 0.4]	NA	1	NA	NA	2	NA
(0.4, 0.6]	NA	NA	NA	1	2	3
(0.6, 0.8]	NA	NA	NA	3	4	1
(0.8, 1.0]	NA	NA	NA	1	2	NA
(1.0, 1.2]	NA	NA	1	NA	NA	NA
(1.2, 1.4]	NA	NA	NA	NA	NA	NA
(1.4, 1.6]	NA	NA	NA	1	NA	NA
(1.6, 1.8]	NA	NA	NA	1	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.21 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Five

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	1	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	1	1	1	1	NA	NA
(-1.8, -1.6]	1	NA	NA	NA	NA	2
(-1.6, -1.4]	1	NA	NA	1	NA	3
(-1.4, -1.2]	1	NA	NA	1	NA	NA
(-1.2, -1.0]	NA	1	3	3	NA	4
(-1.0, -0.8]	NA	NA	NA	3	NA	1
(-0.8, -0.6]	1	NA	1	1	NA	2
(-0.6, -0.4]	NA	NA	2	NA	NA	3
(-0.4, -0.2]	NA	1	1	2	3	2
(-0.2, 0.0]	NA	NA	NA	NA	NA	1
(0.0, 0.2]	NA	NA	2	2	2	NA
(0.2, 0.4]	NA	NA	1	2	NA	NA
(0.4, 0.6]	NA	NA	1	1	1	1
(0.6, 0.8]	NA	NA	NA	1	NA	1
(0.8, 1.0]	NA	1	NA	NA	3	NA
(1.0, 1.2]	NA	NA	NA	1	NA	NA
(1.2, 1.4]	NA	NA	NA	NA	NA	NA
(1.4, 1.6]	NA	NA	NA	NA	2	NA
(1.6, 1.8]	NA	NA	NA	NA	1	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.22 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Six

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	1	1	NA	NA	1
(-1.6, -1.4]	2	NA	NA	1	NA	1
(-1.4, -1.2]	1	1	NA	1	NA	2
(-1.2, -1.0]	NA	NA	2	NA	1	3
(-1.0, -0.8]	2	NA	3	1	NA	1
(-0.8, -0.6]	1	1	1	4	NA	3
(-0.6, -0.4]	NA	1	2	2	2	1
(-0.4, -0.2]	NA	NA	2	3	1	1
(-0.2, 0.0]	NA	NA	NA	1	1	1
(0.0, 0.2]	NA	NA	1	NA	1	4
(0.2, 0.4]	NA	NA	NA	2	NA	1
(0.4, 0.6]	NA	NA	NA	2	NA	NA
(0.6, 0.8]	NA	NA	NA	NA	1	NA
(0.8, 1.0]	NA	NA	NA	1	2	1
(1.0, 1.2]	NA	NA	NA	1	1	NA
(1.2, 1.4]	NA	NA	NA	NA	1	NA
(1.4, 1.6]	NA	NA	NA	1	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	1	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.23 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Seven

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	2	NA	NA	NA
(-2.0, -1.8]	1	NA	NA	NA	NA	1
(-1.8, -1.6]	1	NA	NA	1	NA	NA
(-1.6, -1.4]	1	NA	2	NA	NA	1
(-1.4, -1.2]	1	1	1	NA	NA	1
(-1.2, -1.0]	1	NA	1	1	NA	1
(-1.0, -0.8]	NA	1	NA	1	NA	4
(-0.8, -0.6]	1	NA	NA	NA	1	3
(-0.6, -0.4]	NA	1	1	NA	NA	NA
(-0.4, -0.2]	NA	NA	2	5	1	4
(-0.2, 0.0]	NA	1	1	2	NA	NA
(0.0, 0.2]	NA	NA	1	1	1	NA
(0.2, 0.4]	NA	NA	NA	5	1	2
(0.4, 0.6]	NA	NA	NA	NA	2	3
(0.6, 0.8]	NA	NA	NA	1	NA	NA
(0.8, 1.0]	NA	NA	NA	2	3	NA
(1.0, 1.2]	NA	NA	1	NA	1	NA
(1.2, 1.4]	NA	NA	NA	1	NA	NA
(1.4, 1.6]	NA	NA	NA	NA	1	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	1	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.24 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Eight

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	1	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	NA	1	NA	1	NA
(-1.6, -1.4]	NA	NA	1	NA	NA	NA
(-1.4, -1.2]	2	1	NA	NA	NA	2
(-1.2, -1.0]	NA	NA	NA	3	NA	3
(-1.0, -0.8]	NA	NA	NA	NA	1	2
(-0.8, -0.6]	2	NA	2	1	NA	1
(-0.6, -0.4]	1	NA	1	2	1	NA
(-0.4, -0.2]	NA	2	2	3	NA	NA
(-0.2, 0.0]	NA	NA	1	3	1	1
(0.0, 0.2]	NA	NA	NA	1	1	1
(0.2, 0.4]	NA	NA	NA	2	2	2
(0.4, 0.6]	NA	NA	NA	NA	1	NA
(0.6, 0.8]	NA	1	NA	1	1	NA
(0.8, 1.0]	NA	NA	NA	NA	2	NA
(1.0, 1.2]	NA	NA	NA	NA	1	NA
(1.2, 1.4]	NA	NA	NA	2	NA	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.25 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Eleven

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	NA	NA	NA	NA	NA
(-1.6, -1.4]	NA	NA	1	NA	NA	NA
(-1.4, -1.2]	3	NA	NA	NA	NA	NA
(-1.2, -1.0]	NA	NA	2	NA	NA	2
(-1.0, -0.8]	1	2	1	3	NA	2
(-0.8, -0.6]	1	NA	1	NA	NA	2
(-0.6, -0.4]	NA	1	1	4	NA	1
(-0.4, -0.2]	NA	NA	1	3	1	NA
(-0.2, 0.0]	1	NA	3	3	NA	1
(0.0, 0.2]	NA	1	NA	2	1	2
(0.2, 0.4]	NA	NA	NA	NA	NA	1
(0.4, 0.6]	NA	NA	1	2	NA	NA
(0.6, 0.8]	NA	NA	NA	2	2	1
(0.8, 1.0]	NA	NA	NA	1	1	NA
(1.0, 1.2]	NA	NA	NA	1	NA	NA
(1.2, 1.4]	NA	NA	NA	NA	2	NA
(1.4, 1.6]	NA	NA	NA	NA	1	NA
(1.6, 1.8]	NA	NA	NA	NA	1	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	1	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.26 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Three

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	NA	NA	NA	NA	NA
(-1.6, -1.4]	NA	NA	NA	NA	NA	NA
(-1.4, -1.2]	NA	NA	NA	NA	NA	NA
(-1.2, -1.0]	1	NA	NA	NA	NA	NA
(-1.0, -0.8]	4	NA	1	NA	NA	1
(-0.8, -0.6]	NA	NA	1	NA	NA	1
(-0.6, -0.4]	1	NA	1	NA	NA	3
(-0.4, -0.2]	NA	1	4	NA	NA	3
(-0.2, 0.0]	NA	NA	3	4	1	1
(0.0, 0.2]	NA	2	2	3	NA	2
(0.2, 0.4]	NA	NA	NA	4	2	2
(0.4, 0.6]	NA	1	NA	NA	NA	3
(0.6, 0.8]	NA	NA	NA	4	4	1
(0.8, 1.0]	NA	NA	NA	NA	NA	1
(1.0, 1.2]	NA	NA	NA	1	1	1
(1.2, 1.4]	NA	NA	NA	2	2	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	2	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	1
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	1	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.27 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Four

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	NA	NA	NA	NA	NA
(-1.6, -1.4]	3	NA	NA	NA	NA	NA
(-1.4, -1.2]	NA	NA	NA	NA	NA	NA
(-1.2, -1.0]	NA	NA	NA	NA	NA	1
(-1.0, -0.8]	2	NA	NA	NA	NA	NA
(-0.8, -0.6]	1	NA	3	NA	NA	NA
(-0.6, -0.4]	1	NA	2	NA	NA	NA
(-0.4, -0.2]	NA	1	3	2	NA	3
(-0.2, 0.0]	NA	1	NA	2	NA	1
(0.0, 0.2]	1	NA	1	1	NA	2
(0.2, 0.4]	NA	NA	NA	4	NA	3
(0.4, 0.6]	NA	NA	1	3	3	3
(0.6, 0.8]	NA	NA	NA	4	1	2
(0.8, 1.0]	NA	NA	NA	NA	3	1
(1.0, 1.2]	NA	NA	NA	2	1	NA
(1.2, 1.4]	NA	NA	NA	2	1	1
(1.4, 1.6]	NA	NA	NA	NA	1	1
(1.6, 1.8]	NA	NA	NA	NA	1	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	1
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	1

Table 8.C.28 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Five

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	NA	NA	NA	NA	NA
(-1.6, -1.4]	1	NA	NA	NA	NA	NA
(-1.4, -1.2]	1	NA	NA	NA	NA	NA
(-1.2, -1.0]	1	NA	NA	NA	NA	NA
(-1.0, -0.8]	NA	NA	NA	NA	NA	2
(-0.8, -0.6]	1	NA	NA	NA	NA	1
(-0.6, -0.4]	1	NA	1	NA	1	NA
(-0.4, -0.2]	NA	1	6	NA	NA	1
(-0.2, 0.0]	1	NA	1	3	1	2
(0.0, 0.2]	NA	1	2	4	NA	3
(0.2, 0.4]	NA	NA	NA	3	1	1
(0.4, 0.6]	NA	1	1	3	1	NA
(0.6, 0.8]	NA	1	NA	1	1	3
(0.8, 1.0]	NA	NA	NA	3	2	3
(1.0, 1.2]	NA	NA	NA	2	1	2
(1.2, 1.4]	NA	NA	NA	1	1	1
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	1	2	NA
(1.8, 2.0]	NA	NA	NA	NA	1	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	1
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.29 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Six

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	NA	NA	NA	NA	NA
(-1.6, -1.4]	NA	NA	NA	NA	NA	NA
(-1.4, -1.2]	NA	NA	NA	NA	NA	NA
(-1.2, -1.0]	NA	NA	NA	NA	NA	NA
(-1.0, -0.8]	NA	NA	NA	NA	NA	1
(-0.8, -0.6]	2	NA	NA	NA	NA	NA
(-0.6, -0.4]	3	NA	1	NA	NA	2
(-0.4, -0.2]	1	NA	4	NA	NA	3
(-0.2, 0.0]	NA	2	1	3	NA	4
(0.0, 0.2]	NA	NA	3	5	1	2
(0.2, 0.4]	1	1	1	2	1	2
(0.4, 0.6]	NA	NA	1	2	1	3
(0.6, 0.8]	NA	NA	NA	1	3	1
(0.8, 1.0]	NA	NA	NA	2	2	1
(1.0, 1.2]	NA	NA	NA	NA	2	1
(1.2, 1.4]	NA	NA	NA	NA	NA	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	1	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	1	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.30 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Seven

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	NA	NA	NA	NA	NA
(-1.6, -1.4]	1	NA	NA	NA	NA	NA
(-1.4, -1.2]	NA	NA	NA	NA	NA	1
(-1.2, -1.0]	1	NA	NA	NA	NA	NA
(-1.0, -0.8]	1	NA	NA	NA	NA	NA
(-0.8, -0.6]	2	NA	3	NA	NA	2
(-0.6, -0.4]	2	1	3	NA	NA	1
(-0.4, -0.2]	NA	NA	2	NA	NA	2
(-0.2, 0.0]	NA	1	3	2	NA	5
(0.0, 0.2]	NA	1	1	2	1	4
(0.2, 0.4]	NA	NA	NA	3	NA	1
(0.4, 0.6]	NA	NA	NA	3	NA	1
(0.6, 0.8]	NA	NA	NA	4	3	NA
(0.8, 1.0]	NA	NA	NA	1	2	NA
(1.0, 1.2]	NA	NA	NA	1	4	1
(1.2, 1.4]	NA	NA	NA	NA	NA	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	2
(2.4, 2.6]	NA	NA	NA	NA	1	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.31 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Eight

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	NA	NA	NA	NA	NA
(-1.6, -1.4]	1	NA	NA	NA	NA	NA
(-1.4, -1.2]	NA	NA	NA	NA	NA	1
(-1.2, -1.0]	1	NA	NA	NA	NA	1
(-1.0, -0.8]	2	NA	NA	NA	NA	1
(-0.8, -0.6]	NA	NA	4	NA	NA	4
(-0.6, -0.4]	NA	NA	3	NA	NA	1
(-0.4, -0.2]	NA	NA	2	2	NA	1
(-0.2, 0.0]	NA	NA	4	1	NA	1
(0.0, 0.2]	3	2	NA	1	NA	1
(0.2, 0.4]	NA	NA	NA	3	3	2
(0.4, 0.6]	NA	NA	NA	3	1	1
(0.6, 0.8]	NA	1	NA	1	2	4
(0.8, 1.0]	NA	NA	NA	NA	3	1
(1.0, 1.2]	NA	NA	NA	NA	NA	1
(1.2, 1.4]	NA	NA	NA	2	2	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	1	1	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.32 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Eleven

<i>b</i> -value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(-3.0, -2.8]	NA	NA	NA	NA	NA	NA
(-2.8, -2.6]	NA	NA	NA	NA	NA	NA
(-2.6, -2.4]	NA	NA	NA	NA	NA	NA
(-2.4, -2.2]	NA	NA	NA	NA	NA	NA
(-2.2, -2.0]	NA	NA	NA	NA	NA	NA
(-2.0, -1.8]	NA	NA	NA	NA	NA	NA
(-1.8, -1.6]	NA	NA	NA	NA	NA	NA
(-1.6, -1.4]	NA	NA	NA	NA	NA	NA
(-1.4, -1.2]	NA	NA	NA	NA	NA	NA
(-1.2, -1.0]	2	NA	NA	NA	NA	NA
(-1.0, -0.8]	1	NA	NA	2	NA	2
(-0.8, -0.6]	NA	NA	2	3	NA	1
(-0.6, -0.4]	1	NA	1	NA	2	1
(-0.4, -0.2]	NA	NA	4	NA	1	2
(-0.2, 0.0]	2	2	1	NA	1	5
(0.0, 0.2]	1	1	2	4	1	1
(0.2, 0.4]	NA	NA	1	1	1	1
(0.4, 0.6]	NA	NA	NA	1	1	NA
(0.6, 0.8]	NA	NA	NA	2	1	1
(0.8, 1.0]	NA	NA	NA	3	1	NA
(1.0, 1.2]	NA	NA	NA	NA	NA	2
(1.2, 1.4]	NA	NA	NA	1	NA	1
(1.4, 1.6]	NA	NA	NA	NA	2	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	2
(1.8, 2.0]	NA	NA	NA	NA	1	1
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Appendix 8.D: Omission and Completion Rates

Note: In [Table 8.D.1](#) through [Table 8.D.14](#), the value in the *Position* column indicates the item location in the module and version.

Table 8.D.1 Item Difficulties and Omit Rate—English Language Arts/Literacy (ELA), Grade Three

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTW3020108T1	ZoneSS Discrete	0.74	-1.20	13%
CLTR3020057T1-M	ZoneMS Member	0.71	-1.19	5%
CLTR3020058T1-M	MCSS Member	0.80	-1.56	3%
CLTR3020059T1-O	MCMA - Member	0.81	-1.21	2%
CLTW3020095T1	ZoneMS Discrete	0.77	-1.60	2%
CLTR3020105T1	MCSS Discrete	0.72	-1.04	1%
CLTW3020107T1	MCSS Discrete	0.81	-1.65	2%
CLTR3020140T2-M	ZoneMS Member	0.71	-1.34	3%
CLTR3020141T2-M	MCSS Member	0.48	0.19	3%
CLTR3020142T2-M	MCMA - Member	0.52	0.00	4%
CLTR3020051T1	MCSS Member	0.51	-0.72	5%
CLTR3020052T1	MCSS Member	0.53	-0.80	5%
CLTR3020053T1-M	MatchSS Member	0.50	-0.69	14%
CLTR3020170T1	MCMA - Member	0.32	-0.05	11%
CLTR3020169T1	ZoneMS Member	0.54	-0.87	12%
CLTW3020171T1-R	ZoneMS Member	0.32	0.19	11%
CLTR3020093T1	MCSS Discrete	0.47	-0.55	7%
CLTR3040231T1	ZoneSS Member	0.78	-2.11	15%
CLTW3020146T2	ZoneMS Discrete	0.57	-1.15	8%
CLTR3020143T2	MCSS Discrete	0.56	-0.95	8%
CLTW3020145T2-M	MatchMS Member	0.53	-0.79	16%
CLTW3020162T2	MCSS Discrete	0.52	-0.78	9%
CLTW3040186T2	ZoneMS Member	0.41	-0.25	9%
CLTR3030110T2	ZoneMS Member	0.65	-1.43	8%
CLTR3030028T1	MCSS Discrete	0.35	0.04	13%
CLTR3020094T1	MCSS Discrete	0.55	0.22	1%
CLTW3030030T1	MatchMS Discrete	0.60	0.07	3%
CLTR3030136T1	Composite - Member	0.78	-0.90	0%
CLTW3020165T2	MatchSS Member	0.66	-0.29	3%
CLTR3020163T2	MCSS Member	0.65	-0.24	3%
CLTR3020164T2	MCSS Member	0.72	-0.59	2%
CLTR3030080T2	MCSS Member	0.55	0.22	1%
CLTR3030081T2	MCSS Member	0.62	-0.07	2%
CLTW3030082T2	ZoneMS Member	0.73	-0.75	2%
CLTW3030113T2	MatchMS Discrete	0.71	-0.07	2%
CLTR3040181T2	Composite - Member	0.72	-0.32	3%
CLTW3020403T3	MCSS Partial Credit Member	0.48	0.80	6%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTW3020161T2	MatchMS Discrete	0.38	1.30	2%
CLTR3040191T3	MCSS Member	0.37	1.03	3%
CLTR3030168T3	MCSS Discrete	0.54	0.23	2%
CLTR3040188T2	MCSS Member	0.85	-0.58	1%
CLTR3040187T2	Composite - Member	0.55	0.80	2%
CLTR3040189T2	MCSS Member	0.73	0.15	1%
CLTR3040182T2	MCSS Member	0.74	0.16	0%
CLTW3020179T3	MCSS Partial Credit Member	0.50	1.29	4%
CLTR3030158T3-R	MCSS Member	0.97	-2.31	2%
CLTR3030159T3	MCSS Member	0.53	1.15	1%
CLTW3030160T3	MCSS Partial Credit Member	0.54	1.15	5%
CLTR3030166T3	ZoneMS Member	0.72	-0.14	1%
CLTR3040194T3	MCSS Member	0.72	0.22	3%
CLTR3040190T3	ZoneMS Member	0.90	-1.28	1%
CLTR3040024T1	MCSS Member	0.59	-0.31	2%
CLTR3040025T1	ZoneMS Member	0.79	-1.60	3%
CLTR3040026T1	MCSS Member	0.64	-0.58	3%
CLTW3040004T1	ZoneSS Member	0.54	-0.01	9%
CLTR3040039T1	MCSS Member	0.45	0.30	3%
CLTR3040038T1	Composite - Member	0.60	-0.60	6%
CLTR3040040T1	ZoneSS Member	0.46	0.22	9%
CLTW3040227T2	MatchSS Member	0.26	1.36	13%
CLTR3040232T1	ZoneMS Discrete	0.70	-1.13	4%
CLTR3040183T2	ZoneMS Discrete	0.75	-1.41	4%
CLTW3040184T2	MCMS Member	0.39	0.66	7%
CLTW3040022T1	MCSS Member	0.78	-1.40	2%
CLTR3040180T2	MCSS Member	0.46	0.16	3%
CLTR3040085T2	MCSS Member	0.30	1.01	6%
CLTR3040084T2	MCSS Member	0.44	0.23	5%
CLTW3040086T2	MatchMS Member	0.59	-0.50	12%
CLTR3030164T3	ZoneMS Member	0.75	-1.44	3%
CLTR3040179T2	MCSS Member	0.69	-0.77	3%
CLTW3040193T3	MCSS Partial Credit Member	0.39	0.62	8%
CLTR3040192T3	MCMA - Member	0.63	-0.31	3%

Table 8.D.2 Item Difficulties and Omit Rate—ELA, Grade Four

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTR4020239T1	MCSS Discrete	0.80	-1.62	1%
CLTR4020304T1-M	MCSS Member	0.66	-0.74	2%
CLTR4020305T1-M	ZoneMS Member	0.70	-1.09	6%
CLTW4020306T1-O	ZoneMS Member	0.70	-1.14	3%
CLTW4020240T1-M	MatchMS Member	0.74	-1.08	5%
CLTR4020308T1	MCSS Discrete	0.64	-0.61	2%
CLTR4020084T2	MCSS Discrete	0.78	-1.41	2%
CLTR4030020T2	MCSS Member	0.59	-0.34	3%
CLTR4030021T2	ZoneMS Member	0.58	-0.46	7%
CLTW4030022T2	MCSS Member	0.48	0.20	5%
CLTR4020256T1-M	MCSS Member	0.43	-0.48	7%
CLTR4020257T1-M	ZoneMS Member	0.59	-1.22	9%
CLTR4020258T1-M	MCMA - Member	0.54	-0.90	8%
CLTR4040202T1	MCSS Discrete	0.63	-1.37	6%
CLTR4030173T1	MCSS Member	0.40	-0.34	9%
CLTR4020237T1	MCSS Discrete	0.72	-1.85	5%
CLTR4030170T1	MCSS Member	0.34	-0.06	6%
CLTR4030171T1	ZoneMS Member	0.76	-1.71	4%
CLTW4040203T1	ZoneSS Member	0.62	-1.33	12%
CLTR4020116T2	MCSS Member	0.45	-0.56	7%
CLTR4020117T2	ZoneMS Member	0.57	-1.14	8%
CLTW4020118T2	MCSS Member	0.32	0.04	9%
CLTR4030023T2-R	MCSS Member	0.42	-0.46	9%
CLTR4030024T2	ZoneMS Member	0.47	-0.62	13%
CLTR4030025T2	MCMA - Member	0.31	-0.16	11%
CLTR4040200T1	MCSS Member	0.32	1.06	0%
CLTR4030172T1	ZoneMS Member	0.69	-0.61	1%
CLTR4030062T2	MatchMS Member	0.81	-0.82	1%
CLTW4040074T2	MCSS Member	0.47	0.74	1%
CLTR4040005T2	MatchSS Discrete	0.77	-1.04	2%
CLTR4040069T2	MCSS Member	0.51	0.57	1%
CLTW4020138T2	MCSS Discrete	0.67	-0.51	1%
CLTR4020090T2	MCSS Member	0.24	1.51	1%
CLTR4020091T2	ZoneMS Member	0.55	-0.10	2%
CLTR4020092T2	MCMA - Member	0.54	0.12	2%
CLTR4040072T2	ZoneMS Member	0.57	-0.15	2%
CLTR4020245T3	MCSS Member	0.47	0.38	4%
CLTR4020244T3-M	MatchMS Member	0.34	0.82	4%
CLTW4020246T3	MCSS Partial Credit Member	0.39	0.70	6%
CLTR4020119T2-M	MCSS Member	0.36	1.71	1%
CLTR4020120T2-M	ZoneMS Member	0.57	0.76	2%
CLTW4020121T2-M	ZoneSS Member	0.54	0.92	2%
CLTR4020083T2	MCSS Discrete	0.61	0.62	1%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTR4040195T3	MCSS Member	0.58	0.73	0%
CLTR4030089T3	MCSS Member	0.58	0.76	1%
CLTR4030090T3	ZoneMS Member	0.63	0.29	1%
CLTR4030091T3	MCMA - Member	0.70	0.46	2%
CLTW4030132T3-R	MatchMS Member	0.55	0.88	1%
CLTW4030133T3-R	MCSS Partial Credit Member	0.62	0.62	3%
CLTR4020128T3	MCSS Member	0.78	-0.26	1%
CLTR4030131T3	MCSS Discrete	0.63	0.52	2%
CLTR4040006T1	MCSS Member	0.71	-0.91	2%
CLTR4040007T1	ZoneMS Member	0.75	-1.05	4%
CLTW4040008T1	ZoneMS Member	0.63	-0.64	6%
CLTR4040199T1	MCSS Member	0.84	-1.77	2%
CLTR4040001T2	MCSS Member	0.70	-0.99	3%
CLTR4040002T2	ZoneSS Member	0.55	-0.23	7%
CLTR4040003T2	MCMA - Member	0.74	-0.94	5%
CLTR4040071T2	MCSS Member	0.66	-0.80	3%
CLTR4040100T1	MCSS Member	0.86	-2.09	3%
CLTR4040101T1	ZoneMS Member	0.73	-1.27	4%
CLTW4040102T1	MCSS Member	0.42	0.44	5%
CLTR4040201T1	ZoneMS Discrete	0.69	-1.28	3%
CLTR4040051T2	MCSS Member	0.64	-0.65	3%
CLTR4040052T2	ZoneMS Member	0.61	-0.70	8%
CLTW4040053T2	MCSS Member	0.41	0.48	6%
CLTW4040076T2	ZoneMS Member	0.68	-1.03	5%
CLTR4040070T2	ZoneMS Member	0.72	-1.32	3%
CLTW4040073T2	MCSS Member	0.40	0.61	3%
CLTW4040009T3	MCSS Partial Credit Member	0.41	0.47	8%
CLTR4040197T3	MCSS Member	0.77	-1.36	4%

Table 8.D.3 Item Difficulties and Omit Rate—ELA, Grade Five

Item ID	Item Type	p -value	IRT b -value	Omit Rate
CLTW5020317T1	ZoneMS Discrete	0.81	-1.90	1%
CLTR5020453T1-M	ZoneMS Member	0.87	-2.25	1%
CLTW5020454T1-M	ZoneMS Member	0.73	-1.36	2%
CLTR5030154T1	ZoneMS Member	0.78	-1.50	2%
CLTR5030156T1	ZoneMS Discrete	0.80	-1.75	2%
CLTR5020314T1	MCSS Discrete	0.66	-0.70	1%
CLTR5030185T2	ZoneMS Member	0.82	-2.00	2%
CLTR5020253T2-M	MCSS Member	0.58	-0.24	2%
CLTR5020254T2-M	ZoneMS Member	0.68	-1.05	5%
CLTW5020255T2-M	MCSS Member	0.36	0.85	5%
CLTW5030157T1	MCSS Member	0.71	-1.80	5%
CLTR5040041T1	MCSS Member	0.42	-0.47	4%
CLTR5020327T1-M	MCSS Member	0.47	-0.69	5%
CLTR5020328T1-M	ZoneMS Member	0.56	-1.13	9%
CLTW5020329T1-M	MCSS Member	0.39	-0.33	8%
CLTW5020335T1	MCSS Discrete	0.27	0.23	5%
CLTR5030263T1	MCSS Member	0.42	-0.46	6%
CLTR5030264T1	ZoneMS Member	0.54	-1.11	9%
CLTW5030265T1	MCSS Member	0.31	0.05	8%
CLTR5020047T2	ZoneMS Discrete	0.57	-1.31	7%
CLTR5020346T2	MCMA - Discrete	0.48	-0.77	6%
CLTR5030183T2	ZoneMS Member	0.54	-1.09	8%
CLTR5040104T2	MCSS Member	0.40	-0.37	8%
CLTW5040105T2	ZoneMS Member	0.52	-0.98	9%
CLTR5040103T2	MCSS Member	0.28	0.18	11%
CLTR5030122T1	MCSS Member	0.54	0.07	2%
CLTR5030123T1-M	MCMA - Member	0.42	0.49	2%
CLTW5030124T1	MatchMS Member	0.74	-1.17	5%
CLTW5020347T2	MCSS Discrete	0.40	1.02	1%
CLTR5030179T2	MCSS Member	0.60	-0.23	2%
CLTR5030180T2	ZoneMS Member	0.73	-1.06	3%
CLTW5030181T2-R	MCSS Member	0.50	0.21	3%
CLTR5040116T2	MCSS Member	0.48	0.33	1%
CLTR5020342T2	MCMA - Discrete	0.55	0.44	1%
CLTR5040109T2	MCSS Member	0.83	-1.52	2%
CLTR5040110T2	Composite - Member	0.76	-0.83	4%
CLTW5040111T2	MatchMS Member	0.80	-1.06	3%
CLTR5030140T3	MCSS Member	0.51	0.19	2%
CLTR5020073T3	MCSS Discrete	0.34	0.97	2%
CLTW5030139T3	MatchMS Member	0.62	-0.29	3%
CLTR5040087T2	MCSS Member	0.72	0.01	1%
CLTR5040088T2	ZoneMS Member	0.84	-0.95	1%
CLTR5040089T2	MCMA - Member	0.63	0.63	1%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTR5040115T2	ZoneMS Member	0.86	-1.96	0%
CLTR5020038T3-M	MCMS Member	0.34	1.76	1%
CLTR5020039T3-M	MCSS Member	0.39	1.48	1%
CLTW5020040T3-M	MCSS Partial Credit Member	0.38	1.45	3%
CLTR5020341T3	ZoneMS Discrete	0.62	-0.32	1%
CLTR5040171T3	MatchSS Member	0.64	0.41	1%
CLTW5040230T3	MCSS Partial Credit Member	0.78	0.03	3%
CLTR5040228T3	MCSS Member	0.54	0.85	1%
CLTR5040229T3	MCSS Member	0.54	0.85	2%
CLTW5040174T3	MatchMS Discrete	0.76	-0.24	1%
CLTW5040019T1	MCSS Member	0.65	-0.53	2%
CLTR5040014T1	MCSS Member	0.73	-0.98	3%
CLTR5040013T1	ZoneMS Member	0.84	-1.76	3%
CLTW5040015T1	MatchMS Member	0.75	-1.08	5%
CLTW5030187T2-R	MatchSS Member	0.54	-0.15	5%
CLTR5040035T1	MCSS Member	0.73	-1.15	3%
CLTW5040036T1	MCSS Member	0.79	-1.54	5%
CLTR5040034T1	ZoneMS Member	0.76	-1.55	3%
CLTR5040118T2	ZoneMS Member	0.79	-1.78	1%
CLTR5020250T3	MatchMS Member	0.58	-0.24	4%
CLTW5020251T3	MatchMS Member	0.67	-0.60	6%
CLTR5020252T3	MCSS Member	0.39	0.63	5%
CLTR5030145T1	MCSS Member	0.74	-1.11	1%
CLTR5040016T1	MCSS Member	0.79	-1.47	2%
CLTR5040018T1	MCMA - Member	0.69	-0.53	5%
CLTR5040017T1	ZoneMS Member	0.76	-1.20	8%
CLTR5020336T1	MCMA - Member	0.72	-0.69	1%
CLTR5030182T2-R	MCSS Member	0.57	-0.22	2%
CLTR5040117T2	MCSS Member	0.64	-0.58	2%
CLTW5040120T2	MCSS Member	0.43	0.45	3%

Table 8.D.4 Item Difficulties and Omit Rate—ELA, Grade Six

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTR6020097T1	MCMA - Discrete	0.88	-1.50	1%
CLTR6030030T1	MCMA - Member	0.75	-0.89	2%
CLTR6030031T1	MCSS Member	0.79	-1.45	4%
CLTW6030032T1-O	ZoneMS Member	0.65	-0.67	3%
CLTW6030202T1	MatchMS Member	0.69	-0.86	2%
CLTW6020104T1	ZoneMS Discrete	0.72	-1.31	2%
CLTR6020204T2	ZoneMS Discrete	0.77	-1.66	2%
CLTR6020200T2-M	MCSS Member	0.61	-0.46	4%
CLTR6020199T2-M	MCSS Member	0.66	-0.73	5%
CLTR6020202T2	ZoneMS Discrete	0.73	-1.28	3%
CLTR6020101T1-R	MCSS Discrete	0.36	-0.68	14%
CLTW6030012T1-R	ZoneSS Member	0.27	-0.21	25%
CLTR6030010T1-R	MCSS Member	0.32	-0.53	14%
CLTR6030011T1-R	MatchMS Member	0.18	0.04	19%
CLTR6030203T1	MCSS Member	0.32	-0.48	11%
CLTR6020098T1	ZoneMS Discrete	0.43	-0.91	13%
CLTR6030042T1	MCMA - Member	0.36	-0.88	13%
CLTR6040124T1	MCSS Member	0.47	-1.16	14%
CLTR6020099T1	MCMA - Discrete	0.44	-1.11	13%
CLTR6030073T2	MCSS Member	0.26	-0.19	16%
CLTR6030074T2-R	MCMS Member	0.07	1.40	21%
CLTW6030075T2	MatchMS Member	0.36	-0.75	29%
CLTW6040204T2	MatchMS Member	0.28	-0.27	20%
CLTR6030128T2	ZoneMS Member	0.39	-0.84	19%
CLTW6020208T2	MCSS Discrete	0.36	-0.67	22%
CLTR6030064T1-R	MCSS Member	0.64	-0.93	3%
CLTR6030065T1-R	MCSS Member	0.80	-1.78	5%
CLTW6030066T1	MatchMS Member	0.49	-0.24	6%
CLTW6040166T2	ZoneMS Member	0.64	-1.24	3%
CLTR6030260T2	MCSS Member	0.53	-0.45	4%
CLTR6030261T2	Composite - Member	0.51	-0.38	5%
CLTR6030262T2	MCMA - Member	0.59	-0.57	6%
CLTW6040165T2	MatchSS Member	0.38	0.20	5%
CLTR6030197T2	ZoneSS Member	0.45	0.45	5%
CLTR6030147T2	MCSS Member	0.35	0.34	4%
CLTR6030148T2	ZoneMS Member	0.57	-0.69	8%
CLTW6030149T2	MatchSS Member	0.47	-0.21	8%
CLTR6030205T3	ZoneMS Member	0.54	-0.56	4%
CLTW6040033T3	MatchMS Member	0.25	0.86	6%
CLTR6040030T3	ZoneMS Member	0.50	-0.29	5%
CLTR6040163T2	MCMS Member	0.47	0.89	0%
CLTW6040168T2	ZoneMS Member	0.91	-1.57	1%
CLTR6040169T2	MCSS Member	0.78	-0.60	2%

Item ID	Item Type	p -value	IRT b -value	Omit Rate
CLTR6040170T2	MatchMS Member	0.41	1.14	1%
CLTW6020209T2	MCSS Partial Credit Member	0.56	0.47	3%
CLTW6030228T3	MatchMS Member	0.69	-0.14	1%
CLTR6020418T3	MCMA - Member	0.40	1.07	2%
CLTR6020416T3	MCMS Member	0.31	1.64	3%
CLTR6020417T3	ZoneMS Member	0.60	0.04	3%
CLTW6020424T3	MCSS Discrete	0.40	1.21	1%
CLTR6040032T3	ZoneMS Member	0.70	-0.47	1%
CLTR6040010T3	ZoneMS Member	0.84	-1.04	2%
CLTR6040011T3	MCSS Member	0.50	0.72	2%
CLTW6040012T3	MCSS Partial Credit Member	0.45	0.95	5%
CLTW6040123T1	ZoneMS Member	0.78	-1.48	2%
CLTR6040112T1	MCMA - Member	0.82	-1.12	3%
CLTR6040114T1	MCSS Member	0.61	-0.40	6%
CLTR6040113T1	MCSS Member	0.77	-1.35	6%
CLTR6040176T2	ZoneMS Member	0.81	-1.67	4%
CLTW6040177T2	MatchMS Member	0.62	-0.58	5%
CLTR6040178T2	MCSS Member	0.48	0.14	5%
CLTR6040164T2	MCSS Member	0.53	-0.12	2%
CLTW6040108T1	MCSS Member	0.52	0.01	4%
CLTR6040106T1	MCMS Member	0.68	-0.77	3%
CLTR6040107T1	MatchMS Member	0.52	0.02	5%
CLTR6040167T2	ZoneMS Member	0.71	-1.31	3%
CLTW6020103T1	MCSS Member	0.49	0.11	5%
CLTR6040236T1	ZoneMS Discrete	0.69	-1.13	4%
CLTR6040121T1	MCMA - Member	0.70	-0.67	3%
CLTW6020102T1	MCSS Member	0.65	-0.69	3%
CLTR6020423T2-R	MCSS Member	0.74	-1.18	3%
CLTR6040031T3	MCSS Member	0.35	0.80	4%
CLTW6040138T1	MatchMS Member	0.45	0.30	4%
CLTR6040122T1	MCSS Member	0.69	-0.87	3%

Table 8.D.5 Item Difficulties and Omit Rate—ELA, Grade Seven

Item ID	Item Type	p-value	IRT b-value	Omit Rate
CLTW7020385T1	MCSS Discrete	0.81	-1.69	1%
CLTR7020411T1	MCSS Member	0.84	-1.97	1%
CLTR7020410T1	MCSS Member	0.64	-0.63	3%
CLTW7020412T1	ZoneMS Member	0.61	-1.12	1%
CLTR7020380T1	MCSS Discrete	0.79	-1.55	2%
CLTW7020386T1	ZoneMS Discrete	0.68	-1.27	1%
CLTR7020368T2	ZoneMS Discrete	0.66	-1.21	2%
CLTR7030070T2	ZoneMS Member	0.64	-0.97	3%
CLTR7030071T2	MCSS Member	0.54	-0.14	5%
CLTW7030072T2	MCSS Member	0.61	-0.48	5%
CLTR7020382T1	ZoneMS Discrete	0.52	-1.02	5%
CLTR7030252T1-R	MCSS Member	0.75	-2.11	6%
CLTR7030253T1-R	MCSS Member	0.30	0.09	8%
CLTW7030254T1	ZoneMS Member	0.56	-1.21	9%
CLTR7020379T1	ZoneMS Discrete	0.59	-1.43	7%
CLTR7020383T1	MCMA - Discrete	0.41	-0.57	7%
CLTR7040127T1	MCSS Member	0.74	-2.05	7%
CLTR7040128T1	MCSS Member	0.39	-0.39	10%
CLTW7040129T1	MatchMS Member	0.64	-1.50	15%
CLTR7020378T2	MCMA - Member	0.30	-0.15	10%
CLTR7020377T2	MCSS Member	0.24	0.40	14%
CLTR7020376T2	MCSS Member	0.32	-0.04	11%
CLTW7040065T2	ZoneMS Member	0.76	-1.60	4%
CLTW7040066T2	MCSS Member	0.37	-0.26	9%
CLTR7040175T2	MCSS Member	0.39	-0.38	9%
CLTW7030246T1	MCSS Member	0.64	-0.39	1%
CLTR7020381T1	MCSS Discrete	0.56	-0.02	1%
CLTW7020384T1	MCSS Discrete	0.32	1.09	1%
CLTR7030054T2	MCSS Member	0.63	-0.35	2%
CLTR7030055T2	MCSS Member	0.41	0.66	4%
CLTW7030056T2	MatchMS Member	0.53	0.11	5%
CLTW7030242T2	MCSS Member	0.74	-0.90	2%
CLTWT020155T2	MCSS Partial Credit Member	0.49	0.29	6%
CLTR7020154T2	MCSS Member	0.78	-1.15	2%
CLTR7020153T2	MCSS Member	0.37	0.84	3%
CLTR7020370T2	MCSS Discrete	0.49	0.29	2%
CLTR7020365T3	MCMA - Discrete	0.48	0.30	2%
CLTR7040062T3	ZoneMS Member	0.65	-0.72	2%
CLTR7030250T3	MCSS Member	0.46	0.43	2%
CLTR7020158T2	MCSS Partial Credit Member	0.70	0.30	4%
CLTR7020156T2	MCSS Member	0.57	0.83	0%
CLTR7020157T2	MCSS Member	0.47	1.26	1%
CLTR7040045T2	MCMS Member	0.78	-0.21	0%

Item ID	Item Type	p-value	IRT b-value	Omit Rate
CLTR7040046T2	MCSS Member	0.80	-0.36	1%
CLTR7040047T2	MatchMS Member	0.74	0.40	1%
CLTR7020360T3	ZoneMS Member	0.64	-0.22	0%
CLTR7020362T3	MCMS Discrete	0.49	1.19	1%
CLTW7030116T3	MCSS Partial Credit Member	0.55	0.98	6%
CLTR7030114T3	MCMS Member	0.72	0.07	1%
CLTR7030115T3	MCSS Member	0.63	0.58	2%
CLTW7020350T3	MCSS Partial Credit Member	0.58	0.83	5%
CLTR7020348T3	MCSS Member	0.44	1.43	2%
CLTR7020349T3	MCMS Member	0.19	2.74	3%
CLTR7040061T3	MCMA - Member	0.56	0.97	0%
CLTR7040153T2	MCSS Member	0.68	-0.85	3%
CLTR7040154T2	ZoneMS Member	0.73	-1.21	5%
CLTW7040155T2	MatchMS Member	0.72	-0.99	6%
CLTR7040162T1	MCSS Member	0.80	-1.58	2%
CLTR7040042T2	MCSS Member	0.65	-0.69	3%
CLTR7040043T2	MCSS Member	0.68	-0.86	5%
CLTW7040044T2	ZoneMS Member	0.72	-1.18	6%
CLTR7040064T2	MCSS Member	0.42	0.47	3%
CLTR7040077T3	MCMS Member	0.41	0.53	3%
CLTR7040078T3	MCMS Member	0.44	0.35	5%
CLTW7040079T3	MCSS Partial Credit Member	0.42	0.39	10%
CLTW7040068T2	MCSS Member	0.43	0.41	3%
CLTR7040049T2	MCSS Member	0.57	-0.34	2%
CLTR7040048T2	ZoneMS Member	0.64	-0.96	5%
CLTW7040050T2	MCSS Member	0.56	-0.27	5%
CLTR7040063T2	MCSS Member	0.57	-0.34	2%
CLTR7040125T1	MCMA - Member	0.72	-0.79	2%
CLTR7040156T1	ZoneMS Member	0.83	-1.93	2%
CLTW7040157T1	MCSS Member	0.58	-0.31	3%
CLTR7040126T1	MatchSS Member	0.64	-0.64	9%

Table 8.D.6 Item Difficulties and Omit Rate—ELA, Grade Eight

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTW8020390T1	MCSS Discrete	0.89	-2.25	1%
CLTR8020394T1-M	ZoneMS Member	0.58	-0.51	3%
CLTR8020395T1-M	MCSS Member	0.76	-1.26	2%
CLTW8020396T1-O	ZoneMS Member	0.61	-0.70	2%
CLTR8020446T1	ZoneMS Discrete	0.73	-1.37	1%
CLTR8020447T1	ZoneMS Discrete	0.60	-0.75	1%
CLTR8020321T2-M	ZoneMS Member	0.74	-1.22	3%
CLTR8020322T2-M	MCSS Member	0.37	0.70	4%
CLTR8020323T2-M	MCMA - Member	0.60	-0.26	3%
CLTW8030219T2	MCSS Partial Credit Member	0.62	-0.34	5%
CLTW8030212T1	ZoneMS Discrete	0.53	-0.26	3%
CLTR8020445T1	MCSS Discrete	0.54	-0.28	2%
CLTR8020210T1-R	MCSS Member	0.54	-0.66	5%
CLTR8020211T1-M	MCSS Member	0.49	-0.45	8%
CLTW8020212T1-M	MCSS Member	0.72	-1.48	7%
CLTR8040080T1	MCMA - Member	0.35	-0.03	4%
CLTR8040151T2	MCSS Member	0.57	-0.43	2%
CLTW8040037T1	MCSS Member	0.77	-1.78	4%
CLTR8030210T1-R	MCSS Member	0.53	-0.61	4%
CLTW8020260T2	MCSS Partial Credit Member	0.42	-0.19	11%
CLTR8030207T2	MCSS Member	0.36	0.13	6%
CLTR8030208T2	ZoneMS Member	0.47	-0.31	10%
CLTW8030209T2-R	MCSS Member	0.46	-0.32	8%
CLTR8020259T2	ZoneMS Discrete	0.61	-1.00	5%
CLTR8040152T2	MCSS Member	0.43	-0.16	5%
CLTW8040158T2	MCSS Member	0.67	-0.29	1%
CLTR8040150T2	MatchMS Member	0.49	0.26	2%
CLTR8040145T2	MCSS Member	0.28	1.22	1%
CLTR8040146T2	ZoneMS Member	0.77	-1.18	3%
CLTW8040147T2	ZoneMS Member	0.74	-1.09	3%
CLTR8020290T2	MCSS Discrete	0.56	-0.02	2%
CLTR8020285T2-M	MCSS Member	0.45	0.68	2%
CLTR8020286T2-M	MCSS Member	0.52	0.40	2%
CLTW8020287T2-M	MatchMS Member	0.33	1.24	2%
CLTR8020072T3	MCSS Discrete	0.35	0.88	2%
CLTR8020439T3	ZoneMS Discrete	0.57	-0.13	1%
CLTW8030129T3	MCSS Partial Credit Member	0.54	0.08	6%
CLTR8030223T2	MCSS Member	0.79	-0.46	0%
CLTR8040148T2	ZoneMS Member	0.76	-0.75	0%
CLTR8020066T3-M	ZoneMS Member	0.60	0.36	1%
CLTR8020068T3-M	MCMA - Member	0.65	0.50	1%
CLTR8020067T3-M	MCSS Member	0.55	0.75	2%
CLTR8030120T3	MCMS Member	0.52	0.85	0%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTW8020069T3	MCSS Discrete	0.47	1.08	1%
CLTR8040214T3	ZoneMS Member	0.79	-0.88	2%
CLTR8040215T3	ZoneMS Member	0.70	-0.49	2%
CLTW8040216T3	MCSS Partial Credit Member	0.66	0.36	3%
CLTW8040220T3	MatchSS Member	0.93	-1.77	0%
CLTR8040090T1	MCSS Member	0.69	-0.84	2%
CLTR8040091T1	ZoneMS Member	0.78	-1.39	4%
CLTW8040092T1	ZoneMS Member	0.72	-1.06	4%
CLTR8040219T3	MCMA - Member	0.51	0.04	2%
CLTR8040142T2	MCSS Member	0.76	-1.20	3%
CLTR8040144T2	ZoneMS Member	0.63	-0.71	5%
CLTR8040143T2	Composite - Member	0.43	0.37	4%
CLTR8040217T3	MCSS Member	0.47	0.25	3%
CLTR8040218T3	MCSS Member	0.55	-0.17	3%
CLTR8030125T1	ZoneMS Member	0.70	-0.99	2%
CLTR8030126T1	MCSS Member	0.76	-1.22	2%
CLTW8030127T1	ZoneMS Member	0.75	-1.14	5%

Table 8.D.7 Item Difficulties and Omit Rate—ELA, Grade Eleven

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTRH020034T1	MCSS Discrete	0.78	-1.28	1%
CLTRH020230T1	MCSS Member	0.58	-0.19	2%
CLTRH020231T1	MCSS Member	0.78	-1.32	1%
CLTWH020232T1	ZoneMS Member	0.72	-1.28	2%
CLTRH020033T1	ZoneMS Discrete	0.62	-0.77	2%
CLTRH020234T1	MCMA - Discrete	0.76	-0.85	2%
CLTRH020220T2	MCSS Member	0.70	-0.84	2%
CLTRH020221T2	MCSS Member	0.53	0.05	4%
CLTWH020222T2	ZoneMS Member	0.68	-0.87	4%
CLTWH020226T2	ZoneMS Discrete	0.62	-0.59	2%
CLTRH020233T1	MCSS Discrete	0.56	-1.08	4%
CLTWH020236T1	ZoneMS Discrete	0.62	-1.55	6%
CLTRH020032T1-M	MatchMS Member	0.49	-0.06	6%
CLTRH030038T1	MCMA - Member	0.29	-0.11	9%
CLTRH030037T1	ZoneMS Member	0.45	-0.54	13%
CLTRH030036T1-R	MCSS Member	0.46	-0.64	9%
CLTRH040131T1	ZoneMS Member	0.55	-1.13	7%
CLTRH040132T1	ZoneMS Member	0.52	-0.93	13%
CLTWH040133T1	MCSS Member	0.38	-0.29	8%
CLTRH020217T2	MCSS Member	0.51	-0.84	8%
CLTRH020218T2	ZoneMS Member	0.46	-0.52	10%
CLTWH020219T2	MCSS Member	0.32	0.00	12%
CLTRH020214T2	MatchMS Discrete	0.44	-0.59	11%
CLTWH040207T2	MCSS Member	0.52	-0.24	4%
CLTWH040222T2	MCSS Member	0.39	-0.30	8%
CLTWH030151T1	MCSS Member	0.46	0.40	1%
CLTRH040130T1	MCMS Member	0.58	-0.13	1%
CLTRH040221T2	MCSS Member	0.64	-0.40	2%
CLTRH040208T2	ZoneMS Member	0.56	-0.05	2%
CLTRH040209T2	ZoneMS Member	0.76	-0.98	5%
CLTWH040210T2	MatchSS Member	0.34	0.96	5%
CLTRH020189T2	MCMA - Member	0.73	-0.46	2%
CLTRH020187T2	MCMS Member	0.29	1.19	3%
CLTRH020223T2	MCSS Discrete	0.53	0.11	2%
CLTRH020213T2	MCSS Discrete	0.42	0.61	2%
CLTWH030230T3	MCMS Member	0.27	1.28	2%
CLTRH040056T3	MCMA - Member	0.68	-0.31	2%
CLTWH040096T3	MatchMS Member	0.61	0.07	2%
CLTRH030093T2	ZoneMS Member	0.82	-0.57	1%
CLTRH030092T2	MCSS Member	0.69	0.54	0%
CLTRH030094T2	MCMA - Member	0.75	0.52	1%
CLTRH020224T2	MCMA - Discrete	0.70	0.76	0%
CLTRH040224T2	ZoneMS Member	0.71	-0.20	1%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTRH040225T2	MCSS Member	0.89	-0.90	1%
CLTWH040226T2	MatchMS Member	0.85	-0.18	3%
CLTRH020278T3	MCSS Discrete	0.31	2.22	1%
CLTWH020433T3	MCSS Partial Credit Member	0.51	1.34	6%
CLTRH020266T3	MCSS Member	0.45	1.59	2%
CLTWH020268T3	MCSS Member	0.44	1.63	2%
CLTRH020267T3	ZoneMS Member	0.59	0.78	1%
CLTRH040054T3	MCMS Member	0.61	0.93	0%
CLTRH020275T3	MCMS Member	0.65	0.68	0%
CLTWH040137T1	MCSS Member	0.75	-1.15	2%
CLTRH040206T2	ZoneMS Member	0.68	-1.01	3%
CLTRH040223T2	MCSS Member	0.71	-0.87	2%
CLTRH040205T2	MCSS Member	0.40	0.70	2%
CLTWH030052T1-R	MCSS Member	0.70	-0.79	2%
CLTRH020031T1	MatchMS Member	0.65	-0.50	4%
CLTWH030153T2-R	MCSS Member	0.53	0.09	3%
CLTRH030152T2	MCSS Member	0.67	-0.63	2%
CLTRH040134T1	MCMA - Member	0.47	0.34	4%
CLTRH040135T1	MCMS Member	0.58	-0.16	3%
CLTWH040136T1	ZoneMS Member	0.67	-0.87	5%
CLTRH030229T3-R	MCSS Member	0.54	0.05	3%

Table 8.D.8 Item Difficulties and Omit Rate—Mathematics, Grade Three

Item ID	Item Type	p-value	IRT b-value	Omit Rate
CLTM3020004T1	MCSS Discrete	0.73	-0.98	2%
CLTM3020210T1	MCSS Discrete	0.71	-0.90	2%
CLTM3020186T1	MCSS Discrete	0.73	-1.00	2%
CLTM3030566T1	MCSS Discrete	0.71	-0.87	2%
CLTM3020059T1	MCSS Discrete	0.66	-0.59	4%
CLTM3020065T1	ZoneSS Discrete	0.74	-1.03	3%
CLTM3020063T2	MCMA - Discrete	0.62	-0.24	3%
CLTM3030592T2	ZoneMS Member	0.51	0.02	4%
CLTM3020008T2	MCSS Discrete	0.42	0.45	6%
CLTM3020172T2	MCMA - Discrete	0.47	0.19	4%
CLTM3020018T1	MCSS Discrete	0.44	-0.33	10%
CLTM3181019T2	Composite - Discrete	0.30	0.34	16%
CLTM3030500T1	ZoneSS Discrete	0.49	-0.19	10%
CLTM3020017T1	MCSS Discrete	0.53	-0.75	14%
CLTM3030506T1	ZoneSS Member	0.39	-0.13	18%
CLTM3020007T1	ZoneSS Discrete	0.43	0.08	7%
CLTM3020062T1	MCMA - Discrete	0.40	-0.35	15%
CLTM3020001T1	MCMA - Discrete	0.41	-0.36	14%
CLTM3180964T2	Composite - Member	0.19	0.75	19%
CLTM3030569T1	Composite - Member	0.39	-0.22	19%
CLTM3180960T2	MCSS Member	0.31	0.23	19%
CLTM3030496T2-R	MCSS Discrete	0.35	0.04	17%
CLTM3020060T2	MCSS Discrete	0.36	-0.04	21%
CLTM3020010T1	MCMA - Discrete	0.32	-0.10	16%
CLTM3030578T1-R	MCSS Discrete	0.56	-0.86	16%
CLTM3020171T1	MCMA - Discrete	0.41	0.19	2%
CLTM3030591T1	ZoneMS Member	0.57	-0.42	2%
CLTM3020057T2	MCSS Discrete	0.49	-0.01	4%
CLTM3020054T2	MCMA - Discrete	0.33	0.36	4%
CLTM3020202T2	MCSS Discrete	0.47	0.05	5%
CLTM3030582T2	MatchMS Discrete	0.52	-0.16	9%
CLTM3030567T2	MCSS Member	0.45	0.13	5%
CLTM3030499T2	Composite - Member	0.36	0.61	7%
CLTM3030579T2	MCSS Discrete	0.42	0.26	4%
CLTM3020205T3	MCSS Discrete	0.41	0.33	5%
CLTM3020187T2	MCSS Discrete	0.22	1.25	5%
CLTM3030502T3	MCSS Member	0.43	0.21	5%
CLTM3020003T3	MCMA - Discrete	0.48	-0.05	5%
CLTM3020209T3	MCSS Discrete	0.15	2.36	1%
CLTM3020204T2	MCSS Discrete	0.38	1.08	1%
CLTM3030565T3	MCSS Member	0.44	0.79	2%
CLTM3020066T2	MCSS Discrete	0.64	-0.04	1%
CLTM3020168T2	MCSS Discrete	0.45	0.77	2%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTM3030583T3	MCMS Member	0.43	1.07	1%
CLTM3181023T3	Composite - Member	0.48	0.64	2%
CLTM3020058T3	Numeric Discrete	0.10	2.84	3%
CLTM3020169T3	Numeric Discrete	0.16	2.26	4%
CLTM3020173T3	MCMA - Discrete	0.42	0.76	2%
CLTM3030574T3-R	BarPicturegraphMS Member	0.46	0.65	5%
CLTM3030590T2	Composite - Member	0.34	1.29	3%
CLTM3030710T3	InLineChoicelistMS Member	0.33	1.25	5%
CLTM3020175T2	MCSS Discrete	0.44	0.78	2%
CLTM3020203T3	MCSS Discrete	0.34	1.24	3%
CLTM3030497T3-R	Numeric Discrete	0.10	2.50	9%
CLTM3180958T1	MCSS Discrete	0.59	-0.25	4%
CLTM3181018T2	Composite - Discrete	0.48	0.23	3%
CLTM3180887T1	ZoneSS Discrete	0.72	-0.89	6%
CLTM3180889T3	ZoneSS Discrete	0.47	0.22	10%
CLTM3181024T1	MCSS Member	0.57	-0.23	3%
CLTM3180961T2	MCSS Member	0.61	-0.40	5%
CLTM3180890T1	ZoneSS Discrete	0.61	-0.42	8%
CLTM3181020T3	MCMS Discrete	0.42	0.59	5%
CLTM3030501T2-R	MCSS Discrete	0.42	0.47	6%
CLTM3180963T1	Composite - Member	0.58	-0.28	5%
CLTM3180891T2	MCSS Member	0.30	1.01	7%
CLTM3180957T1	MCSS Discrete	0.63	-0.57	3%
CLTM3180884T1	Composite - Member	0.66	-0.60	3%
CLTM3180888T2	MCSS Discrete	0.47	0.16	3%
CLTM3180886T2	Composite - Member	0.29	0.97	0%
CLTM3180962T3	Composite - Member	0.36	0.71	5%
CLTM3180959T1	ZoneSS Discrete	0.54	-0.08	5%
CLTM3180885T2	BarPicturegraphMS Member	0.47	0.20	0%
CLTM3030563T1-R	MCSS Member	0.43	0.45	3%

Table 8.D.9 Item Difficulties and Omit Rate—Mathematics, Grade Four

Item ID	Item Type	p-value	IRT b-value	Omit Rate
CLTM4020255T1	MCSS Discrete	0.79	-1.48	2%
CLTM4030475T1	ZoneMS Discrete	0.77	-1.47	2%
CLTM4030481T1	MCSS Member	0.69	-0.89	1%
CLTM4020246T1	MCSS Discrete	0.68	-0.83	2%
CLTM4020177T1	ZoneMS Discrete	0.62	-0.68	2%
CLTM4020189T1	MCSS Discrete	0.60	-0.44	2%
CLTM4030612T1	ZoneMS Discrete	0.75	-1.44	2%
CLTM4030484T1	InLineChoicelistMS Member	0.46	0.12	7%
CLTM4030482T2	MCSS Member	0.57	-0.30	3%
CLTM4020178T2	InLineChoicelistMS Discrete	0.52	-0.09	7%
CLTM4030490T1	MCSS Member	0.42	-0.22	7%
CLTM4181003T2	ZoneMS Member	0.34	0.32	12%
CLTM4020170T1	MCMA - Discrete	0.45	0.03	4%
CLTM4180848T1	MCSS Member	0.50	-0.57	7%
CLTM4180852T1	ZoneSS Member	0.49	-0.53	10%
CLTM4020252T1	MCSS Discrete	0.53	-0.70	9%
CLTM4020237T1	MCSS Discrete	0.52	-0.64	10%
CLTM4020231T1	ZoneMS Discrete	0.45	-0.27	10%
CLTM4030613T2	InLineChoicelistMS Member	0.45	-0.39	18%
CLTM4030650T1	InLineChoicelistMS Member	0.64	-0.67	9%
CLTM4180850T2	MCSS Member	0.28	0.40	11%
CLTM4180854T2	MCSS Member	0.31	0.28	12%
CLTM4030494T2	Composite - Member	0.42	-0.24	15%
CLTM4020219T1	MCSS Discrete	0.46	-0.39	10%
CLTM4030476T2	MatchMS Member	0.35	-0.14	21%
CLTM4020253T2	MCSS Discrete	0.38	0.65	2%
CLTM4020247T2	MCSS Discrete	0.48	0.23	2%
CLTM4030668T1	MCSS Member	0.40	0.58	2%
CLTM4020244T2	MCSS Discrete	0.26	1.40	1%
CLTM4020250T2	ZoneMS Discrete	0.52	0.04	3%
CLTM4180853T2	MCSS Member	0.27	1.20	2%
CLTM4030616T2-R	MCSS Discrete	0.42	0.51	2%
CLTM4030479T2	Composite - Member	0.41	0.46	3%
CLTM4020230T3	ZoneMS Discrete	0.45	0.55	3%
CLTM4020238T2	MCSS Discrete	0.35	0.78	3%
CLTM4020221T3	MCSS Discrete	0.42	0.50	3%
CLTM4020212T3	ZoneMS Discrete	0.42	0.58	3%
CLTM4180849T2	MCSS Member	0.56	-0.10	2%
CLTM4030491T2	MCSS Member	0.44	1.02	0%
CLTM4020239T3	MCSS Discrete	0.39	1.23	1%
CLTM4030669T2	MCSS Member	0.42	1.09	0%
CLTM4181004T3	Composite - Discrete	0.33	1.50	1%
CLTM4020190T2	MCSS Discrete	0.52	0.68	1%

Item ID	Item Type	p-value	IRT b-value	Omit Rate
CLTM4020233T3	MCMA - Discrete	0.47	0.84	1%
CLTM4030617T3-R	MCSS Discrete	0.49	0.78	2%
CLTM4030492T3-R	MCSS Discrete	0.48	0.86	1%
CLTM4020224T3	InLineChoicelistMS Discrete	0.31	1.76	1%
CLTM4030672T2	ZoneMS Discrete	0.55	0.32	1%
CLTM4020194T3	MCSS Discrete	0.43	1.05	2%
CLTM4020229T2	InLineChoicelistMS Discrete	0.53	0.60	2%
CLTM4020245T3	MCSS Discrete	0.47	0.87	1%
CLTM4180855T3	Numeric Member	0.04	3.35	6%
CLTM4181000T1	ZoneSS Member	0.46	0.21	5%
CLTM4181010T2	Composite - Member	0.33	0.70	5%
CLTM4180857T2	ZoneSS Discrete	0.59	-0.39	5%
CLTM4180851T3	MCSS Member	0.15	1.81	5%
CLTM4181002T1	ZoneMS Discrete	0.69	-1.18	3%
CLTM4180858T2	MatchSS Discrete	0.56	-0.33	4%
CLTM4181027T2	BarPicturegraphMS Member	0.53	-0.13	8%
CLTM4181035T3	MCSS Discrete	0.43	0.32	5%
CLTM4181032T2	Composite - Member	0.36	0.68	6%
CLTM4181005T1	Composite - Member	0.58	-0.35	3%
CLTM4030649T3-R	MCSS Discrete	0.40	0.42	7%
CLTM4030652T3-R	Composite - Discrete	0.40	0.44	6%
CLTM4181031T1	Composite - Discrete	0.45	0.23	4%
CLTM4030648T2-R	MCSS Member	0.22	1.35	5%
CLTM4181006T2	Composite - Member	0.31	1.00	5%
CLTM4030670T3-R	MCSS Discrete	0.22	1.49	3%
CLTM4181030T1	MatchMS Discrete	0.48	0.10	5%
CLTM4181009T2	Composite - Member	0.39	0.56	3%
CLTM4030673T3-R	ZoneMS Discrete	0.49	0.13	3%

Table 8.D.10 Item Difficulties and Omit Rate—Mathematics, Grade Five

Item ID	Item Type	p-value	IRT b-value	Omit Rate
CLTM5030609T1	MCSS Member	0.80	-1.46	1%
CLTM5020180T1	MCSS Discrete	0.77	-1.28	2%
CLTM5020338T1	ZoneMS Discrete	0.72	-1.01	1%
CLTM5030557T1	MCSS Member	0.66	-0.66	1%
CLTM5030458T1	ZoneMS Discrete	0.63	-0.54	1%
CLTM5020184T2	MCMA - Discrete	0.47	0.18	2%
CLTM5020268T2	ZoneMS Discrete	0.42	0.44	7%
CLTM5030456T2	ZoneSS Member	0.34	0.79	10%
CLTM5020258T1	MCSS Discrete	0.53	-0.03	3%
CLTM5020352T2	MCMA - Discrete	0.63	-0.29	2%
CLTM5030463T1	Composite - Member	0.43	-0.31	8%
CLTM5180906T2	MCSS Member	0.27	0.48	11%
CLTM5030676T1	ZoneMS Member	0.40	0.02	12%
CLTM5020165T1	MCSS Discrete	0.45	-0.40	10%
CLTM5020404T1	MCSS Discrete	0.51	-0.22	4%
CLTM5020357T1	ZoneMS Discrete	0.44	-0.31	14%
CLTM5020354T1	MCSS Discrete	0.45	-0.39	10%
CLTM5180907T2	MCSS Member	0.35	0.07	11%
CLTM5020183T1	ZoneMS Discrete	0.49	-0.56	14%
CLTM5020341T2	MCMA - Discrete	0.26	0.14	9%
CLTM5020262T2	MCSS Discrete	0.25	0.60	13%
CLTM5020345T1	MCSS Discrete	0.44	-0.32	10%
CLTM5181015T2	Composite - Member	0.27	0.32	11%
CLTM5030707T1-R	MCMA - Member	0.30	-0.04	12%
CLTM5030610T2	MCSS Member	0.38	-0.06	13%
CLTM5030561T2-R	InLineChoicelistSS Member	0.36	0.59	2%
CLTM5030465T3	ZoneMS Member	0.57	-0.50	3%
CLTM5030464T2	InLineChoicelistMS Member	0.52	-0.08	3%
CLTM5020215T3	Graph Discrete	0.15	1.79	9%
CLTM5020358T2	MCMA - Discrete	0.39	0.31	3%
CLTM5030576T2	Composite - Member	0.47	0.15	3%
CLTM5180968T2	InLineChoicelistSS Member	0.21	1.36	3%
CLTM5020265T2	MCSS Discrete	0.42	0.35	3%
CLTM5020355T2	MCSS Discrete	0.29	0.96	3%
CLTM5020361T2	MCSS Discrete	0.39	0.49	3%
CLTM5030575T1	Composite - Member	0.49	0.07	3%
CLTM5180912T2	MCSS Member	0.47	0.12	3%
CLTM5020359T3	ZoneMS Discrete	0.55	-0.19	3%
CLTM5030607T2	Composite - Member	0.51	-0.02	3%
CLTM5030708T2	Composite - Member	0.48	0.73	1%
CLTM5181014T3	MCSS Member	0.46	0.84	1%
CLTM5020346T2	MCSS Discrete	0.46	0.84	1%
CLTM5020347T3	MCSS Discrete	0.36	1.25	1%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTM5020343T2	InLineChoicelistSS Discrete	0.28	1.68	2%
CLTM5020181T2	MCSS Discrete	0.39	1.12	1%
CLTM5020356T3	MCSS Discrete	0.46	0.84	1%
CLTM5030577T3	Composite - Member	0.54	0.51	1%
CLTM5020344T3	MCSS Discrete	0.41	1.07	2%
CLTM5030678T3	MatchMS Member	0.52	0.61	1%
CLTM5030709T3	Composite - Member	0.57	0.39	2%
CLTM5020259T2	MCSS Discrete	0.46	0.85	1%
CLTM5180915T3	Composite - Member	0.26	1.77	1%
CLTM5020266T3	Numeric Discrete	0.23	1.93	2%
CLTM5030462T2	Composite - Member	0.42	1.03	3%
CLTM5180909T2	Composite - Member	0.28	1.13	4%
CLTM5030558T2-R	MCSS Discrete	0.25	1.33	3%
CLTM5180971T1	Composite - Discrete	0.56	-0.11	3%
CLTM5180905T1	MCSS Member	0.52	0.04	4%
CLTM5020349T2-R	MCSS Discrete	0.29	1.00	2%
CLTM5181016T3	Composite - Member	0.30	0.99	2%
CLTM5180970T1	ZoneSS Member	0.46	0.19	4%
CLTM5180821T2	Composite - Member	0.31	0.86	3%
CLTM5180818T1	ZoneMS Discrete	0.73	-0.99	1%
CLTM5030559T3-R	Numeric Discrete	0.09	2.52	14%
CLTM5180908T2	Composite - Member	0.32	0.79	4%
CLTM5030455T1-R	MCSS Member	0.69	-0.85	4%
CLTM5180911T1	ZoneSS Member	0.66	-0.60	6%
CLTM5180824T3	InLineChoicelistSS Member	0.45	0.32	6%
CLTM5180819T2	Composite - Member	0.35	0.70	5%
CLTM5180910T1	MCSS Member	0.56	-0.18	3%
CLTM5180904T1	MCSS Member	0.50	0.08	4%
CLTM5180967T2	ZoneSS Discrete	0.29	1.07	5%
CLTM5180972T3	InLineChoicelistMS Member	0.33	0.68	4%
CLTM5180822T1	ZoneMS Member	0.57	-0.30	3%

Table 8.D.11 Item Difficulties and Omit Rate—Mathematics, Grade Six

Item ID	Item Type	p-value	IRT b-value	Omit Rate
CLTM6020284T1	MCSS Discrete	0.67	-0.67	2%
CLTM6020198T1	MCSS Discrete	0.64	-0.56	2%
CLTM6020293T1	ZoneSS Discrete	0.63	-0.50	2%
CLTM6030685T1	MCSS Member	0.67	-0.70	2%
CLTM6020427T1	MCSS Discrete	0.63	-0.51	2%
CLTM6020287T1	MCMA - Discrete	0.63	-0.30	2%
CLTM6020314T1	MCMA - Discrete	0.45	0.23	1%
CLTM6030683T2	InLineChoicelistSS Discrete	0.52	0.00	3%
CLTM6020285T2	MCSS Discrete	0.55	-0.12	2%
CLTM6020364T2	MCMA - Discrete	0.42	0.34	2%
CLTM6180894T2	InLineChoicelistSS Discrete	0.41	0.46	3%
CLTM6030618T1	MCMA - Member	0.50	-0.30	4%
CLTM6030621T1	MCSS Member	0.51	-0.34	5%
CLTM6020320T1	MCSS Discrete	0.42	0.05	5%
CLTM6030598T1	MCSS Member	0.37	0.25	6%
CLTM6030472T1	MCSS Member	0.46	-0.16	5%
CLTM6020051T2	MCMA - Discrete	0.50	0.09	2%
CLTM6020433T2	MCMA - Discrete	0.37	0.05	4%
CLTM6030682T1	MCSS Member	0.54	-0.46	5%
CLTM6030599T2	MatchSS Member	0.49	0.14	6%
CLTM6020291T2	MCMA - Discrete	0.43	-0.12	5%
CLTM6020097T1	ZoneMS Discrete	0.44	0.19	6%
CLTM6020425T2	MCSS Discrete	0.37	0.25	6%
CLTM6030469T1	InLineChoicelistMS Member	0.50	-0.28	7%
CLTM6020037T1	MCSS Discrete	0.50	-0.32	7%
CLTM6030637T3	MCSS Member	0.46	0.33	2%
CLTM6030686T2-R	MCSS Discrete	0.54	-0.02	1%
CLTM6030602T2	InLineChoicelistMS Member	0.35	0.74	2%
CLTM6020094T1	ZoneMS Discrete	0.42	0.55	1%
CLTM6180988T2	InLineChoicelistSS Discrete	0.56	-0.10	2%
CLTM6020200T3	ZoneSS Discrete	0.51	0.09	4%
CLTM6180989T2	MCSS Discrete	0.53	0.01	2%
CLTM6030473T2	MCSS Discrete	0.30	1.02	2%
CLTM6030619T2	InLineChoicelistMS Member	0.33	0.80	2%
CLTM6020367T2	ZoneMS Discrete	0.33	0.93	2%
CLTM6030635T1	MCSS Member	0.51	0.09	3%
CLTM6020039T3	InLineChoicelistMS Discrete	0.42	0.99	1%
CLTM6020199T2	MCSS Discrete	0.65	0.03	1%
CLTM6030622T2	MCSS Member	0.61	0.21	0%
CLTM6020099T3	ZoneSS Discrete	0.20	2.14	3%
CLTM6020368T3	InLineChoicelistMS Discrete	0.47	0.79	2%
CLTM6020434T3	ZoneMS Discrete	0.55	0.55	1%
CLTM6020295T3	Numeric Discrete	0.40	1.10	2%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTM6030687T3	ZoneSS Member	0.47	0.80	4%
CLTM6030603T3	InLineChoicelistMS Member	0.48	0.75	1%
CLTM6020322T3	MCSS Discrete	0.28	1.66	1%
CLTM6020041T2	MCSS Discrete	0.54	0.53	1%
CLTM6020289T3	MCMA - Discrete	0.48	0.76	1%
CLTM6180981T1	Composite - Discrete	0.64	-0.38	6%
CLTM6180893T2	MCSS Discrete	0.53	-0.02	2%
CLTM6180898T1	MCSS Member	0.71	-0.83	2%
CLTM6180901T3	Composite - Discrete	0.53	-0.01	2%
CLTM6180832T2	MCSS Discrete	0.52	-0.02	3%
CLTM6180835T2	MCSS Discrete	0.49	0.10	2%
CLTM6180899T2	Composite - Member	0.28	1.11	1%
CLTM6180836T2	MCSS Discrete	0.43	0.32	2%
CLTM6180986T1	MCSS Discrete	0.61	-0.38	2%
CLTM6180979T2	Composite - Member	0.32	0.86	2%
CLTM6180897T2	ZoneSS Discrete	0.42	0.46	27%
CLTM6180903T2	MCSS Member	0.39	0.59	3%
CLTM6030636T2-R	MCSS Discrete	0.47	0.23	2%
CLTM6180896T1	MCSS Discrete	0.63	-0.48	2%
CLTM6180985T2	MatchSS Discrete	0.34	0.78	8%
CLTM6180987T1	Composite - Discrete	0.52	-0.02	2%
CLTM6180983T1	Composite - Member	0.50	0.08	2%
CLTM6180978T3	ZoneSS Discrete	0.41	0.45	8%
CLTM6180984T1	MCSS Member	0.65	-0.57	3%
CLTM6180980T2	Composite - Discrete	0.57	-0.21	2%

Table 8.D.12 Item Difficulties and Omit Rate—Mathematics, Grade Seven

Item ID	Item Type	p-value	IRT b-value	Omit Rate
CLTM7020050T1	MCSS Discrete	0.80	-1.44	1%
CLTM7030688T1	MCSS Member	0.68	-0.80	1%
CLTM7020085T1	MCSS Discrete	0.65	-0.65	2%
CLTM7020280T1	MCSS Discrete	0.74	-1.10	1%
CLTM7020047T1	MCMA - Discrete	0.68	-0.51	1%
CLTM7020091T1	ZoneMS Discrete	0.71	-0.56	5%
CLTM7020299T1	MCSS Discrete	0.64	-0.61	2%
CLTM7020089T2	ZoneMS Discrete	0.49	0.07	3%
CLTM7020048T2	ZoneMS Discrete	0.54	-0.11	3%
CLTM7020092T2	ZoneMS Discrete	0.67	-0.45	5%
CLTM7020034T1	MCSS Discrete	0.53	-0.78	9%
CLTM7030522T2	ZoneMS Member	0.41	0.27	8%
CLTM7030691T1	MCSS Member	0.49	-0.60	10%
CLTM7020323T1	MCSS Discrete	0.35	-0.01	10%
CLTM7020329T1	ZoneMS Discrete	0.33	-0.21	17%
CLTM7020296T1	MCSS Discrete	0.47	-0.53	8%
CLTM7020369T1	MCSS Discrete	0.51	-0.72	10%
CLTM7020419T2	InLineChoicelistMS Discrete	0.35	0.62	7%
CLTM7020327T2	MCMA - Discrete	0.35	-0.20	11%
CLTM7030515T1	InLineChoicelistMS Member	0.43	-0.40	15%
CLTM7020086T2	MCSS Discrete	0.37	-0.11	14%
CLTM7030512T1	InLineChoicelistMS Member	0.35	-0.10	19%
CLTM7030585T2	ZoneMS Member	0.44	0.62	5%
CLTM7030518T1	MCMA - Member	0.44	-0.50	13%
CLTM7020330T2	ZoneMS Discrete	0.25	0.09	19%
CLTM7030653T1	MCSS Discrete	0.50	-0.18	2%
CLTM7030509T1	InLineChoicelistMS Member	0.56	-0.35	3%
CLTM7020297T2	InLineChoicelistSS Discrete	0.39	0.31	5%
CLTM7020418T1	MCMA - Discrete	0.45	0.01	3%
CLTM7030516T2	InLineChoicelistMS Member	0.34	0.49	4%
CLTM7030519T2	InLineChoicelistMS Member	0.34	0.83	2%
CLTM7020300T2	MCSS Discrete	0.31	0.69	6%
CLTM7020328T3	ZoneMS Discrete	0.46	0.07	5%
CLTM7020282T2	InLineChoicelistMS Discrete	0.34	0.42	8%
CLTM7020298T3	InLineChoicelistSS Discrete	0.40	0.60	5%
CLTM7030510T2	InLineChoicelistMS Member	0.41	0.17	6%
CLTM7020451T3	MCSS Discrete	0.23	1.11	7%
CLTM7020324T2	MCSS Discrete	0.33	0.57	5%
CLTM7020093T3	InLineChoicelistMS Discrete	0.39	0.88	1%
CLTM7030705T2	MCSS Member	0.37	1.06	2%
CLTM7020373T2	InLineChoicelistMS Discrete	0.47	0.61	2%
CLTM7020423T3	MCSS Discrete	0.35	1.16	3%
CLTM7030589T3	InLineChoicelistSS Member	0.37	1.04	2%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTM7020371T3	MCSS Discrete	0.35	1.14	2%
CLTM7020035T2	MCSS Discrete	0.56	0.21	2%
CLTM7030514T3	InLineChoicelistMS Discrete	0.47	0.61	3%
CLTM7030586T3	InLineChoicelistMS Member	0.39	0.92	3%
CLTM7020331T3	InLineChoicelistMS Discrete	0.46	0.69	3%
CLTM7020036T3	Numeric Discrete	0.14	2.42	4%
CLTM7180846T3	ZoneMS Member	0.62	-0.65	3%
CLTM7030587T1-R	MCSS Discrete	0.76	-1.23	3%
CLTM7180937T1	Composite - Discrete	0.49	0.10	4%
CLTM7180994T2	Composite - Member	0.61	-0.39	2%
CLTM7030704T1-R	MCSS Member	0.66	-0.67	3%
CLTM7180997T2	Composite - Member	0.26	1.05	3%
CLTM7180996T2	MCSS Member	0.47	0.20	2%
CLTM7180927T1	Composite - Member	0.56	-0.16	3%
CLTM7180932T2	MatchMS Member	0.52	-0.04	4%
CLTM7030696T3-R	Numeric Member	0.11	2.25	12%
CLTM7180951T1	Composite - Discrete	0.54	-0.12	4%
CLTM7180993T1	Composite - Member	0.57	-0.19	4%
CLTM7180933T2	Composite - Member	0.44	0.19	2%
CLTM7180928T1	MCSS Member	0.61	-0.49	3%
CLTM7180953T2	ZoneMS Discrete	0.44	0.50	5%
CLTM7030511T3-R	ZoneMS Member	0.48	0.12	4%
CLTM7180949T1	InLineChoicelistMS Discrete	0.58	-0.30	4%
CLTM7180935T2	Numeric Member	0.11	2.34	6%
CLTM7180952T2	ZoneMS Discrete	0.52	-0.14	5%
CLTM7180995T3	Composite - Member	0.45	0.24	3%

Table 8.D.13 Item Difficulties and Omit Rate—Mathematics, Grade Eight

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTM8020332T1	MCSS Discrete	0.81	-1.51	2%
CLTM8030638T1	MCSS Discrete	0.76	-1.16	1%
CLTM8020302T1	MCSS Discrete	0.70	-0.86	1%
CLTM8020028T1	InLineChoicelistMS Discrete	0.69	-0.81	2%
CLTM8030530T1	MCMA - Member	0.52	0.01	2%
CLTM8030536T2	InLineChoicelistMS Member	0.49	0.11	3%
CLTM8020305T1	MCMA - Discrete	0.46	0.18	3%
CLTM8020416T2	InLineChoicelistMS Discrete	0.38	0.60	3%
CLTM8020277T1	MCMA - Discrete	0.52	0.02	3%
CLTM8030539T2	InLineChoicelistMS Member	0.51	0.04	3%
CLTM8020079T1	MCSS Discrete	0.55	-0.78	8%
CLTM8020278T1	MCSS Discrete	0.51	-0.60	9%
CLTM8030535T1	MCMA - Member	0.52	-0.60	9%
CLTM8030528T2	InLineChoicelistMS Member	0.49	-0.14	6%
CLTM8030697T1	MCSS Discrete	0.45	-0.36	10%
CLTM8030659T1	MCSS Member	0.51	-0.62	9%
CLTM8180880T2	MCSS Member	0.25	0.57	10%
CLTM8020378T1	MCMA - Discrete	0.45	-0.42	9%
CLTM8180817T2	ZoneSS Discrete	0.48	0.16	9%
CLTM8020412T1	MCSS Discrete	0.52	-0.63	9%
CLTM8020388T1	MCSS Discrete	0.46	-0.38	8%
CLTM8180975T2	MCSS Discrete	0.59	-0.34	3%
CLTM8030538T1	MCMA - Member	0.47	-0.49	12%
CLTM8020029T2	InLineChoicelistMS Discrete	0.43	-0.31	17%
CLTM8180860T1	ZoneSS Discrete	0.39	-0.10	20%
CLTM8030527T1	MCMA - Member	0.52	-0.13	1%
CLTM8030624T1	ZoneSS Discrete	0.53	-0.19	11%
CLTM8020390T3	Numeric Discrete	0.15	1.71	4%
CLTM8020026T2	MCSS Discrete	0.43	0.25	2%
CLTM8020379T2	ZoneMS Discrete	0.21	1.26	14%
CLTM8030663T2	MCSS Member	0.35	0.59	3%
CLTM8020083T2	InLineChoicelistSS Discrete	0.43	0.24	4%
CLTM8030698T2	MCSS Member	0.48	0.26	2%
CLTM8020030T3	InLineChoicelistMS Discrete	0.38	0.39	3%
CLTM8020415T1	MCMA - Discrete	0.53	-0.13	3%
CLTM8020084T3	InLineChoicelistSS Discrete	0.42	0.28	5%
CLTM8020080T2	InLineChoicelistMS Discrete	0.37	0.53	5%
CLTM8020307T3	InLineChoicelistMS Discrete	0.53	0.41	1%
CLTM8020027T3	MCSS Discrete	0.41	0.88	1%
CLTM8020046T2	ZoneMS Discrete	0.23	1.77	4%
CLTM8020393T3	InLineChoicelistMS Discrete	0.31	1.34	2%
CLTM8020279T3	MCSS Discrete	0.54	0.33	1%
CLTM8030540T3	InLineChoicelistMS Member	0.41	0.87	2%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTM8020392T2	InLineChoicelistMS Discrete	0.43	0.80	3%
CLTM8020453T3	ZoneSS Discrete	0.44	0.75	2%
CLTM8020417T3	InLineChoicelistMS Discrete	0.44	0.82	2%
CLTM8020069T2	ZoneSS Discrete	0.31	1.36	3%
CLTM8020380T3	ZoneMS Discrete	0.30	1.39	5%
CLTM8030537T3	InLineChoicelistMS Member	0.48	0.61	2%
CLTM8180881T3	ZoneSS Member	0.40	0.50	16%
CLTM8180805T2	MCSS Discrete	0.74	-1.07	2%
CLTM8180862T1	InLineChoicelistMS Discrete	0.54	-0.11	3%
CLTM8180877T2	MCSS Member	0.44	0.31	4%
CLTM8030524T1-R	ZoneSS Discrete	0.67	-0.67	20%
CLTM8180815T2	MatchSS Member	0.71	-0.86	5%
CLTM8180865T2	Composite - Member	0.36	0.67	2%
CLTM8180804T3	MCMS Member	0.61	-0.62	2%
CLTM8180802T1	Composite - Member	0.61	-0.42	2%
CLTM8030660T2-R	MCSS Discrete	0.43	0.37	1%
CLTM8180808T3	Composite - Member	0.34	0.73	2%
CLTM8030625T2-R	MCSS Discrete	0.34	0.79	4%
CLTM8180874T1	MatchSS Discrete	0.58	-0.33	6%
CLTM8030661T3-R	ZoneMS Discrete	0.50	0.05	2%
CLTM8180867T2	Composite - Member	0.30	0.84	3%
CLTM8180816T1	MCSS Discrete	0.68	-0.77	3%
CLTM8180814T1	MCSS Member	0.79	-1.31	2%
CLTM8180863T2	Composite - Member	0.37	0.62	2%
CLTM8180866T1	InLineChoicelistMS Member	0.68	-0.62	2%
CLTM8180869T3	Numeric Discrete	0.29	1.07	5%

Table 8.D.14 Item Difficulties and Omit Rate—Mathematics, Grade Eleven

Item ID	Item Type	p-value	IRT b-value	Omit Rate
CLTMH020019T1	MCSS Discrete	0.74	-1.18	1%
CLTMH020272T1	MCSS Discrete	0.72	-1.03	1%
CLTMH020447T1	ZoneSS Discrete	0.61	-0.51	7%
CLTMH030553T1	MCSS Discrete	0.70	-0.95	2%
CLTMH020406T1	MCMA - Discrete	0.50	0.00	1%
CLTMH030642T2	InLineChoicelistMS Member	0.51	-0.06	6%
CLTMH020397T1	MCMA - Discrete	0.51	-0.04	3%
CLTMH030628T2	MCSS Member	0.52	-0.09	3%
CLTMH020076T1	ZoneSS Discrete	0.51	-0.03	5%
CLTMH030555T2	InLineChoicelistMS Member	0.49	0.03	6%
CLTMH020022T1	MCSS Discrete	0.51	-0.63	4%
CLTMH020043T1	ZoneSS Discrete	0.35	0.08	9%
CLTMH030645T2	InLineChoicelistMS Member	0.74	-0.80	5%
CLTMH030549T1	MCSS Member	0.43	-0.28	9%
CLTMH020398T2	ZoneMS Discrete	0.54	-0.81	8%
CLTMH030644T1	MatchMS Member	0.37	-0.24	15%
CLTMH030630T1	ZoneSS Discrete	0.35	0.02	15%
CLTMH020068T1	MCSS Discrete	0.58	-0.64	4%
CLTMH030665T1	MatchMS Member	0.40	-0.32	13%
CLTMH030551T2	ZoneMS Member	0.58	-1.00	9%
CLTMH180926T1	MCSS Member	0.47	-0.45	8%
CLTMH020020T2	MCSS Discrete	0.51	-0.62	10%
CLTMH030666T2	InLineChoicelistMS Member	0.63	-0.67	8%
CLTMH020336T2	ZoneMS Discrete	0.35	0.07	11%
CLTMH020381T1	MCMA - Discrete	0.40	-0.30	10%
CLTMH030641T1	MCMA - Member	0.53	-0.07	1%
CLTMH020045T3	MCSS Discrete	0.48	0.07	2%
CLTMH020402T2	InLineChoicelistMS Discrete	0.47	0.15	3%
CLTMH030542T2	ZoneMS Discrete	0.43	0.31	3%
CLTMH020044T2	MCSS Discrete	0.29	0.95	2%
CLTMH020400T2	MCSS Discrete	0.34	0.70	2%
CLTMH020385T2	MCMA - Discrete	0.45	0.13	3%
CLTMH020270T2	MCSS Discrete	0.37	0.59	2%
CLTMH020077T2	ZoneSS Discrete	0.36	0.97	6%
CLTMH030552T3	InLineChoicelistMS Member	0.55	-0.18	4%
CLTMH020337T3	MCSS Discrete	0.56	-0.26	2%
CLTMH030712T1	ZoneSS Member	0.44	0.24	5%
CLTMH020023T2	MCSS Discrete	0.62	0.18	0%
CLTMH020313T3	MCSS Discrete	0.58	0.37	1%
CLTMH030646T3	BarPicturegraphMS Member	0.83	-0.40	1%
CLTMH020078T3	ZoneSS Discrete	0.33	1.48	3%
CLTMH020382T2	MCMA - Discrete	0.40	0.97	1%
CLTMH030543T3	MCSS Discrete	0.53	0.58	0%

Item ID	Item Type	<i>p</i> -value	IRT <i>b</i> -value	Omit Rate
CLTMH030667T3	BarPicturegraphMS Member	0.84	-0.46	1%
CLTMH020401T3	ZoneSS Discrete	0.49	0.74	5%
CLTMH030714T3	MCSS Discrete	0.32	1.55	1%
CLTMH020407T2	MCMA - Discrete	0.50	0.69	1%
CLTMH030631T2	MCSS Discrete	0.36	1.30	1%
CLTMH020446T3	Numeric Discrete	0.27	1.80	2%
CLTMH030643T3	InLineChoicelistMS Member	0.44	0.94	1%
CLTMH180831T3	Numeric Discrete	0.19	1.76	8%
CLTMH180826T1	MCSS Member	0.70	-0.93	3%
CLTMH180919T2	Composite - Member	0.55	-0.17	4%
CLTMH180924T2	MCSS Member	0.53	-0.08	3%
CLTMH180917T3	Composite - Member	0.10	1.83	6%
CLTMH180813T1	MCSS Discrete	0.51	0.01	2%
CLTMH180828T2	InLineChoicelistSS Member	0.54	-0.17	5%
CLTMH180812T2	MCSS Member	0.27	1.20	4%
CLTMH180947T3	Composite - Member	0.23	1.35	5%
CLTMH180830T2	InLineChoicelistSS Member	0.62	-0.53	4%
CLTMH180811T1	MCMA - Member	0.61	-0.31	3%
CLTMH030713T2-R	MCSS Discrete	0.27	1.11	3%
CLTMH180809T3	BarPicturegraphMS Member	0.54	-0.12	9%
CLTMH180976T2	MCSS Member	0.65	-0.72	4%
CLTMH180827T2	MCSS Member	0.56	-0.25	4%
CLTMH180940T2	ZoneMS Discrete	0.70	-0.93	3%
CLTMH030634T3-R	Numeric Discrete	0.16	1.79	5%
CLTMH180921T1	MatchMS Member	0.50	-0.03	8%
CLTMH030633T2-R	MCSS Member	0.43	0.28	4%
CLTMH180943T2	Composite - Member	0.35	0.66	3%

Table 8.D.15 Average Number of Item Omits for Each Test Stage—ELA

Test	Form ID	Stage 1 (Items 1 through 4)	Stage 1B (Items 5 through 14)	Stage 2 (15 items)
Grade 3	Early Exit	0.98	2.72	NA
Grade 3	Easy Pathway	0.34	0.58	1.51
Grade 3	Moderate Pathway	0.15	0.16	0.36
Grade 3	Hard Pathway	0.07	0.06	0.30
Grade 4	Early Exit	0.58	2.74	NA
Grade 4	Easy Pathway	0.19	0.75	1.26
Grade 4	Moderate Pathway	0.08	0.18	0.30
Grade 4	Hard Pathway	0.01	0.06	0.18
Grade 5	Early Exit	0.70	2.23	NA
Grade 5	Easy Pathway	0.14	0.60	1.09
Grade 5	Moderate Pathway	0.03	0.16	0.37
Grade 5	Hard Pathway	0.00	0.06	0.19
Grade 6	Early Exit	0.23	1.39	NA
Grade 6	Easy Pathway	0.38	1.58	2.62
Grade 6	Moderate Pathway	0.11	0.28	0.80
Grade 6	Hard Pathway	0.03	0.07	0.29
Grade 7	Early Exit	0.34	2.31	NA
Grade 7	Easy Pathway	0.11	0.69	1.34
Grade 7	Moderate Pathway	0.04	0.13	0.35
Grade 7	Hard Pathway	0.01	0.05	0.29
Grade 8	Early Exit	0.57	2.16	NA
Grade 8	Easy Pathway	0.15	0.49	0.90
Grade 8	Moderate Pathway	0.04	0.14	0.32
Grade 8	Hard Pathway	0.00	0.04	0.14
Grade 11	Early Exit	0.44	1.83	NA
Grade 11	Easy Pathway	0.14	0.63	1.40
Grade 11	Moderate Pathway	0.02	0.11	0.34
Grade 11	Hard Pathway	0.01	0.03	0.19

Table 8.D.16 Average Number of Item Omits for Each Test Stage—Mathematics

Test	Form ID	Stage 1 (Items 1 through 4)	Stage 1B (Items 5 through 14)	Stage 2 (15 items)
Grade 3	Early Exit	0.46	2.45	NA
Grade 3	Easy Pathway	0.23	1.35	2.47
Grade 3	Moderate Pathway	0.05	0.33	0.73
Grade 3	Hard Pathway	0.01	0.10	0.36
Grade 4	Early Exit	0.39	1.55	NA
Grade 4	Easy Pathway	0.16	1.02	1.81
Grade 4	Moderate Pathway	0.02	0.10	0.34
Grade 4	Hard Pathway	0.00	0.02	0.17
Grade 5	Early Exit	0.45	1.84	NA
Grade 5	Easy Pathway	0.16	1.12	1.67
Grade 5	Moderate Pathway	0.02	0.26	0.48
Grade 5	Hard Pathway	0.01	0.09	0.21
Grade 6	Early Exit	0.45	1.80	NA
Grade 6	Easy Pathway	0.13	0.44	0.89
Grade 6	Moderate Pathway	0.02	0.15	0.31
Grade 6	Hard Pathway	0.01	0.10	0.24
Grade 7	Early Exit	0.39	2.31	NA
Grade 7	Easy Pathway	0.16	0.98	2.01
Grade 7	Moderate Pathway	0.04	0.28	0.78
Grade 7	Hard Pathway	0.01	0.07	0.35
Grade 8	Early Exit	0.30	1.91	NA
Grade 8	Easy Pathway	0.22	1.25	1.74
Grade 8	Moderate Pathway	0.03	0.22	0.71
Grade 8	Hard Pathway	0.01	0.07	0.33
Grade 11	Early Exit	0.48	2.50	NA
Grade 11	Easy Pathway	0.24	0.94	1.54
Grade 11	Moderate Pathway	0.05	0.14	0.44
Grade 11	Hard Pathway	0.01	0.04	0.22

Table 8.D.17 Total Number of Items Answered by Student Achievement Level—ELA, Grades Three and Four

Total Number Answered	Grade Three Level 1—Alternate	Grade Three Level 2—Alternate	Grade Three Level 3—Alternate	Grade Four Level 1—Alternate	Grade Four Level 2—Alternate	Grade Four Level 3—Alternate
29	625	945	792	1,074	1,037	812
28	299	290	220	370	257	122
27	151	99	49	157	78	30
26	101	39	19	69	27	8
25	74	23	10	48	11	1
24	47	10	NA	36	4	2
23	34	10	NA	33	4	1
22	32	2	NA	20	NA	NA
21	25	NA	NA	16	NA	NA
20	15	1	NA	12	NA	NA
19	18	NA	NA	11	1	NA
18	15	NA	NA	13	NA	NA
17	9	NA	NA	7	NA	NA
16	12	NA	NA	8	NA	NA
15	9	NA	NA	4	NA	NA
14	34	NA	NA	26	NA	NA
13	14	NA	NA	11	NA	NA
12	13	NA	NA	10	NA	NA
11	13	NA	NA	9	NA	NA
10	11	NA	NA	7	NA	NA
9	13	NA	NA	14	NA	NA
8	12	NA	NA	16	NA	NA
7	8	NA	NA	10	NA	NA
6	10	NA	NA	13	NA	NA
5	7	NA	NA	19	NA	NA
4	17	NA	NA	47	NA	NA

Table 8.D.18 Total Number of Items Answered by Student Achievement Level—ELA, Grades Five and Six

Total Number Answered	Grade Five Level 1— Alternate	Grade Five Level 2— Alternate	Grade Five Level 3— Alternate	Grade Six Level 1— Alternate	Grade Six Level 2— Alternate	Grade Six Level 3— Alternate
29	1,037	1,247	868	1,110	1,432	517
28	291	257	95	341	291	57
27	129	65	20	161	84	14
26	54	19	5	83	29	3
25	52	13	NA	46	12	1
24	31	2	NA	31	12	1
23	28	3	NA	30	3	NA
22	15	1	NA	39	2	NA
21	26	NA	NA	21	2	1
20	12	NA	NA	33	2	NA
19	18	NA	NA	17	1	NA
18	15	NA	NA	14	NA	NA
17	5	NA	NA	8	NA	NA
16	6	NA	NA	9	NA	NA
15	3	NA	NA	11	NA	NA
14	29	NA	NA	23	NA	NA
13	6	NA	NA	9	NA	NA
12	5	NA	NA	5	NA	NA
11	8	NA	NA	10	NA	NA
10	14	NA	NA	7	NA	NA
9	10	NA	NA	7	NA	NA
8	5	NA	NA	7	NA	NA
7	10	NA	NA	14	NA	NA
6	6	NA	NA	8	NA	NA
5	7	NA	NA	13	NA	NA
4	48	NA	NA	58	NA	NA

Table 8.D.19 Total Number of Items Answered by Student Achievement Level—ELA, Grades Seven and Eight

Total Number Answered	Grade Seven Level 1—Alternate	Grade Seven Level 2—Alternate	Grade Seven Level 3—Alternate	Grade Eight Level 1—Alternate	Grade Eight Level 2—Alternate	Grade Eight Level 3—Alternate
29	1,191	1,123	836	876	1,614	591
28	335	196	95	248	267	61
27	134	60	18	143	100	17
26	81	33	11	60	25	3
25	50	10	3	38	12	1
24	41	10	NA	34	6	NA
23	19	5	1	23	5	NA
22	22	3	1	18	4	NA
21	14	2	NA	19	4	NA
20	19	1	NA	13	NA	NA
19	14	1	NA	13	1	NA
18	6	NA	NA	4	NA	NA
17	13	1	NA	2	NA	NA
16	8	NA	NA	5	NA	NA
15	12	NA	NA	11	NA	NA
14	27	NA	NA	24	NA	NA
13	7	NA	NA	14	NA	NA
12	8	NA	NA	9	NA	NA
11	14	NA	NA	7	NA	NA
10	9	NA	NA	8	NA	NA
9	8	NA	NA	8	NA	NA
8	5	NA	NA	7	NA	NA
7	17	NA	NA	6	NA	NA
6	14	NA	NA	10	NA	NA
5	13	NA	NA	7	NA	NA
4	66	NA	NA	57	NA	NA

Table 8.D.20 Total Number of Items Answered by Student Achievement Level—ELA, Grade Eleven

Total Number Answered	Level 1— Alternate	Level 2— Alternate	Level 3— Alternate
29	675	1,272	829
28	208	188	98
27	116	49	13
26	59	18	5
25	34	7	NA
24	27	10	2
23	17	3	NA
22	15	4	NA
21	11	2	NA
20	6	2	NA
19	10	NA	NA
18	5	NA	NA
17	5	NA	NA
16	9	1	NA
15	8	NA	NA
14	25	NA	NA
13	5	NA	NA
12	12	NA	NA
11	7	NA	NA
10	8	NA	NA
9	10	NA	NA
8	11	NA	NA
7	8	NA	NA
6	5	NA	NA
5	9	NA	NA
4	32	NA	NA

**Table 8.D.21 Total Number of Items Answered by Student Achievement Level—
Mathematics, Grades Three and Four**

Total Number Answered	Grade Three Level 1— Alternate	Grade Three Level 2— Alternate	Grade Three Level 3— Alternate	Grade Four Level 1— Alternate	Grade Four Level 2— Alternate	Grade Four Level 3— Alternate
29	1,204	1,217	371	1,574	1,253	407
28	327	201	30	324	108	30
27	143	62	5	102	28	2
26	70	17	NA	71	4	NA
25	53	10	NA	51	2	NA
24	27	3	NA	39	2	NA
23	31	NA	1	33	2	NA
22	26	3	NA	28	NA	NA
21	18	NA	NA	28	NA	NA
20	13	1	NA	16	NA	NA
19	11	NA	NA	16	1	NA
18	18	NA	NA	19	NA	NA
17	11	1	NA	15	NA	NA
16	21	NA	NA	16	NA	NA
15	8	NA	NA	10	NA	NA
14	39	NA	NA	32	NA	NA
13	18	NA	NA	17	NA	NA
12	13	NA	NA	10	NA	NA
11	12	NA	NA	9	NA	NA
10	14	NA	NA	12	NA	NA
9	11	NA	NA	19	NA	NA
8	12	NA	NA	7	NA	NA
7	16	NA	NA	17	NA	NA
6	14	NA	NA	14	NA	NA
5	16	NA	NA	11	NA	NA
4	44	NA	NA	42	NA	NA

**Table 8.D.22 Total Number of Items Answered by Student Achievement Level—
Mathematics, Grades Five and Six**

Total Number Answered	Grade Five Level 1— Alternate	Grade Five Level 2— Alternate	Grade Five Level 3— Alternate	Grade Six Level 1— Alternate	Grade Six Level 2— Alternate	Grade Six Level 3— Alternate
29	1,441	1,251	402	1,657	1,150	330
28	389	205	41	407	193	51
27	125	36	9	146	34	7
26	67	10	1	64	11	NA
25	34	3	NA	52	1	NA
24	27	4	NA	31	1	NA
23	17	1	NA	17	NA	NA
22	18	1	NA	18	1	NA
21	20	3	NA	13	1	NA
20	12	1	NA	12	NA	NA
19	14	1	NA	5	NA	NA
18	15	1	NA	4	NA	NA
17	12	NA	NA	6	NA	NA
16	7	NA	NA	6	NA	NA
15	11	1	NA	6	NA	NA
14	27	NA	NA	41	NA	NA
13	17	NA	NA	8	NA	NA
12	12	NA	NA	10	NA	NA
11	10	NA	NA	3	NA	NA
10	8	NA	NA	12	NA	NA
9	11	NA	NA	10	NA	NA
8	10	NA	NA	8	NA	NA
7	18	NA	NA	5	NA	NA
6	17	NA	NA	8	NA	NA
5	10	NA	NA	11	NA	NA
4	53	NA	NA	46	NA	NA

**Table 8.D.23 Total Number of Items Answered by Student Achievement Level—
Mathematics, Grades Seven and Eight**

Total Number Answered	Grade Seven Level 1— Alternate	Grade Seven Level 2— Alternate	Grade Seven Level 3— Alternate	Grade Eight Level 1— Alternate	Grade Eight Level 2— Alternate	Grade Eight Level 3— Alternate
29	1,653	1,310	361	1,329	1,217	313
28	317	118	18	435	206	30
27	126	20	4	179	56	6
26	75	11	1	85	28	1
25	46	5	2	45	11	NA
24	49	2	1	50	5	NA
23	37	1	NA	20	2	NA
22	24	1	NA	19	2	NA
21	22	2	NA	15	1	NA
20	23	NA	NA	15	NA	NA
19	18	1	NA	13	1	NA
18	13	1	NA	12	NA	NA
17	13	NA	NA	7	NA	NA
16	8	NA	NA	15	NA	NA
15	17	NA	NA	13	NA	NA
14	38	NA	NA	22	NA	NA
13	23	NA	NA	6	NA	NA
12	16	NA	NA	10	NA	NA
11	20	NA	NA	7	NA	NA
10	9	NA	NA	2	NA	NA
9	14	NA	NA	NA	NA	NA
8	10	NA	NA	11	NA	NA
7	10	NA	NA	12	NA	NA
6	19	NA	NA	10	NA	NA
5	10	NA	NA	6	NA	NA
4	54	NA	NA	57	NA	NA

**Table 8.D.24 Total Number of Items Answered by Student Achievement Level—
Mathematics, Grade Eleven**

Total Number Answered	Level 1— Alternate	Level 2— Alternate	Level 3— Alternate
29	1,341	968	379
28	306	118	26
27	132	31	6
26	73	8	3
25	58	5	NA
24	32	2	2
23	30	2	NA
22	19	NA	NA
21	17	NA	NA
20	17	NA	NA
19	12	NA	NA
18	9	1	NA
17	11	NA	NA
16	8	NA	NA
15	7	NA	NA
14	33	NA	NA
13	13	NA	NA
12	10	NA	NA
11	9	NA	NA
10	17	NA	NA
9	12	NA	NA
8	12	NA	NA
7	12	NA	NA
6	12	NA	NA
5	16	NA	NA
4	33	NA	NA

Appendix 8.E: Differential Item Functioning (DIF) Analysis

Note: The sample size requirements for the differential item functioning (DIF) analyses were 100 in the smaller of either the focal group or the reference group; and 400 in the combined focal and reference groups. The following focal groups did not meet the required sample size for inclusion in the DIF analyses:

- American Indian or Alaska Native
- Native Hawaiian or Other Pacific Islander
- Deaf-Blindness
- Emotional Disturbance
- Traumatic Brain Injury
- Hearing Impairment
- Visual Impairment

Table 8.E.1 DIF for Operational Items in ELA, Grade Three

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	1	2%	NA	NA	NA	NA	NA	NA
B+	1	2%	1	2%	NA	NA	NA	NA	1	2%	NA	NA
A+	26	51%	18	35%	15	29%	4	8%	26	51%	3	6%
A-	24	47%	10	20%	13	25%	6	12%	22	43%	6	12%
B-	NA	NA	NA	NA	NA	NA	NA	NA	2	4%	1	2%
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	22	43%	22	43%	41	80%	NA	NA	41	80%
Operational Items Total	51	100%	51	100%	51	99%	51	100%	51	100%	51	100%

Table 8.E.2 DIF for Operational Items in ELA, Grade Three (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
B+	3	6%	NA	NA	NA	NA	1	2%	1	2%	2	4%
A+	26	51%	4	8%	NA	NA	13	25%	8	16%	6	12%
A-	18	35%	5	10%	NA	NA	9	18%	14	27%	6	12%
B-	3	6%	1	2%	NA	NA	2	4%	1	2%	NA	NA
C-	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	41	80%	51	100%	26	51%	26	51%	37	73%
Operational Items Total	51	100%	51	100%	51	100%	51	100%	51	100%	51	101%

Table 8.E.3 DIF for Operational Items in ELA, Grade Four

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	2%	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
A+	27	53%	19	37%	15	29%	NA	NA	27	53%	5	10%
A-	21	41%	19	37%	12	24%	NA	NA	23	45%	6	12%
B-	2	4%	1	2%	1	2%	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	12	24%	23	45%	51	100%	NA	NA	40	78%
Operational Items Total	51	100%	51	100%	51	100%	51	100%	51	100%	51	100%

Table 8.E.4 DIF for Operational Items in ELA, Grade Four (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	1	2%	NA	NA	2	4%	NA	NA
A+	26	51%	7	14%	4	8%	10	20%	18	35%	4	8%
A-	21	41%	4	8%	5	10%	14	27%	14	27%	9	18%
B-	3	6%	NA	NA	1	2%	1	2%	2	4%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
NA	NA	NA	40	78%	40	78%	26	51%	14	27%	38	75%
Operational Items Total	51	100%	51	100%	51	100%	51	100%	51	99%	51	101%

Table 8.E.5 DIF for Operational Items in ELA, Grade Five

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	1	2%	1	2%	NA	NA
A+	30	57%	14	26%	20	38%	5	9%	28	53%	7	13%
A-	22	42%	11	21%	17	32%	4	8%	24	45%	3	6%
B-	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	28	53%	16	30%	43	81%	NA	NA	43	81%
Operational Items Total	53	101%	53	100%	53	100%	53	100%	53	100%	53	100%

Table 8.E.6 DIF for Operational Items in ELA, Grade Five (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	2%	NA	NA	NA	NA	NA	NA	5	9%	NA	NA
A+	28	53%	4	8%	2	4%	13	25%	16	30%	6	11%
A-	20	38%	6	11%	8	15%	11	21%	12	23%	5	9%
B-	3	6%	NA	NA	NA	NA	1	2%	2	4%	1	2%
C-	NA	NA	NA	NA	NA	NA	NA	NA	3	6%	NA	NA
NA	NA	NA	43	81%	43	81%	28	53%	15	28%	41	77%
Operational Items Total	53	101%	53	100%	53	100%	53	101%	53	100%	53	99%

Table 8.E.7 DIF for Operational Items in ELA, Grade Six

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	2%	2	4%	1	2%	NA	NA	NA	NA	NA	NA
A+	25	46%	17	31%	20	37%	5	9%	20	37%	4	7%
A-	27	50%	19	35%	17	31%	6	11%	19	35%	6	11%
B-	1	2%	1	2%	1	2%	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	28%	15	28%	43	80%	15	28%	44	81%
Operational Items Total	54	100%	54	100%	54	100%	54	100%	54	100%	54	99%

Table 8.E.8 DIF for Operational Items in ELA, Grade Six (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
B+	1	2%	NA	NA	NA	NA	1	2%	1	2%	NA	NA
A+	20	37%	6	11%	7	13%	11	20%	10	19%	6	11%
A-	16	30%	5	9%	4	7%	13	24%	12	22%	5	9%
B-	2	4%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
NA	15	28%	43	80%	43	80%	29	54%	29	54%	43	80%
Operational Items Total	54	101%	54	100%	54	100%	54	100%	54	101%	54	100%

Table 8.E.9 DIF for Operational Items in ELA, Grade Seven

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	1	2%	NA	NA	NA	NA	NA	NA
B+	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	29	54%	18	33%	14	26%	5	9%	27	50%	3	6%
A-	24	44%	19	35%	24	44%	6	11%	27	50%	8	15%
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	17	31%	15	28%	43	80%	NA	NA	43	80%
Operational Items Total	54	100%	54	99%	54	100%	54	100%	54	101%	54	101%

Table 8.E.10 DIF for Operational Items in ELA, Grade Seven (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	1	2%	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
B+	1	2%	NA	NA	NA	NA	3	6%	4	7%	2	4%
A+	21	39%	6	11%	6	11%	13	24%	11	20%	3	6%
A-	30	56%	5	9%	4	7%	21	39%	21	39%	5	9%
B-	1	2%	NA	NA	1	2%	3	6%	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
NA	NA	NA	43	80%	43	80%	14	26%	14	26%	44	81%
Operational Items Total	54	101%	54	100%	54	100%	54	101%	54	100%	54	100%

Table 8.E.11 DIF for Operational Items ELA, Grade Eight

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	1	2%	NA	NA	NA	NA	NA	NA
B+	1	2%	NA	NA	1	2%	NA	NA	1	2%	NA	NA
A+	23	48%	20	42%	15	31%	5	10%	23	48%	NA	NA
A-	24	50%	17	35%	20	42%	6	13%	24	50%	NA	NA
B-	NA	NA	NA	NA	NA	NA	2	4%	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	11	23%	11	23%	35	73%	NA	NA	48	100%
Operational Items Total	48	100%	48	100%	48	100%	48	100%	48	100%	48	100%

Table 8.E.12 DIF for Operational Items in ELA, Grade Eight (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	2%	1	2%	NA	NA	1	2%	NA	NA	NA	NA
A+	20	42%	6	13%	6	13%	6	13%	16	33%	4	8%
A-	25	52%	5	10%	7	15%	18	38%	20	42%	5	10%
B-	2	4%	NA	NA	NA	NA	NA	NA	NA	NA	1	2%
C-	NA	NA	1	2%	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	35	73%	35	73%	23	48%	12	25%	38	79%
Operational Items Total	48	100%	48	100%	48	101%	48	101%	48	100%	48	99%

Table 8.E.13 DIF for Operational Items in ELA, Grade Eleven

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	1	2%	NA	NA	NA	NA	2	4%
A+	30	58%	10	19%	11	21%	4	8%	33	63%	3	6%
A-	21	40%	15	29%	13	25%	5	10%	18	35%	5	10%
B-	1	2%	NA	NA	NA	NA	1	2%	1	2%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	27	52%	27	52%	42	81%	NA	NA	42	81%
Operational Items Total	52	100%	52	100%	52	100%	52	101%	52	100%	52	101%

Table 8.E.14 DIF for Operational Items in ELA, Grade Eleven (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	1	2%	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
B+	3	6%	NA	NA	1	2%	1	2%	1	2%	NA	NA
A+	17	33%	4	8%	3	6%	3	6%	13	25%	NA	NA
A-	29	56%	6	12%	8	15%	9	17%	20	38%	NA	NA
B-	2	4%	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
C-	NA	NA	NA	NA	1	2%	NA	NA	1	2%	NA	NA
NA	NA	NA	42	81%	39	75%	39	75%	13	25%	52	100%
Operational Items Total	52	101%	52	101%	52	100%	52	100%	52	100%	52	100%

Table 8.E.15 DIF for Operational Items in Mathematics, Grade Three

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	1	2%	NA	NA	NA	NA	NA	NA
B+	1	2%	NA	NA	1	2%	1	2%	NA	NA	NA	NA
A+	26	49%	12	23%	12	23%	5	9%	23	43%	3	6%
A-	26	49%	15	28%	12	23%	4	8%	30	57%	7	13%
B-	NA	NA	NA	NA	1	2%	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	26	49%	26	49%	43	81%	NA	NA	43	81%
Operational Items Total	53	100%	53	100%	53	101%	53	100%	53	100%	53	100%

Table 8.E.16 DIF for Operational Items in Mathematics, Grade Three (Continued)

DIF Category	Intellectual Disability- Autism N	Intellectual Disability- Autism Pct	Intellectual Disability- Multiple Disabilities N	Intellectual Disability- Multiple Disabilities Pct	Intellectual Disability- Orthopedic Impairment N	Intellectual Disability- Orthopedic Impairment Pct	Intellectual Disability- Other N	Intellectual Disability- Other Pct	Intellectual Disability- Specific Learning N	Intellectual Disability- Specific Learning Pct	Intellectual Disability- Speech or Language N	Intellectual Disability- Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	4	8%	1	2%
B+	2	4%	NA	NA	NA	NA	1	2%	NA	NA	2	4%
A+	23	43%	7	13%	NA	NA	17	32%	7	13%	10	19%
A-	25	47%	3	6%	NA	NA	20	38%	8	15%	9	17%
B-	2	4%	NA	NA	NA	NA	2	4%	3	6%	1	2%
C-	1	2%	NA	NA	NA	NA	NA	NA	3	6%	2	4%
NA	NA	NA	43	81%	53	100%	13	25%	28	53%	28	53%
Operational Items Total	53	100%	53	100%	53	100%	53	101%	53	101%	53	101%

Table 8.E.17 DIF for Operational Items in Mathematics, Grade Four

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	2%
A+	27	53%	8	16%	10	20%	NA	NA	26	51%	5	10%
A-	23	45%	16	31%	14	27%	NA	NA	25	49%	6	12%
B-	1	2%	1	2%	1	2%	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	26	51%	26	51%	51	100%	NA	NA	39	76%
Operational ItemsTotal	51	100%	51	100%	51	100%	51	100%	51	100%	51	100%

Table 8.E.18 DIF for Operational Items in Mathematics, Grade Four (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	1	2%	NA	NA	NA	NA	NA	NA	3	6%	1	2%
B+	2	4%	NA	NA	1	2%	1	2%	2	4%	1	2%
A+	13	25%	7	14%	5	10%	12	24%	4	8%	11	22%
A-	20	39%	5	10%	6	12%	12	24%	12	24%	12	24%
B-	2	4%	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
NA	13	25%	39	76%	39	76%	26	51%	26	51%	26	51%
Operational ItemsTotal	51	99%	51	100%	51	100%	51	101%	51	101%	51	101%

Table 8.E.19 DIF for Operational Items in Mathematics, Grade Five

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	2	4%	1	2%	NA	NA	NA	NA	NA	NA
A+	28	52%	7	13%	13	24%	4	7%	27	50%	4	7%
A-	26	48%	16	30%	9	17%	6	11%	27	50%	6	11%
B-	NA	NA	NA	NA	2	4%	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	29	54%	29	54%	44	81%	NA	NA	44	81%
Operational Items Total	54	100%	54	101%	54	101%	54	99%	54	100%	54	99%

Table 8.E.20 DIF for Operational Items in Mathematics, Grade Five (Continued)

DIF Category	Intellectual Disability- Autism N	Intellectual Disability- Autism Pct	Intellectual Disability- Multiple Disabilities N	Intellectual Disability- Multiple Disabilities Pct	Intellectual Disability- Orthopedic Impairment N	Intellectual Disability- Orthopedic Impairment Pct	Intellectual Disability- Other N	Intellectual Disability- Other Pct	Intellectual Disability- Specific Learning N	Intellectual Disability- Specific Learning Pct	Intellectual Disability- Speech or Language N	Intellectual Disability- Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	4	7%	NA	NA
B+	2	4%	NA	NA	NA	NA	1	2%	5	9%	4	7%
A+	28	52%	3	6%	7	13%	12	22%	10	19%	2	4%
A-	24	44%	8	15%	4	7%	10	19%	14	26%	3	6%
B-	NA	NA	NA	NA	NA	NA	2	4%	3	6%	1	2%
C-	NA	NA	NA	NA	NA	NA	NA	NA	4	7%	NA	NA
NA	NA	NA	43	80%	43	80%	29	54%	14	26%	44	81%
Operational Items Total	54	100%	54	101%	54	100%	54	101%	54	100%	54	100%

Table 8.E.21 DIF for Operational Items in Mathematics, Grade Six

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	2	4%	NA	NA	1	2%	1	2%	NA	NA
A+	24	50%	17	35%	15	31%	7	15%	25	52%	5	10%
A-	23	48%	16	33%	10	21%	5	10%	21	44%	8	17%
B-	1	2%	1	2%	NA	NA	NA	NA	1	2%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	12	25%	23	48%	35	73%	NA	NA	35	73%
Operational Items Total	48	100%	48	99%	48	100%	48	100%	48	100%	48	100%

Table 8.E.22 DIF for Operational Items in Mathematics, Grade Six (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	3	6%	2	4%
B+	1	2%	NA	NA	NA	NA	2	4%	5	10%	NA	NA
A+	20	42%	9	19%	7	15%	11	23%	7	15%	6	13%
A-	26	54%	5	10%	6	13%	9	19%	16	33%	3	6%
B-	1	2%	NA	NA	NA	NA	2	4%	3	6%	2	4%
C-	NA	NA	NA	NA	NA	NA	NA	NA	3	6%	NA	NA
NA	NA	NA	34	71%	35	73%	24	50%	11	23%	35	73%
Operational Items Total	48	100%	48	100%	48	101%	48	100%	48	99%	48	100%

Table 8.E.23 DIF for Operational Items in Mathematics, Grade Seven

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
B+	NA	NA	1	2%	NA	NA	1	2%	1	2%	NA	NA
A+	21	43%	20	41%	18	37%	7	14%	23	47%	6	12%
A-	28	57%	15	31%	19	39%	5	10%	24	49%	7	14%
B-	NA	NA	1	2%	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	12	24%	12	24%	36	73%	NA	NA	36	73%
Operational Items Total	49	100%	49	100%	49	100%	49	99%	49	100%	49	99%

Table 8.E.24 DIF for Operational Items in Mathematics, Grade Seven (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
B+	2	4%	NA	NA	1	2%	1	2%	3	6%	3	6%
A+	21	43%	6	12%	4	8%	11	22%	8	16%	4	8%
A-	26	53%	5	10%	6	12%	12	24%	8	16%	5	10%
B-	NA	NA	NA	NA	1	2%	1	2%	4	8%	NA	NA
C-	NA	NA	NA	NA	1	2%	NA	NA	NA	NA	1	2%
NA	NA	NA	38	78%	36	73%	24	49%	24	49%	36	73%
Operational Items Total	49	100%	49	100%	49	99%	49	99%	49	99%	49	99%

Table 8.E.25 DIF for Operational Items in Mathematics, Grade Eight

DIF Category	Male-Female N	Male-Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	1	2%	1	2%	1	2%	NA	NA	NA	NA
A+	28	57%	9	18%	11	22%	6	12%	23	47%	NA	NA
A-	21	43%	13	27%	13	27%	4	8%	26	53%	NA	NA
B-	NA	NA	2	4%	NA	NA	2	4%	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	24	49%	24	49%	36	73%	NA	NA	49	100%
Operational Items Total	49	100%	49	100%	49	100%	49	99%	49	100%	49	100%

Table 8.E.26 DIF for Operational Items in Mathematics, Grade Eight (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
B+	2	4%	NA	NA	1	2%	1	2%	3	6%	1	2%
A+	18	37%	6	12%	6	12%	15	31%	14	29%	4	8%
A-	28	57%	4	8%	5	10%	20	41%	12	24%	5	10%
B-	1	2%	1	2%	NA	NA	1	2%	3	6%	2	4%
C-	NA	NA	1	2%	NA	NA	NA	NA	4	8%	NA	NA
NA	NA	NA	37	76%	37	76%	12	24%	12	24%	37	76%
Operational Items Total	49	100%	49	100%	49	100%	49	100%	49	99%	49	100%

Table 8.E.27 DIF for Operational Items in Mathematics, Grade Eleven

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	29	58%	11	22%	6	12%	6	12%	26	52%	NA	NA
A-	21	42%	14	28%	8	16%	5	10%	24	48%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	25	50%	36	72%	39	78%	NA	NA	50	100%
Operational Items Total	50	100%	50	100%	50	100%	50	100%	50	100%	50	100%

Table 8.E.28 DIF for Operational Items in Mathematics, Grade Eleven (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
B+	2	4%	NA	NA	1	2%	2	4%	2	4%	NA	NA
A+	19	38%	6	12%	4	8%	6	12%	10	20%	NA	NA
A-	28	56%	5	10%	7	14%	4	8%	10	20%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
C-	1	2%	NA	NA	1	2%	NA	NA	1	2%	NA	NA
NA	NA	NA	39	78%	37	74%	38	76%	25	50%	50	100%
Operational Items Total	50	100%	50	100%	50	100%	50	100%	50	100%	50	100%

Table 8.E.29 DIF for Field Test Items in ELA, Grade Three

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	11	55%	NA	NA	NA	NA	NA	NA	13	65%	NA	NA
A-	9	45%	NA	NA	NA	NA	NA	NA	7	35%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.30 DIF for Field Test Items in ELA, Grade Three (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	40%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	9	45%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	2	10%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	20	100%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.31 DIF for Field Test Items in ELA, Grade Four

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	40%	NA	NA	NA	NA	NA	NA	10	50%	NA	NA
A-	12	60%	NA	NA	NA	NA	NA	NA	9	45%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	5%	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.32 DIF for Field Test Items in ELA, Grade Four (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	3	15%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	40%	NA	NA	NA	NA	NA	NA	5	25%	NA	NA
A-	9	45%	NA	NA	NA	NA	NA	NA	3	15%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	12	60%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.33 DIF for Field Test Items in ELA, Grade Five

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	9	45%	NA	NA	NA	NA	NA	NA	10	50%	NA	NA
A-	8	40%	NA	NA	NA	NA	NA	NA	10	50%	NA	NA
B-	2	10%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.34 DIF for Field Test Items in ELA, Grade Five (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	5%	NA	NA
B+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	10	50%	NA	NA	NA	NA	NA	NA	3	15%	NA	NA
A-	9	45%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	16	80%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.35 DIF for Field Test Items in ELA, Grade Six

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	10	50%	NA	NA	NA	NA	NA	NA	10	50%	NA	NA
A-	9	45%	NA	NA	NA	NA	NA	NA	8	40%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	2	10%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.36 DIF for Field Test Items in ELA, Grade Six (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	7	35%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	12	60%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	20	100%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.37 DIF for Field Test Items in ELA, Grade Seven

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	2	10%	NA	NA
A+	5	25%	NA	NA	NA	NA	NA	NA	9	45%	NA	NA
A-	15	75%	NA	NA	NA	NA	NA	NA	9	45%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.38 DIF for Field Test Items in ELA, Grade Seven (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	14	70%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	5	25%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	20	100%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.39 DIF for Field Test Items in ELA, Grade Eight

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	6	50%	2	17%	4	33%	NA	NA	6	50%	NA	NA
A-	5	42%	6	50%	4	33%	NA	NA	6	50%	NA	NA
B-	1	8%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	4	33%	4	33%	12	100%	NA	NA	12	100%
Embedded Field-test Items Total	12	100%	12	100%	12	99%	12	100%	12	100%	12	100%

Table 8.E.40 DIF for Field Test Items in ELA, Grade Eight (Continued)

DIF Category	Intellectual Disability--Autism N	Intellectual Disability--Autism Pct	Intellectual Disability--Multiple Disabilities N	Intellectual Disability--Multiple Disabilities Pct	Intellectual Disability--Orthopedic Impairment N	Intellectual Disability--Orthopedic Impairment Pct	Intellectual Disability--Other N	Intellectual Disability--Other Pct	Intellectual Disability--Specific Learning N	Intellectual Disability--Specific Learning Pct	Intellectual Disability--Speech or Language N	Intellectual Disability--Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	67%	NA	NA	NA	NA	2	17%	5	42%	NA	NA
A-	4	33%	NA	NA	NA	NA	2	17%	3	25%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	12	100%	12	100%	8	67%	4	33%	12	100%
Embedded Field-test Items Total	12	100%	12	100%	12	100%	12	101%	12	100%	12	100%

Table 8.E.41 DIF for Field Test Items in ELA, Grade Eleven

DIF Category	Male--Female N	Male--Female Pct	White--African Amer N	White--African Amer Pct	White--Asian N	White--Asian Pct	White--Filipino N	White--Filipino Pct	White--Hispanic N	White--Hispanic Pct	White--Two or More N	White--Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	3	25%	4	33%	2	17%	NA	NA	4	33%	NA	NA
A-	9	75%	4	33%	2	17%	NA	NA	7	58%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	1	8%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	4	33%	8	67%	12	100%	NA	NA	12	100%
Embedded Field-test Items Total	12	100%	12	99%	12	101%	12	100%	12	99%	12	100%

Table 8.E.42 DIF for Field Test Items in ELA, Grade Eleven (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	2	17%	NA	NA	NA	NA	NA	NA	2	17%	NA	NA
A+	7	58%	NA	NA	NA	NA	NA	NA	4	33%	NA	NA
A-	3	25%	NA	NA	NA	NA	NA	NA	2	17%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	12	100%	12	100%	12	100%	4	33%	12	100%
Embedded Field-test Items Total	12	100%	12	100%	12	100%	12	100%	12	100%	12	100%

Table 8.E.43 DIF for Field Test Items in Mathematics, Grade Three

DIF Category	Male-Female N	Male-Female Pct	White-African Amer N	White-African Amer Pct	White-Asian N	White-Asian Pct	White-Filipino N	White-Filipino Pct	White-Hispanic N	White-Hispanic Pct	White-Two or More N	White-Two or More Pct
C+	1	5%	NA	NA	NA	NA	NA	NA	1	5%	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	7	35%	NA	NA	NA	NA	NA	NA	10	50%	NA	NA
A-	11	55%	NA	NA	NA	NA	NA	NA	9	45%	NA	NA
B-	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.44 DIF for Field Test Items in Mathematics, Grade Three (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	40%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	10	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	20	100%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.45 DIF for Field Test Items in Mathematics, Grade Four

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	10	50%	NA	NA	NA	NA	NA	NA	15	75%	NA	NA
A-	9	45%	NA	NA	NA	NA	NA	NA	5	25%	NA	NA
B-	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.46 DIF for Field Test Items in Mathematics, Grade Four (Continued)

DIF Category	Intellectual Disability- Autism N	Intellectual Disability- Autism Pct	Intellectual Disability- Multiple Disabilities N	Intellectual Disability- Multiple Disabilities Pct	Intellectual Disability- Orthopedic Impairment N	Intellectual Disability- Orthopedic Impairment Pct	Intellectual Disability- Other N	Intellectual Disability- Other Pct	Intellectual Disability- Specific Learning N	Intellectual Disability- Specific Learning Pct	Intellectual Disability- Speech or Language N	Intellectual Disability- Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	5%	NA	NA
B+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	11	55%	NA	NA	NA	NA	NA	NA	2	10%	NA	NA
A-	7	35%	NA	NA	NA	NA	NA	NA	1	5%	NA	NA
B-	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	16	80%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.47 DIF for Field Test Items in Mathematics, Grade Five

DIF Category	Male-Female N	Male-Female Pct	White-African Amer N	White-African Amer Pct	White-Asian N	White-Asian Pct	White-Filipino N	White-Filipino Pct	White-Hispanic N	White-Hispanic Pct	White-Two or More N	White-Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	40%	NA	NA	NA	NA	NA	NA	11	55%	NA	NA
A-	12	60%	NA	NA	NA	NA	NA	NA	9	45%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.48 DIF for Field Test Items in Mathematics, Grade Five (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	40%	NA	NA	NA	NA	NA	NA	3	15%	NA	NA
A-	10	50%	NA	NA	NA	NA	NA	NA	1	5%	NA	NA
B-	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	16	80%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.49 DIF for Field Test Items in Mathematics, Grade Six

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	1	5%	NA	NA
A+	11	55%	NA	NA	NA	NA	NA	NA	4	20%	NA	NA
A-	9	45%	NA	NA	NA	NA	NA	NA	14	70%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	1	5%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.50 DIF for Field Test Items in Mathematics, Grade Six (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	13	65%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	6	30%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	20	100%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.51 DIF for Field Test Items in Mathematics, Grade Seven

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	40%	NA	NA	NA	NA	NA	NA	8	40%	NA	NA
A-	12	60%	NA	NA	NA	NA	NA	NA	12	60%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.52 DIF for Field Test Items in Mathematics, Grade Seven (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	2	10%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	5	25%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	12	60%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	20	100%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.53 DIF for Field Test Items in Mathematics, Grade Eight

DIF Category	Male-Female N	Male-Female Pct	White-African Amer N	White-African Amer Pct	White-Asian N	White-Asian Pct	White-Filipino N	White-Filipino Pct	White-Hispanic N	White-Hispanic Pct	White-Two or More N	White-Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	9	45%	NA	NA	NA	NA	NA	NA	9	45%	NA	NA
A-	10	50%	NA	NA	NA	NA	NA	NA	11	55%	NA	NA
B-	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.54 DIF for Field Test Items in Mathematics, Grade Eight (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	2	10%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	9	45%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	8	40%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	20	100%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.55 DIF for Field Test Items in Mathematics, Grade Eleven

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	1	5%	NA	NA
A+	7	35%	NA	NA	NA	NA	NA	NA	8	40%	NA	NA
A-	13	65%	NA	NA	NA	NA	NA	NA	11	55%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	NA	NA	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Table 8.E.56 DIF for Field Test Items in Mathematics, Grade Eleven (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	12	60%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	6	30%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	1	5%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	20	100%	20	100%	20	100%	20	100%	20	100%
Embedded Field-test Items Total	20	100%	20	100%	20	100%	20	100%	20	100%	20	100%

Appendix 8.F: Reliability Estimates

Notes:

- The reliabilities are reported only for samples that comprise 11 or more examinees.
- In some cases in appendix 8.F, score reliabilities were not estimable and are presented in the tables as “NA.”
- Results based on samples that contain 50 or fewer examinees should be interpreted with caution due to small sample sizes.

Table 8.F.1 Reliabilities and Standard Errors of Measurement (SEMs) by Gender

Content Area and Grade	Male N	Male Reliability	Male Theta Score SEM	Female N	Female Reliability	Female Theta Score SEM
ELA 3	2,859	0.88	0.43	1,268	0.87	0.46
ELA 4	3,012	0.88	0.42	1,443	0.88	0.41
ELA 5	3,048	0.88	0.41	1,417	0.88	0.41
ELA 6	3,117	0.86	0.40	1,462	0.86	0.40
ELA 7	3,102	0.90	0.43	1,455	0.88	0.41
ELA 8	2,975	0.85	0.39	1,400	0.83	0.39
ELA 11	2,505	0.89	0.41	1,335	0.89	0.41
Mathematics 3	2,868	0.81	0.41	1,244	0.78	0.42
Mathematics 4	2,965	0.83	0.38	1,406	0.79	0.37
Mathematics 5	2,987	0.82	0.41	1,386	0.80	0.39
Mathematics 6	2,995	0.75	0.42	1,391	0.73	0.42
Mathematics 7	3,077	0.82	0.40	1,446	0.81	0.37
Mathematics 8	2,906	0.80	0.34	1,368	0.79	0.37
Mathematics 11	2,492	0.83	0.42	1,310	0.83	0.40

Table 8.F.2 Reliabilities and SEMs by Ethnicity

Content Area and Grade	American Indian or Alaska Native N	American Indian or Alaska Native Reliability	American Indian or Alaska Native Theta Score SEM	Asian N	Asian Reliability	Asian Theta Score SEM	Native Hawaiian or Other Pacific Islander N	Native Hawaiian or Other Pacific Islander Reliability	Native Hawaiian or Other Pacific Islander Theta Score SEM
ELA 3	27	0.87	0.41	320	0.89	0.40	18	0.89	0.39
ELA 4	28	0.83	0.71	344	0.87	0.41	28	0.89	0.42
ELA 5	29	0.80	0.40	332	0.88	0.40	19	0.82	0.38
ELA 6	24	0.90	0.40	343	0.86	0.39	18	0.83	0.38
ELA 7	30	0.86	0.42	323	0.89	0.41	25	0.78	0.65
ELA 8	25	0.83	0.42	359	0.85	0.39	18	0.75	0.37
ELA 11	33	0.90	0.46	293	0.89	0.40	13	0.83	0.37
Mathematics 3	25	0.51	0.35	314	0.80	0.43	18	0.86	0.43
Mathematics 4	26	0.80	0.37	338	0.83	0.39	25	0.87	0.41
Mathematics 5	30	0.78	0.35	319	0.83	0.37	18	0.75	0.78
Mathematics 6	23	0.80	0.35	326	0.77	0.36	19	0.79	0.39
Mathematics 7	30	0.89	0.38	321	0.81	0.39	24	0.81	0.36
Mathematics 8	27	0.85	0.34	347	0.80	0.38	17	0.59	0.32
Mathematics 11	33	0.80	0.64	290	0.84	0.41	13	0.88	0.43

Table 8.F.3 Reliabilities and SEMS by Ethnicity (Continued)

Content Area and Grade	Filipino N	Filipino Reliability	Filipino Theta Score SEM	Hispanic or Latino N	Hispanic or Latino Reliability	Hispanic or Latino Theta Score SEM	Black or African American N	Black or African American Reliability	Black or African American Theta Score SEM
ELA 3	103	0.87	0.41	2,370	0.87	0.44	312	0.87	0.44
ELA 4	88	0.86	0.39	2,588	0.88	0.42	347	0.88	0.41
ELA 5	106	0.88	0.40	2,618	0.88	0.40	342	0.88	0.40
ELA 6	116	0.84	0.38	2,734	0.86	0.40	373	0.86	0.40
ELA 7	129	0.88	0.42	2,610	0.89	0.42	399	0.90	0.42
ELA 8	138	0.86	0.38	2,483	0.84	0.39	365	0.85	0.38
ELA 11	112	0.88	0.40	2,103	0.89	0.41	362	0.89	0.41
Mathematics 3	106	0.83	0.40	2,364	0.79	0.40	319	0.81	0.46
Mathematics 4	91	0.84	0.38	2,535	0.81	0.37	343	0.81	0.39
Mathematics 5	106	0.81	0.37	2,568	0.81	0.40	338	0.83	0.41
Mathematics 6	111	0.84	0.41	2,624	0.73	0.43	355	0.73	0.41
Mathematics 7	129	0.79	0.34	2,591	0.82	0.40	405	0.83	0.40
Mathematics 8	135	0.82	0.35	2,437	0.80	0.34	362	0.75	0.37
Mathematics 11	111	0.86	0.37	2,084	0.83	0.40	363	0.84	0.44

Table 8.F.4 Reliabilities and SEMS by Ethnicity (Continued)

Content Area and Grade	White N	White Reliability	White Theta Score SEM	Two or More Races N	Two or More Races Reliability	Two or More Races Theta Score SEM
ELA 3	771	0.89	0.44	206	0.88	0.44
ELA 4	855	0.88	0.43	177	0.89	0.41
ELA 5	863	0.88	0.44	156	0.90	0.40
ELA 6	819	0.87	0.41	152	0.86	0.39
ELA 7	860	0.89	0.44	181	0.89	0.41
ELA 8	849	0.86	0.39	138	0.84	0.38
ELA 11	807	0.90	0.43	117	0.84	0.46
Mathematics 3	758	0.82	0.40	208	0.79	0.51
Mathematics 4	839	0.81	0.38	174	0.83	0.38
Mathematics 5	846	0.83	0.39	148	0.82	0.37
Mathematics 6	788	0.76	0.44	140	0.79	0.37
Mathematics 7	840	0.83	0.38	183	0.82	0.43
Mathematics 8	821	0.81	0.34	128	0.74	0.33
Mathematics 11	797	0.84	0.43	111	0.83	0.46

Table 8.F.5 Reliabilities and SEMs by English Proficiency

Content Area and Grade	English Only N	English Only Reliability	English Only Theta Score SEM	Initial Fluent English Proficient N	Initial Fluent English Proficient Reliability	Initial Fluent English Proficient Theta Score SEM
ELA 3	2,499	0.88	0.44	25	0.87	0.39
ELA 4	2,689	0.88	0.42	40	0.91	0.44
ELA 5	2,550	0.88	0.42	32	0.83	0.38
ELA 6	2,601	0.86	0.40	48	0.90	0.42
ELA 7	2,618	0.89	0.43	60	0.82	0.39
ELA 8	2,497	0.85	0.39	70	0.87	0.39
ELA 11	2,253	0.89	0.42	60	0.88	0.41
Mathematics 3	2,497	0.81	0.42	24	0.84	0.41
Mathematics 4	2,635	0.81	0.38	41	0.82	0.36
Mathematics 5	2,498	0.82	0.41	29	0.88	0.40
Mathematics 6	2,478	0.76	0.43	44	0.79	0.38
Mathematics 7	2,598	0.82	0.39	64	0.84	0.36
Mathematics 8	2,443	0.79	0.34	66	0.73	0.33
Mathematics 11	2,224	0.84	0.42	58	0.82	0.35

Table 8.F.6 Reliabilities and SEMs by English Proficiency (Continued)

Content Area and Grade	English Learner N	English Learner Reliability	English Learner Theta Score SEM	Redesignated Fluent English Proficient N	Redesignated Fluent English Proficient Reliability	Redesignated Fluent English Proficient Theta Score SEM
ELA 3	1,469	0.88	0.43	130	0.87	0.47
ELA 4	1,496	0.87	0.41	224	0.86	0.40
ELA 5	1,572	0.88	0.40	304	0.87	0.41
ELA 6	1,537	0.86	0.39	388	0.84	0.39
ELA 7	1,461	0.89	0.42	410	0.88	0.41
ELA 8	1,350	0.84	0.38	453	0.83	0.39
ELA 11	1,055	0.88	0.40	465	0.89	0.41
Mathematics 3	1,451	0.78	0.41	133	0.84	0.39
Mathematics 4	1,470	0.83	0.38	219	0.81	0.37
Mathematics 5	1,544	0.81	0.39	296	0.83	0.37
Mathematics 6	1,484	0.74	0.40	376	0.68	0.46
Mathematics 7	1,445	0.81	0.41	409	0.80	0.35
Mathematics 8	1,310	0.80	0.35	449	0.81	0.37
Mathematics 11	1,048	0.84	0.40	461	0.81	0.43

Table 8.F.7 Reliabilities and SEMs by English Proficiency (Continued)

Content Area and Grade	To Be Determined N	To Be Determined Reliability	To Be Determined Theta Score SEM	English Proficiency Unknown N	English Proficiency Unknown Reliability	English Proficiency Unknown Theta Score SEM
ELA 3	2	NA	NA	2	NA	NA
ELA 4	4	NA	NA	2	NA	NA
ELA 5	2	NA	NA	5	NA	NA
ELA 6	1	NA	NA	4	NA	NA
ELA 7	2	NA	NA	6	NA	NA
ELA 8	2	NA	NA	3	NA	NA
ELA 11	1	NA	NA	6	NA	NA
Mathematics 3	2	NA	NA	5	NA	NA
Mathematics 4	4	NA	NA	2	NA	NA
Mathematics 5	2	NA	NA	4	NA	NA
Mathematics 6	2	NA	NA	2	NA	NA
Mathematics 7	1	NA	NA	6	NA	NA
Mathematics 8	2	NA	NA	4	NA	NA
Mathematics 11	1	NA	NA	10	NA	NA

Table 8.F.8 Reliabilities and SEMs by Economic Status

Content Area and Grade	Not Economically Disadvantaged N	Not Economically Disadvantaged Reliability	Not Economically Disadvantaged Theta Score SEM	Economically Disadvantaged N	Economically Disadvantaged Reliability	Economically Disadvantaged Theta Score SEM
ELA 3	1,288	0.88	0.43	2,839	0.88	0.44
ELA 4	1,359	0.89	0.42	3,096	0.88	0.42
ELA 5	1,427	0.89	0.42	3,038	0.87	0.41
ELA 6	1,410	0.86	0.40	3,169	0.86	0.40
ELA 7	1,434	0.90	0.43	3,123	0.89	0.42
ELA 8	1,434	0.86	0.39	2,941	0.84	0.39
ELA 11	1,316	0.89	0.43	2,524	0.89	0.41
Mathematics 3	1,283	0.82	0.42	2,829	0.79	0.41
Mathematics 4	1,335	0.82	0.38	3,036	0.82	0.38
Mathematics 5	1,385	0.82	0.41	2,988	0.81	0.39
Mathematics 6	1,330	0.75	0.47	3,056	0.74	0.40
Mathematics 7	1,423	0.82	0.42	3,100	0.82	0.38
Mathematics 8	1,409	0.81	0.35	2,865	0.79	0.35
Mathematics 11	1,293	0.84	0.45	2,509	0.83	0.39

Table 8.F.9 Reliabilities and SEMs by Migrant Status

Content Area and Grade	Migrant N	Migrant Reliability	Migrant Theta Score SEM	Nonmigrant N	Nonmigrant Reliability	Nonmigrant Theta Score SEM
ELA 3	19	0.81	0.39	4,108	0.88	0.44
ELA 4	38	0.78	0.39	4,417	0.88	0.42
ELA 5	28	0.86	0.41	4,437	0.88	0.41
ELA 6	31	0.88	0.42	4,548	0.86	0.40
ELA 7	32	0.91	0.43	4,525	0.89	0.43
ELA 8	31	0.72	0.37	4,344	0.85	0.39
ELA 11	15	0.82	0.39	3,825	0.89	0.41
Mathematics 3	17	0.07	0.34	4,095	0.80	0.41
Mathematics 4	38	0.71	0.37	4,333	0.82	0.38
Mathematics 5	27	0.75	0.35	4,346	0.82	0.40
Mathematics 6	30	0.78	0.36	4,356	0.75	0.42
Mathematics 7	32	0.75	0.65	4,491	0.82	0.39
Mathematics 8	32	0.83	0.34	4,242	0.80	0.35
Mathematics 11	15	0.80	0.34	3,787	0.83	0.41

Table 8.F.10 Reliabilities and SEMs by Primary Disabilities

Content Area and Grade	Intellectual Disability N	Intellectual Disability Reliability	Intellectual Disability Theta Score SEM	Hearing Impairment N	Hearing Impairment Reliability	Hearing Impairment Theta Score SEM	Speech or Language Impairment N	Speech or Language Impairment Reliability	Speech or Language Impairment Theta Score SEM
ELA 3	1,313	0.87	0.40	39	0.83	0.38	200	0.82	0.47
ELA 4	1,528	0.86	0.40	49	0.89	0.42	182	0.81	0.41
ELA 5	1,612	0.87	0.39	35	0.69	0.39	168	0.76	0.41
ELA 6	1,749	0.84	0.38	59	0.81	0.38	118	0.79	0.41
ELA 7	1,782	0.89	0.41	43	0.74	0.39	107	0.84	0.49
ELA 8	1,772	0.82	0.38	44	0.70	0.36	103	0.84	0.42
ELA 11	1,680	0.88	0.40	44	0.88	0.41	47	0.78	0.41
Mathematics 3	1,311	0.76	0.42	38	0.74	0.38	201	0.76	0.37
Mathematics 4	1,503	0.80	0.37	48	0.59	0.36	184	0.73	0.37
Mathematics 5	1,570	0.79	0.38	37	0.85	0.39	165	0.67	0.35
Mathematics 6	1,682	0.68	0.43	58	0.74	0.36	115	0.75	0.35
Mathematics 7	1,772	0.80	0.41	44	0.68	0.34	107	0.69	0.35
Mathematics 8	1,747	0.78	0.36	43	0.76	0.33	103	0.81	0.35
Mathematics 11	1,665	0.81	0.40	43	0.84	0.37	46	0.76	0.36

Table 8.F.11 Reliabilities and SEMs by Primary Disabilities (Continued)

Content Area and Grade	Visual Impairment N	Visual Impairment Reliability	Visual Impairment Theta Score SEM	Emotional Disturbance N	Emotional Disturbance Reliability	Emotional Disturbance Theta Score SEM	Orthopedic Impairment N	Orthopedic Impairment Reliability	Orthopedic Impairment Theta Score SEM
ELA 3	10	NA	NA	23	0.79	0.44	98	0.91	0.41
ELA 4	13	0.84	0.42	28	0.72	0.72	140	0.91	0.43
ELA 5	12	0.89	0.39	34	0.84	0.43	141	0.9	0.41
ELA 6	17	0.85	0.37	33	0.83	0.42	145	0.88	0.39
ELA 7	13	0.90	0.41	47	0.85	0.42	143	0.9	0.41
ELA 8	17	0.79	0.37	35	0.84	0.40	132	0.89	0.42
ELA 11	20	0.92	0.42	35	0.80	0.62	151	0.9	0.42
Mathematics 3	11	0.92	0.56	22	0.79	0.40	95	0.81	0.56
Mathematics 4	14	0.84	0.37	28	0.76	0.38	130	0.81	0.37
Mathematics 5	11	0.74	0.95	33	0.83	0.36	138	0.85	0.39
Mathematics 6	16	0.83	0.38	32	0.77	0.36	133	0.75	0.52
Mathematics 7	10	NA	NA	48	0.80	0.36	142	0.84	0.48
Mathematics 8	16	0.82	0.35	35	0.82	0.34	123	0.85	0.37
Mathematics 11	18	0.89	0.42	37	0.78	0.64	147	0.79	0.50

Table 8.F.12 Reliabilities and SEMs by Primary Disabilities (Continued)

Content Area and Grade	Other Health Impairment N	Other Health Impairment Reliability	Other Health Impairment Theta Score SEM	Specific Learning Disability N	Specific Learning Disability Reliability	Specific Learning Disability Theta Score SEM	Deaf-Blindness N	Deaf-Blindness Reliability	Deaf-Blindness Theta Score SEM
ELA 3	282	0.86	0.47	287	0.68	0.54	0	NA	NA
ELA 4	281	0.84	0.45	392	0.76	0.45	0	NA	NA
ELA 5	250	0.88	0.43	397	0.75	0.47	0	NA	NA
ELA 6	236	0.84	0.43	383	0.76	0.43	1	NA	NA
ELA 7	281	0.86	0.45	419	0.82	0.43	0	NA	NA
ELA 8	258	0.84	0.39	343	0.75	0.44	0	NA	NA
ELA 11	182	0.88	0.43	275	0.81	0.44	0	NA	NA
Mathematics 3	275	0.79	0.37	291	0.73	0.38	0	NA	NA
Mathematics 4	278	0.79	0.37	391	0.75	0.38	0	NA	NA
Mathematics 5	247	0.82	0.37	396	0.75	0.38	0	NA	NA
Mathematics 6	226	0.75	0.36	377	0.77	0.37	1	NA	NA
Mathematics 7	277	0.81	0.36	422	0.76	0.37	0	NA	NA
Mathematics 8	258	0.80	0.34	340	0.74	0.34	0	NA	NA
Mathematics 11	178	0.85	0.37	274	0.75	0.38	1	NA	NA

Table 8.F.13 Reliabilities and SEMs by Primary Disabilities (Continued)

Content Area and Grade	Multiple Disabilities N	Multiple Disabilities Reliability	Multiple Disabilities Theta Score SEM	Autism N	Autism Reliability	Autism Theta Score SEM
ELA 3	126	0.89	0.44	1,730	0.88	0.44
ELA 4	144	0.90	0.42	1,680	0.88	0.42
ELA 5	161	0.88	0.39	1,638	0.88	0.42
ELA 6	159	0.87	0.46	1,653	0.86	0.39
ELA 7	139	0.91	0.43	1,562	0.89	0.43
ELA 8	135	0.87	0.42	1,517	0.86	0.39
ELA 11	123	0.91	0.41	1,258	0.89	0.42
Mathematics 3	127	0.78	0.61	1,724	0.81	0.40
Mathematics 4	134	0.83	0.48	1,644	0.82	0.38
Mathematics 5	156	0.85	0.42	1,604	0.81	0.43
Mathematics 6	143	0.67	0.61	1,577	0.76	0.41
Mathematics 7	134	0.77	0.53	1,548	0.83	0.38
Mathematics 8	126	0.84	0.36	1,464	0.78	0.33
Mathematics 11	118	0.84	0.48	1,250	0.84	0.42

Table 8.F.14 Reliabilities and SEMs by Primary Disabilities (Continued)

Content Area and Grade	Traumatic Brain Injury N	Traumatic Brain Injury Reliability	Traumatic Brain Injury Theta Score SEM	Not Classified N	Not Classified Reliability	Not Classified Theta Score SEM
ELA 3	19	0.82	0.38	0	NA	NA
ELA 4	18	0.87	0.40	0	NA	NA
ELA 5	17	0.87	0.40	0	NA	NA
ELA 6	26	0.89	0.41	0	NA	NA
ELA 7	21	0.91	0.45	0	NA	NA
ELA 8	19	0.74	0.39	0	NA	NA
ELA 11	25	0.92	0.42	0	NA	NA
Mathematics 3	17	0.49	0.35	0	NA	NA
Mathematics 4	17	0.30	0.35	0	NA	NA
Mathematics 5	16	0.80	0.35	0	NA	NA
Mathematics 6	26	0.87	0.41	0	NA	NA
Mathematics 7	19	0.71	0.34	0	NA	NA
Mathematics 8	19	0.76	0.33	0	NA	NA
Mathematics 11	25	0.85	0.39	0	NA	NA

Table 8.F.15 Reliabilities and SEMs by Accommodation

Content Area and Grade	Using Accommodations N	Using Accommodations Reliability	Using Accommodations Theta Score SEM	Not Using Accommodations N	Not Using Accommodations Reliability	Not Using Accommodations Theta Score SEM
ELA 3	1,303	0.87	0.45	2,824	0.88	0.43
ELA 4	1,551	0.88	0.41	2,904	0.88	0.42
ELA 5	1,662	0.88	0.42	2,803	0.88	0.41
ELA 6	1,595	0.86	0.39	2,984	0.86	0.40
ELA 7	1,625	0.89	0.42	2,932	0.89	0.43
ELA 8	1,500	0.85	0.39	2,875	0.85	0.39
ELA 11	719	0.89	0.40	3,121	0.89	0.42
Mathematics 3	827	0.81	0.44	3,285	0.80	0.41
Mathematics 4	1,406	0.81	0.38	2,965	0.82	0.38
Mathematics 5	1,467	0.82	0.38	2,906	0.81	0.41
Mathematics 6	1,547	0.77	0.41	2,839	0.73	0.42
Mathematics 7	1,584	0.81	0.40	2,939	0.83	0.39
Mathematics 8	1,445	0.79	0.36	2,829	0.80	0.34
Mathematics 11	656	0.84	0.42	3,146	0.83	0.41

Table 8.F.16 Reliabilities and SEMs by Designated Support

Content Area and Grade	Using Designated Supports N	Using Designated Supports Reliability	Using Designated Supports Theta Score SEM	Not Using Designated Supports N	Not Using Designated Supports Reliability	Not Using Designated Supports Theta Score SEM
ELA 3	1,566	0.87	0.44	2,561	0.89	0.43
ELA 4	1,893	0.88	0.41	2,562	0.88	0.43
ELA 5	2,070	0.88	0.41	2,395	0.88	0.41
ELA 6	2,011	0.86	0.39	2,568	0.86	0.40
ELA 7	2,066	0.89	0.42	2,491	0.90	0.43
ELA 8	1,880	0.85	0.39	2,495	0.85	0.39
ELA 11	1,028	0.88	0.42	2,812	0.89	0.41
Mathematics 3	1,563	0.79	0.40	2,549	0.81	0.42
Mathematics 4	1,864	0.80	0.38	2,507	0.82	0.38
Mathematics 5	2,028	0.81	0.37	2,345	0.82	0.43
Mathematics 6	1,944	0.75	0.43	2,442	0.75	0.41
Mathematics 7	2,036	0.81	0.41	2,487	0.83	0.38
Mathematics 8	1,839	0.79	0.35	2,435	0.80	0.34
Mathematics 11	1,025	0.84	0.42	2,777	0.83	0.41

Table 8.F.17 Reliabilities and SEMs by Version—ELA

Content Area and Grade	Version	N	Reliability	Theta Score SEM
ELA 3	1	1,084	0.87	0.47
ELA 3	2	757	0.88	0.42
ELA 3	3	755	0.88	0.42
ELA 3	4	787	0.89	0.42
ELA 3	5	739	0.88	0.43
ELA 4	1	1,045	0.86	0.41
ELA 4	2	832	0.88	0.41
ELA 4	3	807	0.87	0.40
ELA 4	4	887	0.88	0.42
ELA 4	5	859	0.88	0.43
ELA 5	1	1,029	0.87	0.42
ELA 5	2	906	0.87	0.40
ELA 5	3	833	0.86	0.40
ELA 5	4	821	0.88	0.40
ELA 5	5	848	0.88	0.43
ELA 6	1	1,078	0.85	0.39
ELA 6	2	846	0.85	0.39
ELA 6	3	949	0.85	0.39
ELA 6	4	835	0.85	0.39
ELA 6	5	832	0.86	0.40
ELA 7	1	919	0.88	0.41
ELA 7	2	834	0.90	0.42
ELA 7	3	968	0.87	0.43
ELA 7	4	915	0.89	0.42
ELA 7	5	885	0.88	0.42
ELA 8	1	914	0.84	0.38
ELA 8	2	786	0.82	0.38
ELA 8	3	937	0.84	0.40
ELA 8	4	859	0.83	0.38
ELA 8	5	844	0.85	0.39
ELA 11	1	895	0.89	0.42
ELA 11	2	713	0.88	0.42
ELA 11	3	756	0.88	0.40
ELA 11	4	754	0.89	0.41
ELA 11	5	705	0.88	0.41

Table 8.F.18 Reliabilities and SEMs by Version—Mathematics

Content Area and Grade	Version	N	Reliability	Theta Score SEM
Mathematics 3	1	1,074	0.80	0.37
Mathematics 3	2	750	0.79	0.37
Mathematics 3	3	748	0.81	0.43
Mathematics 3	4	784	0.80	0.39
Mathematics 3	5	738	0.79	0.45
Mathematics 4	1	1,040	0.80	0.38
Mathematics 4	2	810	0.80	0.38
Mathematics 4	3	802	0.80	0.37
Mathematics 4	4	850	0.80	0.38
Mathematics 4	5	844	0.82	0.37
Mathematics 5	1	1,011	0.81	0.41
Mathematics 5	2	873	0.78	0.40
Mathematics 5	3	815	0.81	0.39
Mathematics 5	4	802	0.81	0.37
Mathematics 5	5	838	0.82	0.39
Mathematics 6	1	1,027	0.77	0.38
Mathematics 6	2	800	0.72	0.38
Mathematics 6	3	917	0.73	0.43
Mathematics 6	4	809	0.73	0.44
Mathematics 6	5	806	0.76	0.39
Mathematics 7	1	919	0.80	0.37
Mathematics 7	2	821	0.82	0.39
Mathematics 7	3	967	0.82	0.35
Mathematics 7	4	915	0.79	0.41
Mathematics 7	5	864	0.82	0.37
Mathematics 8	1	904	0.80	0.36
Mathematics 8	2	764	0.75	0.33
Mathematics 8	3	922	0.79	0.34
Mathematics 8	4	839	0.75	0.35
Mathematics 8	5	813	0.79	0.34
Mathematics 11	1	879	0.83	0.45
Mathematics 11	2	707	0.84	0.40
Mathematics 11	3	755	0.82	0.37
Mathematics 11	4	750	0.84	0.42
Mathematics 11	5	696	0.83	0.38

Note: In [Table 8.F.19](#) through [Table 8.F.32](#), the pathway indicates the set of modules a given student received.

Pathway	Combination of Modules
Easy	Stage 1 (as router) and Stage 2 Easy Module
Moderate	Stage 1 (as router) and Stage 2 Moderate Module
Hard	Stage 1 (as router) and Stage 2 Hard Module

Table 8.F.19 Scale Score Conversion Tables with CSEMs for ELA, Grade Three

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.8401	303	28	-6.0000	2.2131	303	33	-6.0000	2.0641	303	31
1	-4.7534	1.0315	303	15	-4.3610	1.0404	303	16	-4.5076	1.0389	303	16
2	-3.9952	0.7514	303	11	-3.5866	0.7607	303	11	-3.7345	0.7611	303	11
3	-3.5249	0.6306	303	9	-3.1042	0.6384	303	10	-3.2500	0.6414	303	10
4	-3.1729	0.5601	303	8	-2.7443	0.5654	307	8	-2.8849	0.5712	305	9
5	-2.8862	0.5127	305	8	-2.4534	0.5152	311	8	-2.5863	0.5236	309	8
6	-2.6413	0.4781	308	7	-2.2073	0.4781	315	7	-2.3307	0.4885	313	7
7	-2.4255	0.4514	312	7	-1.9924	0.4495	318	7	-2.1053	0.4614	316	7
8	-2.2314	0.4301	315	6	-1.8006	0.4270	321	6	-1.9024	0.4399	319	7
9	-2.0539	0.4127	317	6	-1.6259	0.4090	324	6	-1.7165	0.4227	322	6
10	-1.8894	0.3984	320	6	-1.4645	0.3947	326	6	-1.5437	0.4088	325	6
11	-1.7354	0.3865	322	6	-1.3133	0.3832	328	6	-1.3812	0.3977	327	6
12	-1.5898	0.3768	324	6	-1.1699	0.3739	330	6	-1.2265	0.3888	330	6
13	-1.4508	0.3689	326	6	-1.0329	0.3665	333	5	-1.0781	0.3817	332	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
14	-1.3170	0.3625	328	5	-0.9007	0.3606	334	5	-0.9345	0.3761	334	6
15	-1.1874	0.3576	330	5	-0.7723	0.3558	336	5	-0.7947	0.3715	336	6
16	-1.0608	0.3538	332	5	-0.6470	0.3522	338	5	-0.6580	0.3679	338	6
17	-0.9366	0.3512	334	5	-0.5239	0.3495	340	5	-0.5236	0.3651	340	5
18	-0.8138	0.3495	336	5	-0.4023	0.3477	342	5	-0.3910	0.3630	342	5
19	-0.6919	0.3487	338	5	-0.2817	0.3469	344	5	-0.2597	0.3616	344	5
20	-0.5702	0.3489	339	5	-0.1612	0.3471	346	5	-0.1292	0.3610	346	5
21	-0.4480	0.3500	341	5	-0.0402	0.3484	347	5	0.0012	0.3612	348	5
22	-0.3247	0.3522	343	5	0.0821	0.3510	349	5	0.1321	0.3622	350	5
23	-0.1995	0.3555	345	5	0.2066	0.3548	351	5	0.2641	0.3642	352	5
24	-0.0714	0.3603	347	5	0.3345	0.3603	353	5	0.3979	0.3673	354	6
25	0.0608	0.3669	349	6	0.4668	0.3674	355	6	0.5344	0.3715	356	6
26	0.1986	0.3757	351	6	0.6053	0.3768	357	6	0.6744	0.3770	358	6
27	0.3440	0.3871	353	6	0.7517	0.3887	359	6	0.8192	0.3840	360	6
28	0.4996	0.4020	355	6	0.9086	0.4039	362	6	0.9702	0.3931	363	6
29	0.6689	0.4214	358	6	1.0796	0.4234	364	6	1.1292	0.4046	365	6
30	0.8571	0.4471	361	7	1.2695	0.4490	367	7	1.2989	0.4196	367	6
31	1.0722	0.4817	364	7	1.4862	0.4833	370	7	1.4831	0.4393	370	7
32	1.3271	0.5303	368	8	1.7426	0.5315	374	8	1.6874	0.4656	373	7
33	1.6460	0.6034	373	9	2.0626	0.6043	379	9	1.9206	0.5016	377	8
34	2.0825	0.7284	379	11	2.5001	0.7291	386	11	2.1974	0.5530	381	8

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
35	2.8066	1.0150	390	15	3.2255	1.0158	396	15	2.5450	0.6306	386	9
36	6.0000	4.8668	399	73	6.0000	3.9457	399	59	3.0223	0.7617	393	11
37	NA	NA	NA	NA	NA	NA	NA	NA	3.8086	1.0520	399	16
38	NA	NA	NA	NA	NA	NA	NA	NA	6.0000	2.8577	399	43

Table 8.F.20 Scale Score Conversion Tables with CSEMs for ELA, Grade Four

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.9241	403	29	-6.0000	2.1942	403	33	-6.0000	2.6223	403	39
1	-4.6653	1.0266	403	15	-4.3899	1.0314	403	15	-4.0188	1.0358	403	16
2	-3.9169	0.7451	403	11	-3.6322	0.7510	403	11	-3.2523	0.7566	403	11
3	-3.4555	0.6238	403	9	-3.1625	0.6300	403	9	-2.7745	0.6363	403	10
4	-3.1115	0.5534	403	8	-2.8112	0.5597	403	8	-2.4154	0.5664	409	8
5	-2.8317	0.5065	403	8	-2.5247	0.5128	407	8	-2.1215	0.5199	413	8
6	-2.5925	0.4727	406	7	-2.2794	0.4790	411	7	-1.8689	0.4865	417	7
7	-2.3814	0.4470	409	7	-2.0623	0.4535	414	7	-1.6446	0.4614	420	7
8	-2.1907	0.4267	412	6	-1.8657	0.4336	417	7	-1.4407	0.4419	423	7
9	-2.0157	0.4103	415	6	-1.6845	0.4178	420	6	-1.2522	0.4265	426	6
10	-1.8528	0.3968	417	6	-1.5153	0.4050	422	6	-1.0756	0.4141	429	6
11	-1.6998	0.3857	420	6	-1.3555	0.3946	425	6	-0.9082	0.4040	431	6
12	-1.5546	0.3765	422	6	-1.2032	0.3861	427	6	-0.7483	0.3957	434	6
13	-1.4157	0.3690	424	6	-1.0568	0.3791	429	6	-0.5944	0.3888	436	6
14	-1.2817	0.3630	426	5	-0.9152	0.3735	431	6	-0.4455	0.3831	438	6
15	-1.1516	0.3584	428	5	-0.7773	0.3690	433	6	-0.3004	0.3785	440	6
16	-1.0242	0.3552	430	5	-0.6424	0.3655	435	5	-0.1584	0.3750	443	6
17	-0.8987	0.3533	432	5	-0.5098	0.3629	437	5	-0.0187	0.3725	445	6
18	-0.7740	0.3527	433	5	-0.3787	0.3611	439	5	0.1195	0.3711	447	6
19	-0.6494	0.3534	435	5	-0.2485	0.3602	441	5	0.2572	0.3710	449	6
20	-0.5238	0.3553	437	5	-0.1188	0.3602	443	5	0.3954	0.3723	451	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.3964	0.3586	439	5	0.0113	0.3611	445	5	0.5350	0.3751	453	6
22	-0.2661	0.3633	441	5	0.1424	0.3629	447	5	0.6775	0.3798	455	6
23	-0.1318	0.3696	443	6	0.2753	0.3659	449	5	0.8242	0.3864	457	6
24	0.0078	0.3777	445	6	0.4107	0.3701	451	6	0.9770	0.3955	460	6
25	0.1543	0.3879	447	6	0.5498	0.3757	453	6	1.1381	0.4074	462	6
26	0.3097	0.4008	450	6	0.6937	0.3830	455	6	1.3102	0.4227	465	6
27	0.4767	0.4169	452	6	0.8440	0.3924	458	6	1.4971	0.4424	467	7
28	0.6590	0.4373	455	7	1.0026	0.4042	460	6	1.7040	0.4680	471	7
29	0.8616	0.4636	458	7	1.1720	0.4192	463	6	1.9388	0.5022	474	8
30	1.0924	0.4984	461	7	1.3557	0.4385	465	7	2.2143	0.5498	478	8
31	1.3644	0.5467	465	8	1.5588	0.4636	468	7	2.5546	0.6211	483	9
32	1.7016	0.6188	471	9	1.7890	0.4973	472	7	3.0130	0.7434	490	11
33	2.1574	0.7419	477	11	2.0593	0.5446	476	8	3.7592	1.0258	499	15
34	2.9017	1.0251	489	15	2.3937	0.6161	481	9	6.0000	3.0024	499	45
35	6.0000	4.5976	499	69	2.8456	0.7389	488	11	NA	NA	NA	NA
36	NA	NA	NA	NA	3.5851	1.0225	499	15	NA	NA	NA	NA
37	NA	NA	NA	NA	6.0000	3.2817	499	49	NA	NA	NA	NA

Table 8.F.21 Scale Score Conversion Tables with CSEMs for ELA, Grade Five

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.4398	503	22	-6.0000	1.6123	503	24	-6.0000	1.4754	503	22
1	-5.2690	1.0301	503	15	-5.0274	1.0367	503	16	-5.2161	1.0499	503	16
2	-4.5128	0.7507	503	11	-4.2579	0.7594	503	11	-4.4192	0.7771	503	12
3	-4.0426	0.6314	503	9	-3.7748	0.6412	503	10	-3.9088	0.6623	503	10
4	-3.6884	0.5631	503	8	-3.4086	0.5732	503	9	-3.5146	0.5975	503	9
5	-3.3972	0.5183	503	8	-3.1064	0.5283	503	8	-3.1834	0.5556	503	8
6	-3.1453	0.4866	503	7	-2.8447	0.4959	503	7	-2.8913	0.5263	503	8
7	-2.9201	0.4629	503	7	-2.6111	0.4712	506	7	-2.6260	0.5044	506	8
8	-2.7144	0.4446	504	7	-2.3984	0.4516	509	7	-2.3802	0.4872	509	7
9	-2.5233	0.4299	507	6	-2.2017	0.4355	512	7	-2.1497	0.4729	513	7
10	-2.3436	0.4178	510	6	-2.0178	0.4221	515	6	-1.9318	0.4605	516	7
11	-2.1733	0.4076	512	6	-1.8444	0.4107	517	6	-1.7248	0.4492	519	7
12	-2.0106	0.3989	515	6	-1.6796	0.4010	520	6	-1.5276	0.4387	522	7
13	-1.8544	0.3914	517	6	-1.5220	0.3928	522	6	-1.3394	0.4287	525	6
14	-1.7037	0.3849	519	6	-1.3705	0.3858	524	6	-1.1597	0.4190	528	6
15	-1.5577	0.3792	522	6	-1.2238	0.3799	527	6	-0.9878	0.4098	530	6
16	-1.4156	0.3744	524	6	-1.0813	0.3750	529	6	-0.8233	0.4011	533	6
17	-1.2769	0.3705	526	6	-0.9422	0.3710	531	6	-0.6656	0.3929	535	6
18	-1.1407	0.3674	528	6	-0.8057	0.3678	533	6	-0.5141	0.3855	537	6
19	-1.0065	0.3652	530	5	-0.6713	0.3653	535	5	-0.3679	0.3789	539	6
20	-0.8735	0.3641	532	5	-0.5385	0.3634	537	5	-0.2264	0.3734	542	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.7410	0.3639	534	5	-0.4068	0.3622	539	5	-0.0886	0.3689	544	6
22	-0.6081	0.3649	536	5	-0.2757	0.3617	541	5	0.0464	0.3657	546	5
23	-0.4742	0.3670	538	6	-0.1447	0.3619	543	5	0.1795	0.3639	548	5
24	-0.3383	0.3703	540	6	-0.0133	0.3630	545	5	0.3118	0.3636	550	5
25	-0.1995	0.3749	542	6	0.1193	0.3652	547	5	0.4445	0.3650	552	5
26	-0.0566	0.3810	544	6	0.2541	0.3688	549	6	0.5789	0.3681	554	6
27	0.0915	0.3887	546	6	0.3921	0.3741	551	6	0.7162	0.3732	556	6
28	0.2464	0.3984	549	6	0.5348	0.3816	553	6	0.8582	0.3805	558	6
29	0.4100	0.4105	551	6	0.6844	0.3920	555	6	1.0068	0.3904	560	6
30	0.5847	0.4256	554	6	0.8434	0.4059	558	6	1.1641	0.4031	562	6
31	0.7739	0.4448	557	7	1.0156	0.4245	560	6	1.3331	0.4193	565	6
32	0.9827	0.4696	560	7	1.2063	0.4497	563	7	1.5175	0.4400	568	7
33	1.2185	0.5028	563	8	1.4236	0.4840	566	7	1.7226	0.4665	571	7
34	1.4941	0.5493	567	8	1.6808	0.5326	570	8	1.9562	0.5014	574	8
35	1.8332	0.6196	572	9	2.0024	0.6059	575	9	2.2314	0.5497	578	8
36	2.2891	0.7413	579	11	2.4423	0.7311	582	11	2.5721	0.6219	584	9
37	3.0315	1.0236	590	15	3.1711	1.0176	593	15	3.0320	0.7450	590	11
38	6.0000	4.3177	599	65	6.0000	4.0472	599	61	3.7817	1.0281	599	15
39	NA	NA	NA	NA	NA	NA	NA	NA	6.0000	2.9630	599	44

Table 8.F.22 Scale Score Conversion Tables with CSEMs for ELA, Grade Six

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	2.1001	603	26	-6.0000	1.8995	603	24	-6.0000	2.1069	603	26
1	-4.4782	1.0324	603	13	-4.6862	1.0327	603	13	-4.4689	1.0351	603	13
2	-3.7215	0.7482	603	9	-3.9266	0.7517	603	9	-3.7055	0.7534	603	9
3	-3.2590	0.6219	604	8	-3.4570	0.6292	603	8	-3.2342	0.6300	605	8
4	-2.9207	0.5455	608	7	-3.1078	0.5567	606	7	-2.8846	0.5566	609	7
5	-2.6522	0.4926	612	6	-2.8259	0.5072	610	6	-2.6030	0.5067	612	6
6	-2.4290	0.4534	615	6	-2.5874	0.4705	613	6	-2.3649	0.4704	615	6
7	-2.2372	0.4232	617	5	-2.3794	0.4422	615	6	-2.1567	0.4430	618	6
8	-2.0682	0.3994	619	5	-2.1939	0.4197	618	5	-1.9698	0.4220	620	5
9	-1.9163	0.3805	621	5	-2.0253	0.4016	620	5	-1.7986	0.4060	623	5
10	-1.7773	0.3653	623	5	-1.8699	0.3870	622	5	-1.6388	0.3937	625	5
11	-1.6483	0.3532	624	4	-1.7248	0.3751	623	5	-1.4875	0.3844	626	5
12	-1.5269	0.3436	626	4	-1.5876	0.3656	625	5	-1.3423	0.3777	628	5
13	-1.4115	0.3360	627	4	-1.4566	0.3581	627	4	-1.2015	0.3729	630	5
14	-1.3005	0.3303	629	4	-1.3305	0.3522	628	4	-1.0636	0.3697	632	5
15	-1.1928	0.3262	630	4	-1.2080	0.3477	630	4	-0.9275	0.3679	633	5
16	-1.0873	0.3234	631	4	-1.0882	0.3446	631	4	-0.7924	0.3672	635	5
17	-0.9831	0.3220	633	4	-0.9701	0.3425	633	4	-0.6574	0.3674	637	5
18	-0.8794	0.3218	634	4	-0.8531	0.3416	634	4	-0.5221	0.3682	638	5
19	-0.7755	0.3229	635	4	-0.7363	0.3417	636	4	-0.3859	0.3697	640	5
20	-0.6705	0.3250	637	4	-0.6192	0.3428	637	4	-0.2485	0.3715	642	5

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.5638	0.3284	638	4	-0.5009	0.3450	639	4	-0.1096	0.3736	644	5
22	-0.4545	0.3329	639	4	-0.3807	0.3482	640	4	0.0310	0.3761	645	5
23	-0.3417	0.3387	641	4	-0.2579	0.3525	642	4	0.1736	0.3788	647	5
24	-0.2245	0.3458	642	4	-0.1316	0.3580	643	4	0.3183	0.3819	649	5
25	-0.1020	0.3544	644	4	-0.0010	0.3647	645	5	0.4656	0.3855	651	5
26	0.0273	0.3646	645	5	0.1350	0.3728	647	5	0.6160	0.3900	653	5
27	0.1647	0.3769	647	5	0.2776	0.3824	648	5	0.7704	0.3957	655	5
28	0.3123	0.3916	649	5	0.4282	0.3938	650	5	0.9299	0.4031	657	5
29	0.4726	0.4094	651	5	0.5886	0.4074	652	5	1.0962	0.4128	659	5
30	0.6492	0.4314	653	5	0.7613	0.4238	655	5	1.2719	0.4257	661	5
31	0.8472	0.4591	656	6	0.9494	0.4440	657	6	1.4603	0.4430	663	6
32	1.0744	0.4954	658	6	1.1579	0.4697	659	6	1.6667	0.4664	666	6
33	1.3440	0.5452	662	7	1.3941	0.5035	662	6	1.8990	0.4988	669	6
34	1.6803	0.6189	666	8	1.6707	0.5504	666	7	2.1704	0.5453	672	7
35	2.1375	0.7438	672	9	2.0112	0.6209	670	8	2.5052	0.6163	676	8
36	2.8866	1.0284	681	13	2.4687	0.7425	676	9	2.9573	0.7390	682	9
37	6.0000	4.6135	699	58	3.2130	1.0246	685	13	3.6971	1.0228	691	13
38	NA	NA	NA	NA	6.0000	3.9417	699	49	6.0000	3.1034	699	39

Table 8.F.23 Scale Score Conversion Tables with CSEMs for ELA, Grade Seven

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.4957	703	22	-6.0000	1.7267	703	26	-6.0000	1.8413	703	28
1	-5.1874	1.0371	703	16	-4.8725	1.0529	703	16	-4.7227	1.0681	703	16
2	-4.4173	0.7596	703	11	-4.0698	0.7803	703	12	-3.8857	0.8033	703	12
3	-3.9341	0.6412	703	10	-3.5552	0.6646	703	10	-3.3329	0.6940	703	10
4	-3.5679	0.5733	703	9	-3.1593	0.5979	703	9	-2.8956	0.6323	703	9
5	-3.2654	0.5287	703	8	-2.8289	0.5535	703	8	-2.5224	0.5911	707	9
6	-3.0029	0.4971	703	7	-2.5406	0.5214	707	8	-2.1915	0.5600	712	8
7	-2.7677	0.4734	703	7	-2.2818	0.4967	711	7	-1.8922	0.5342	717	8
8	-2.5524	0.4550	707	7	-2.0449	0.4769	714	7	-1.6189	0.5113	721	8
9	-2.3521	0.4401	710	7	-1.8252	0.4606	718	7	-1.3679	0.4903	724	7
10	-2.1638	0.4279	713	6	-1.6194	0.4468	721	7	-1.1369	0.4709	728	7
11	-1.9850	0.4175	715	6	-1.4249	0.4350	724	7	-0.9235	0.4528	731	7
12	-1.8144	0.4085	718	6	-1.2400	0.4248	726	6	-0.7258	0.4363	734	7
13	-1.6507	0.4005	720	6	-1.0633	0.4158	729	6	-0.5418	0.4215	737	6
14	-1.4930	0.3935	723	6	-0.8936	0.4080	732	6	-0.3697	0.4084	739	6
15	-1.3406	0.3873	725	6	-0.7298	0.4013	734	6	-0.2075	0.3971	742	6
16	-1.1926	0.3819	727	6	-0.5710	0.3956	736	6	-0.0535	0.3877	744	6
17	-1.0485	0.3774	729	6	-0.4162	0.3910	739	6	0.0940	0.3803	746	6
18	-0.9073	0.3739	731	6	-0.2646	0.3876	741	6	0.2365	0.3747	749	6
19	-0.7684	0.3715	733	6	-0.1152	0.3855	743	6	0.3755	0.3710	751	6
20	-0.6307	0.3705	736	6	0.0332	0.3849	745	6	0.5125	0.3693	753	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.4933	0.3708	738	6	0.1818	0.3859	748	6	0.6489	0.3694	755	6
22	-0.3551	0.3727	740	6	0.3318	0.3888	750	6	0.7862	0.3715	757	6
23	-0.2149	0.3762	742	6	0.4849	0.3939	752	6	0.9257	0.3757	759	6
24	-0.0713	0.3816	744	6	0.6430	0.4014	755	6	1.0693	0.3823	761	6
25	0.0771	0.3890	746	6	0.8083	0.4120	757	6	1.2189	0.3914	763	6
26	0.2323	0.3988	748	6	0.9838	0.4261	760	6	1.3769	0.4037	766	6
27	0.3963	0.4113	751	6	1.1731	0.4447	763	7	1.5463	0.4198	768	6
28	0.5720	0.4272	754	6	1.3816	0.4693	766	7	1.7313	0.4408	771	7
29	0.7630	0.4473	756	7	1.6172	0.5026	769	8	1.9375	0.4682	774	7
30	0.9746	0.4733	760	7	1.8927	0.5494	773	8	2.1736	0.5047	778	8
31	1.2145	0.5076	763	8	2.2321	0.6200	778	9	2.4533	0.5552	782	8
32	1.4957	0.5550	767	8	2.6887	0.7419	785	11	2.8018	0.6297	787	9
33	1.8420	0.6261	773	9	3.4324	1.0243	796	15	3.2740	0.7548	794	11
34	2.3068	0.7478	780	11	6.0000	3.5350	799	53	4.0414	1.0382	799	16
35	3.0599	1.0292	791	15	NA	NA	NA	NA	6.0000	2.5866	799	39
36	6.0000	4.2340	799	64	NA	NA	NA	NA	NA	NA	NA	NA

Table 8.F.24 Scale Score Conversion Tables with CSEMs for ELA, Grade Eight

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.9190	803	24	-6.0000	1.9745	803	25	-6.0000	1.9033	803	24
1	-4.6641	1.0340	803	13	-4.6008	1.0382	803	13	-4.6778	1.0379	803	13
2	-3.9004	0.7554	803	9	-3.8280	0.7616	803	10	-3.9050	0.7620	803	10
3	-3.4235	0.6362	805	8	-3.3414	0.6440	806	8	-3.4170	0.6457	805	8
4	-3.0638	0.5674	809	7	-2.9716	0.5764	810	7	-3.0441	0.5799	809	7
5	-2.7683	0.5217	813	7	-2.6658	0.5315	814	7	-2.7333	0.5370	813	7
6	-2.5136	0.4887	816	6	-2.4009	0.4988	817	6	-2.4615	0.5067	817	6
7	-2.2873	0.4633	819	6	-2.1648	0.4735	820	6	-2.2165	0.4837	820	6
8	-2.0820	0.4430	821	6	-1.9504	0.4528	823	6	-1.9916	0.4650	823	6
9	-1.8933	0.4261	824	5	-1.7533	0.4352	826	5	-1.7826	0.4491	825	6
10	-1.7178	0.4116	826	5	-1.5705	0.4199	828	5	-1.5871	0.4350	828	5
11	-1.5536	0.3990	828	5	-1.3998	0.4064	830	5	-1.4034	0.4221	830	5
12	-1.3987	0.3879	830	5	-1.2394	0.3944	832	5	-1.2302	0.4102	832	5
13	-1.2519	0.3782	832	5	-1.0880	0.3838	834	5	-1.0663	0.3993	834	5
14	-1.1121	0.3696	834	5	-0.9441	0.3746	836	5	-0.9107	0.3894	836	5
15	-0.9782	0.3622	835	5	-0.8067	0.3667	837	5	-0.7624	0.3808	838	5
16	-0.8492	0.3560	837	4	-0.6746	0.3602	839	5	-0.6202	0.3734	840	5
17	-0.7242	0.3509	838	4	-0.5467	0.3550	841	4	-0.4830	0.3673	841	5
18	-0.6024	0.3471	840	4	-0.4220	0.3511	842	4	-0.3498	0.3626	843	5
19	-0.4827	0.3446	841	4	-0.2996	0.3486	844	4	-0.2196	0.3591	845	4
20	-0.3644	0.3434	843	4	-0.1785	0.3473	845	4	-0.0914	0.3569	846	4

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.2464	0.3435	844	4	-0.0578	0.3473	847	4	0.0358	0.3561	848	4
22	-0.1278	0.3452	846	4	0.0633	0.3486	848	4	0.1627	0.3564	850	4
23	-0.0076	0.3484	847	4	0.1857	0.3513	850	4	0.2904	0.3581	851	4
24	0.1155	0.3534	849	4	0.3106	0.3553	851	4	0.4197	0.3612	853	5
25	0.2428	0.3602	851	5	0.4388	0.3609	853	5	0.5519	0.3658	854	5
26	0.3758	0.3692	852	5	0.5716	0.3680	855	5	0.6880	0.3721	856	5
27	0.5164	0.3807	854	5	0.7104	0.3770	856	5	0.8295	0.3802	858	5
28	0.6667	0.3950	856	5	0.8567	0.3881	858	5	0.9780	0.3907	860	5
29	0.8297	0.4128	858	5	1.0126	0.4017	860	5	1.1357	0.4038	862	5
30	1.0093	0.4351	860	5	1.1806	0.4184	862	5	1.3053	0.4201	864	5
31	1.2107	0.4632	863	6	1.3643	0.4392	865	5	1.4904	0.4407	866	6
32	1.4420	0.4997	866	6	1.5687	0.4656	867	6	1.6962	0.4671	869	6
33	1.7160	0.5493	869	7	1.8013	0.5002	870	6	1.9303	0.5017	872	6
34	2.0567	0.6222	873	8	2.0750	0.5480	873	7	2.2056	0.5496	875	7
35	2.5173	0.7455	879	9	2.4132	0.6194	878	8	2.5457	0.6210	879	8
36	3.2674	1.0280	888	13	2.8693	0.7417	883	9	3.0039	0.7432	885	9
37	6.0000	3.8229	899	48	3.6128	1.0243	893	13	3.7498	1.0256	894	13
38	NA	NA	NA	NA	6.0000	3.2325	899	40	6.0000	3.0171	899	38

Table 8.F.25 Scale Score Conversion Tables with CSEMs for ELA, Grade Eleven

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.8116	903	23	-6.0000	2.3224	903	29	-6.0000	2.2805	903	29
1	-4.7857	1.0317	903	13	-4.2587	1.0424	903	13	-4.2935	1.0451	903	13
2	-4.0268	0.7521	903	9	-3.4796	0.7640	904	10	-3.5073	0.7697	904	10
3	-3.5550	0.6321	903	8	-2.9922	0.6425	910	8	-3.0095	0.6516	910	8
4	-3.2006	0.5626	907	7	-2.6270	0.5699	915	7	-2.6311	0.5826	915	7
5	-2.9106	0.5163	911	6	-2.3312	0.5198	918	6	-2.3194	0.5358	919	7
6	-2.6616	0.4828	914	6	-2.0806	0.4823	921	6	-2.0512	0.5011	922	6
7	-2.4410	0.4571	917	6	-1.8622	0.4528	924	6	-1.8138	0.4740	925	6
8	-2.2415	0.4366	919	5	-1.6679	0.4291	927	5	-1.5995	0.4522	928	6
9	-2.0582	0.4198	922	5	-1.4921	0.4098	929	5	-1.4030	0.4345	930	5
10	-1.8878	0.4057	924	5	-1.3306	0.3940	931	5	-1.2205	0.4200	932	5
11	-1.7280	0.3938	926	5	-1.1804	0.3812	933	5	-1.0491	0.4082	934	5
12	-1.5768	0.3837	928	5	-1.0390	0.3709	935	5	-0.8863	0.3986	936	5
13	-1.4328	0.3751	930	5	-0.9044	0.3629	936	5	-0.7305	0.3908	938	5
14	-1.2948	0.3679	931	5	-0.7749	0.3568	938	4	-0.5802	0.3844	940	5
15	-1.1616	0.3619	933	5	-0.6491	0.3526	939	4	-0.4344	0.3791	942	5
16	-1.0323	0.3572	935	4	-0.5257	0.3501	941	4	-0.2924	0.3747	944	5
17	-0.9060	0.3535	936	4	-0.4035	0.3491	942	4	-0.1532	0.3711	946	5
18	-0.7819	0.3510	938	4	-0.2814	0.3497	944	4	-0.0165	0.3682	947	5
19	-0.6592	0.3494	939	4	-0.1583	0.3519	946	4	0.1184	0.3662	949	5
20	-0.5372	0.3490	941	4	-0.0332	0.3555	947	4	0.2520	0.3650	951	5

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.4152	0.3495	942	4	0.0949	0.3605	949	5	0.3852	0.3648	952	5
22	-0.2924	0.3512	944	4	0.2273	0.3671	950	5	0.5187	0.3658	954	5
23	-0.1681	0.3540	945	4	0.3651	0.3752	952	5	0.6534	0.3681	956	5
24	-0.0413	0.3581	947	4	0.5096	0.3850	954	5	0.7903	0.3720	957	5
25	0.0889	0.3635	949	5	0.6624	0.3967	956	5	0.9309	0.3778	959	5
26	0.2236	0.3704	950	5	0.8254	0.4107	958	5	1.0765	0.3856	961	5
27	0.3641	0.3792	952	5	1.0009	0.4274	960	5	1.2291	0.3958	963	5
28	0.5120	0.3900	954	5	1.1924	0.4480	962	6	1.3908	0.4088	965	5
29	0.6693	0.4034	956	5	1.4045	0.4738	965	6	1.5646	0.4253	967	5
30	0.8387	0.4199	958	5	1.6448	0.5076	968	6	1.7543	0.4461	969	6
31	1.0236	0.4406	960	6	1.9257	0.5544	972	7	1.9651	0.4728	972	6
32	1.2292	0.4669	963	6	2.2707	0.6246	976	8	2.2049	0.5079	975	6
33	1.4631	0.5015	966	6	2.7330	0.7457	982	9	2.4869	0.5561	979	7
34	1.7380	0.5493	969	7	3.4821	1.0269	991	13	2.8349	0.6279	983	8
35	2.0778	0.6207	973	8	6.0000	3.4415	999	43	3.3024	0.7500	989	9
36	2.5356	0.7430	979	9	NA	NA	NA	NA	4.0595	1.0314	998	13
37	3.2811	1.0254	989	13	NA	NA	NA	NA	6.0000	2.5784	999	32
38	6.0000	3.8067	999	48	NA	NA	NA	NA	NA	NA	NA	NA

Table 8.F.26 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Three

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	3.3007	303	62	-6.0000	3.3540	303	63	-6.0000	3.7780	303	71
1	-3.5793	1.0188	303	19	-3.5404	1.0229	303	19	-3.2852	1.0316	303	19
2	-2.8481	0.7327	303	14	-2.8005	0.7389	303	14	-2.5273	0.7509	303	14
3	-2.4062	0.6071	303	11	-2.3492	0.6150	303	12	-2.0583	0.6291	303	12
4	-2.0838	0.5326	303	10	-2.0170	0.5419	303	10	-1.7089	0.5573	309	10
5	-1.8275	0.4820	307	9	-1.7507	0.4922	308	9	-1.4260	0.5085	315	10
6	-1.6133	0.4448	311	8	-1.5266	0.4557	313	9	-1.1858	0.4727	319	9
7	-1.4283	0.4162	315	8	-1.3318	0.4275	316	8	-0.9754	0.4453	323	8
8	-1.2645	0.3936	318	7	-1.1587	0.4051	320	8	-0.7868	0.4238	327	8
9	-1.1167	0.3756	320	7	-1.0019	0.3869	323	7	-0.6144	0.4068	330	8
10	-0.9811	0.3610	323	7	-0.8580	0.3720	325	7	-0.4544	0.3934	333	7
11	-0.8550	0.3493	325	7	-0.7242	0.3599	328	7	-0.3038	0.3829	336	7
12	-0.7362	0.3400	327	6	-0.5982	0.3500	330	7	-0.1604	0.3747	338	7
13	-0.6231	0.3329	330	6	-0.4784	0.3422	332	6	-0.0222	0.3686	341	7
14	-0.5140	0.3275	332	6	-0.3634	0.3361	334	6	0.1120	0.3642	343	7
15	-0.4080	0.3239	334	6	-0.2519	0.3317	337	6	0.2436	0.3613	346	7
16	-0.3037	0.3218	336	6	-0.1428	0.3289	339	6	0.3737	0.3600	348	7
17	-0.2004	0.3212	338	6	-0.0351	0.3275	341	6	0.5033	0.3600	351	7
18	-0.0969	0.3221	339	6	0.0722	0.3276	343	6	0.6334	0.3615	353	7
19	0.0076	0.3244	341	6	0.1800	0.3291	345	6	0.7653	0.3646	356	7
20	0.1141	0.3283	343	6	0.2893	0.3322	347	6	0.8999	0.3693	358	7

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	0.2236	0.3337	345	6	0.4013	0.3370	349	6	1.0388	0.3759	361	7
22	0.3374	0.3410	348	6	0.5170	0.3436	351	6	1.1832	0.3843	363	7
23	0.4568	0.3501	350	7	0.6380	0.3523	353	7	1.3350	0.3949	366	7
24	0.5834	0.3616	352	7	0.7660	0.3634	356	7	1.4961	0.4079	369	8
25	0.7193	0.3758	355	7	0.9032	0.3774	358	7	1.6688	0.4235	373	8
26	0.8671	0.3934	358	7	1.0523	0.3951	361	7	1.8562	0.4423	376	8
27	1.0305	0.4154	361	8	1.2172	0.4175	364	8	2.0619	0.4651	380	9
28	1.2145	0.4433	364	8	1.4033	0.4461	368	8	2.2911	0.4930	384	9
29	1.4271	0.4799	368	9	1.6188	0.4836	372	9	2.5515	0.5285	389	10
30	1.6811	0.5302	373	10	1.8771	0.5348	376	10	2.8556	0.5763	395	11
31	2.0007	0.6046	379	11	2.2024	0.6100	383	11	3.2269	0.6464	399	12
32	2.4394	0.7306	387	14	2.6486	0.7362	391	14	3.7182	0.7657	399	14
33	3.1677	1.0175	399	19	3.3860	1.0223	399	19	4.4987	1.0425	399	20
34	6.0000	4.0538	399	76	6.0000	3.6210	399	68	6.0000	2.0690	399	39

Table 8.F.27 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Four

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	2.3883	403	45	-6.0000	2.5663	403	48	-6.0000	2.6636	403	50
1	-4.2167	1.0308	403	19	-4.0587	1.0386	403	19	-3.9712	1.0464	403	20
2	-3.4612	0.7489	403	14	-3.2873	0.7592	403	14	-3.1829	0.7707	403	14
3	-2.9955	0.6262	403	12	-2.8065	0.6379	403	12	-2.6840	0.6522	403	12
4	-2.6499	0.5538	403	10	-2.4463	0.5664	403	11	-2.3051	0.5828	403	11
5	-2.3708	0.5047	403	9	-2.1534	0.5179	403	10	-1.9933	0.5358	404	10
6	-2.1345	0.4686	403	9	-1.9039	0.4822	406	9	-1.7249	0.5012	409	9
7	-1.9280	0.4408	405	8	-1.6848	0.4547	410	9	-1.4874	0.4742	413	9
8	-1.7435	0.4185	409	8	-1.4881	0.4327	413	8	-1.2728	0.4524	417	8
9	-1.5760	0.4003	412	8	-1.3086	0.4148	417	8	-1.0762	0.4345	421	8
10	-1.4218	0.3852	415	7	-1.1427	0.4000	420	8	-0.8939	0.4196	425	8
11	-1.2783	0.3725	417	7	-0.9876	0.3878	423	7	-0.7231	0.4071	428	8
12	-1.1434	0.3619	420	7	-0.8411	0.3776	426	7	-0.5615	0.3967	431	7
13	-1.0157	0.3530	422	7	-0.7016	0.3693	428	7	-0.4075	0.3882	434	7
14	-0.8936	0.3456	425	6	-0.5677	0.3626	431	7	-0.2595	0.3812	436	7
15	-0.7763	0.3395	427	6	-0.4380	0.3574	433	7	-0.1162	0.3758	439	7
16	-0.6626	0.3347	429	6	-0.3117	0.3535	435	7	0.0235	0.3718	442	7
17	-0.5518	0.3311	431	6	-0.1876	0.3510	438	7	0.1608	0.3690	444	7
18	-0.4430	0.3286	433	6	-0.0648	0.3497	440	7	0.2964	0.3675	447	7
19	-0.3354	0.3272	435	6	0.0575	0.3496	442	7	0.4315	0.3672	449	7
20	-0.2284	0.3270	437	6	0.1802	0.3509	445	7	0.5667	0.3681	452	7

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.1211	0.3280	439	6	0.3042	0.3535	447	7	0.7030	0.3703	454	7
22	-0.0128	0.3302	441	6	0.4306	0.3575	449	7	0.8414	0.3737	457	7
23	0.0974	0.3338	443	6	0.5604	0.3630	452	7	0.9829	0.3786	460	7
24	0.2105	0.3388	445	6	0.6948	0.3702	454	7	1.1287	0.3850	462	7
25	0.3276	0.3456	447	6	0.8352	0.3792	457	7	1.2801	0.3932	465	7
26	0.4500	0.3542	450	7	0.9832	0.3903	460	7	1.4387	0.4035	468	8
27	0.5794	0.3652	452	7	1.1409	0.4040	463	8	1.6067	0.4163	471	8
28	0.7178	0.3790	455	7	1.3110	0.4209	466	8	1.7867	0.4324	475	8
29	0.8680	0.3963	458	7	1.4969	0.4419	469	8	1.9824	0.4527	478	8
30	1.0336	0.4182	461	8	1.7039	0.4686	473	9	2.1989	0.4786	483	9
31	1.2201	0.4462	464	8	1.9395	0.5034	478	9	2.4441	0.5129	487	10
32	1.4355	0.4831	468	9	2.2167	0.5515	483	10	2.7311	0.5605	493	11
33	1.6930	0.5339	473	10	2.5590	0.6229	489	12	3.0838	0.6316	499	12
34	2.0172	0.6089	479	11	3.0198	0.7451	498	14	3.5560	0.7531	499	14
35	2.4619	0.7352	487	14	3.7687	1.0271	499	19	4.3179	1.0339	499	19
36	3.1979	1.0218	499	19	6.0000	2.9854	499	56	6.0000	2.2688	499	43
37	6.0000	3.9769	499	75	NA	NA	NA	NA	NA	NA	NA	NA

Table 8.F.28 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Five

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	2.9791	503	56	-6.0000	2.8627	503	54	-6.0000	3.6279	503	68
1	-3.7810	1.0220	503	19	-3.8480	1.0305	503	19	-3.3625	1.0337	503	19
2	-3.0428	0.7377	503	14	-3.0926	0.7492	503	14	-2.6016	0.7520	503	14
3	-2.5932	0.6137	503	12	-2.6262	0.6270	503	12	-2.1323	0.6283	503	12
4	-2.2625	0.5406	503	10	-2.2792	0.5551	503	10	-1.7849	0.5544	508	10
5	-1.9974	0.4911	504	9	-1.9985	0.5065	504	9	-1.5061	0.5036	513	9
6	-1.7742	0.4548	508	9	-1.7603	0.4707	508	9	-1.2716	0.4660	517	9
7	-1.5803	0.4267	512	8	-1.5519	0.4429	512	8	-1.0680	0.4370	521	8
8	-1.4078	0.4042	515	8	-1.3656	0.4206	516	8	-0.8871	0.4143	525	8
9	-1.2518	0.3859	518	7	-1.1964	0.4023	519	8	-0.7230	0.3962	528	7
10	-1.1088	0.3706	521	7	-1.0406	0.3872	522	7	-0.5718	0.3817	531	7
11	-0.9761	0.3579	523	7	-0.8956	0.3746	525	7	-0.4304	0.3703	533	7
12	-0.8517	0.3473	525	7	-0.7592	0.3641	527	7	-0.2967	0.3613	536	7
13	-0.7341	0.3385	528	6	-0.6297	0.3555	529	7	-0.1687	0.3543	538	7
14	-0.6220	0.3313	530	6	-0.5058	0.3485	532	7	-0.0451	0.3490	540	7
15	-0.5141	0.3256	532	6	-0.3862	0.3431	534	6	0.0754	0.3452	543	6
16	-0.4095	0.3211	534	6	-0.2698	0.3391	536	6	0.1937	0.3427	545	6
17	-0.3074	0.3180	536	6	-0.1557	0.3364	538	6	0.3108	0.3414	547	6
18	-0.2068	0.3160	537	6	-0.0431	0.3349	540	6	0.4273	0.3413	549	6
19	-0.1072	0.3153	539	6	0.0690	0.3346	543	6	0.5442	0.3423	552	6
20	-0.0076	0.3157	541	6	0.1813	0.3355	545	6	0.6621	0.3444	554	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	0.0926	0.3174	543	6	0.2947	0.3377	547	6	0.7819	0.3477	556	7
22	0.1942	0.3203	545	6	0.4098	0.3410	549	6	0.9043	0.3522	558	7
23	0.2982	0.3246	547	6	0.5278	0.3457	551	6	1.0305	0.3581	561	7
24	0.4054	0.3304	549	6	0.6494	0.3519	553	7	1.1613	0.3654	563	7
25	0.5170	0.3378	551	6	0.7760	0.3596	556	7	1.2982	0.3745	566	7
26	0.6343	0.3472	553	7	0.9088	0.3692	558	7	1.4426	0.3856	568	7
27	0.7589	0.3589	556	7	1.0494	0.3809	561	7	1.5965	0.3992	571	7
28	0.8929	0.3733	558	7	1.1999	0.3951	564	7	1.7625	0.4159	574	8
29	1.0389	0.3911	561	7	1.3628	0.4124	567	8	1.9440	0.4366	578	8
30	1.2005	0.4134	564	8	1.5417	0.4339	570	8	2.1461	0.4630	582	9
31	1.3830	0.4417	567	8	1.7417	0.4611	574	9	2.3763	0.4977	586	9
32	1.5943	0.4788	571	9	1.9704	0.4965	578	9	2.6474	0.5457	591	10
33	1.8474	0.5295	576	10	2.2407	0.5452	583	10	2.9831	0.6174	597	12
34	2.1665	0.6044	582	11	2.5761	0.6174	590	12	3.4368	0.7401	599	14
35	2.6052	0.7307	590	14	3.0301	0.7406	598	14	4.1780	1.0233	599	19
36	3.3338	1.0177	599	19	3.7723	1.0239	599	19	6.0000	2.4466	599	46
37	6.0000	3.7312	599	70	6.0000	2.9874	599	56	NA	NA	NA	NA

Table 8.F.29 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Six

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	3.9776	603	75	-6.0000	4.0016	603	75	-6.0000	4.4372	603	83
1	-3.2213	1.0089	603	19	-3.1971	1.0161	603	19	-2.9906	1.0152	603	19
2	-2.5102	0.7189	603	13	-2.4710	0.7294	603	14	-2.2672	0.7271	603	14
3	-2.0882	0.5908	603	11	-2.0334	0.6040	603	11	-1.8338	0.6001	607	11
4	-1.7849	0.5148	608	10	-1.7144	0.5300	609	10	-1.5197	0.5249	613	10
5	-1.5466	0.4635	612	9	-1.4603	0.4802	614	9	-1.2712	0.4742	617	9
6	-1.3492	0.4263	616	8	-1.2472	0.4442	618	8	-1.0639	0.4376	621	8
7	-1.1796	0.3982	619	7	-1.0621	0.4170	621	8	-0.8846	0.4101	625	8
8	-1.0298	0.3764	622	7	-0.8971	0.3959	624	7	-0.7253	0.3888	628	7
9	-0.8946	0.3592	625	7	-0.7470	0.3793	627	7	-0.5806	0.3722	630	7
10	-0.7705	0.3455	627	6	-0.6080	0.3663	630	7	-0.4470	0.3591	633	7
11	-0.6549	0.3347	629	6	-0.4776	0.3561	632	7	-0.3217	0.3489	635	7
12	-0.5457	0.3263	631	6	-0.3537	0.3482	635	7	-0.2028	0.3409	637	6
13	-0.4413	0.3199	633	6	-0.2345	0.3424	637	6	-0.0886	0.3349	640	6
14	-0.3405	0.3152	635	6	-0.1186	0.3384	639	6	0.0221	0.3305	642	6
15	-0.2421	0.3121	637	6	-0.0049	0.3359	641	6	0.1304	0.3277	644	6
16	-0.1452	0.3105	639	6	0.1076	0.3351	643	6	0.2373	0.3263	646	6
17	-0.0489	0.3103	640	6	0.2201	0.3356	645	6	0.3437	0.3261	648	6
18	0.0478	0.3115	642	6	0.3335	0.3377	648	6	0.4505	0.3273	650	6
19	0.1456	0.3141	644	6	0.4487	0.3412	650	6	0.5585	0.3299	652	6
20	0.2456	0.3183	646	6	0.5669	0.3464	652	6	0.6686	0.3338	654	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	0.3487	0.3242	648	6	0.6892	0.3532	654	7	0.7819	0.3393	656	6
22	0.4563	0.3320	650	6	0.8170	0.3619	657	7	0.8994	0.3464	658	6
23	0.5699	0.3420	652	6	0.9520	0.3729	659	7	1.0226	0.3555	660	7
24	0.6912	0.3549	654	7	1.0961	0.3865	662	7	1.1530	0.3669	663	7
25	0.8229	0.3711	657	7	1.2520	0.4034	665	8	1.2928	0.3811	666	7
26	0.9683	0.3920	659	7	1.4233	0.4247	668	8	1.4447	0.3987	668	7
27	1.1324	0.4191	663	8	1.6151	0.4518	672	8	1.6125	0.4209	672	8
28	1.3229	0.4552	666	9	1.8351	0.4875	676	9	1.8014	0.4492	675	8
29	1.5527	0.5056	670	9	2.0963	0.5368	681	10	2.0196	0.4863	679	9
30	1.8455	0.5810	676	11	2.4227	0.6100	687	11	2.2804	0.5371	684	10
31	2.2550	0.7093	684	13	2.8677	0.7346	695	14	2.6082	0.6121	690	11
32	2.9514	1.0011	697	19	3.6014	1.0199	699	19	3.0570	0.7381	699	14
33	6.0000	4.5860	699	86	6.0000	3.2617	699	61	3.7975	1.0240	699	19
34	NA	NA	NA	NA	NA	NA	NA	NA	6.0000	2.9482	699	55

Table 8.F.30 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Seven

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	3.1231	703	59	-6.0000	3.2722	703	61	-6.0000	3.5543	703	67
1	-3.6952	1.0155	703	19	-3.5930	1.0204	703	19	-3.4216	1.0229	703	19
2	-2.9715	0.7269	703	14	-2.8598	0.7332	703	14	-2.6841	0.7355	703	14
3	-2.5388	0.5989	703	11	-2.4184	0.6058	703	11	-2.2399	0.6077	703	11
4	-2.2269	0.5222	703	10	-2.0986	0.5294	703	10	-1.9181	0.5310	705	10
5	-1.9820	0.4697	704	9	-1.8463	0.4771	707	9	-1.6644	0.4787	710	9
6	-1.7797	0.4309	708	8	-1.6373	0.4386	711	8	-1.4536	0.4407	714	8
7	-1.6070	0.4011	711	8	-1.4579	0.4091	714	8	-1.2721	0.4122	717	8
8	-1.4556	0.3775	714	7	-1.3000	0.3861	717	7	-1.1113	0.3904	720	7
9	-1.3203	0.3585	717	7	-1.1581	0.3678	720	7	-0.9655	0.3737	723	7
10	-1.1973	0.3431	719	6	-1.0282	0.3532	722	7	-0.8306	0.3610	726	7
11	-1.0839	0.3305	721	6	-0.9076	0.3416	724	6	-0.7038	0.3514	728	7
12	-0.9781	0.3203	723	6	-0.7941	0.3324	726	6	-0.5827	0.3444	730	6
13	-0.8781	0.3120	725	6	-0.6860	0.3253	728	6	-0.4658	0.3396	733	6
14	-0.7828	0.3054	727	6	-0.5819	0.3199	730	6	-0.3515	0.3366	735	6
15	-0.6911	0.3003	728	6	-0.4808	0.3160	732	6	-0.2387	0.3351	737	6
16	-0.6021	0.2965	730	6	-0.3817	0.3135	734	6	-0.1264	0.3349	739	6
17	-0.5149	0.2939	732	6	-0.2838	0.3122	736	6	-0.0140	0.3358	741	6
18	-0.4290	0.2924	733	5	-0.1864	0.3120	738	6	0.0994	0.3376	743	6
19	-0.3435	0.2920	735	5	-0.0888	0.3128	740	6	0.2143	0.3402	745	6
20	-0.2580	0.2927	736	5	0.0096	0.3145	741	6	0.3312	0.3435	748	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.1719	0.2944	738	6	0.1093	0.3171	743	6	0.4506	0.3474	750	7
22	-0.0843	0.2972	740	6	0.2111	0.3207	745	6	0.5729	0.3519	752	7
23	0.0052	0.3011	741	6	0.3154	0.3252	747	6	0.6987	0.3571	754	7
24	0.0974	0.3063	743	6	0.4229	0.3306	749	6	0.8284	0.3630	757	7
25	0.1933	0.3128	745	6	0.5344	0.3370	751	6	0.9627	0.3699	759	7
26	0.2937	0.3209	747	6	0.6506	0.3446	753	6	1.1025	0.3778	762	7
27	0.3998	0.3307	749	6	0.7724	0.3535	756	7	1.2488	0.3871	765	7
28	0.5131	0.3426	751	6	0.9011	0.3639	758	7	1.4029	0.3982	768	7
29	0.6353	0.3569	753	7	1.0381	0.3762	761	7	1.5668	0.4115	771	8
30	0.7690	0.3744	756	7	1.1851	0.3909	764	7	1.7428	0.4279	774	8
31	0.9171	0.3957	758	7	1.3448	0.4086	767	8	1.9346	0.4482	778	8
32	1.0841	0.4221	762	8	1.5206	0.4303	770	8	2.1470	0.4742	782	9
33	1.2762	0.4553	765	9	1.7175	0.4578	774	9	2.3878	0.5084	786	10
34	1.5027	0.4979	769	9	1.9432	0.4936	778	9	2.6699	0.5559	791	10
35	1.7787	0.5548	775	10	2.2106	0.5427	783	10	3.0171	0.6268	798	12
36	2.1306	0.6355	781	12	2.5436	0.6156	789	12	3.4828	0.7485	799	14
37	2.6145	0.7654	790	14	2.9957	0.7395	797	14	4.2371	1.0299	799	19
38	3.4020	1.0495	799	20	3.7367	1.0236	799	19	6.0000	2.3664	799	44
39	6.0000	3.5027	799	66	6.0000	3.0410	799	57	NA	NA	NA	NA

Table 8.F.31 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Eight

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	3.1842	803	60	-6.0000	3.4456	803	65	-6.0000	3.6097	803	68
1	-3.6560	1.0160	803	19	-3.4885	1.0211	803	19	-3.3881	1.0249	803	19
2	-2.9310	0.7282	803	14	-2.7531	0.7353	803	14	-2.6450	0.7404	803	14
3	-2.4961	0.6011	803	11	-2.3079	0.6096	803	11	-2.1923	0.6155	803	12
4	-2.1811	0.5254	803	10	-1.9828	0.5348	804	10	-1.8601	0.5413	806	10
5	-1.9326	0.4737	805	9	-1.7245	0.4838	809	9	-1.5949	0.4906	811	9
6	-1.7263	0.4357	809	8	-1.5088	0.4462	813	8	-1.3727	0.4532	816	8
7	-1.5493	0.4066	812	8	-1.3227	0.4172	816	8	-1.1805	0.4244	819	8
8	-1.3934	0.3835	815	7	-1.1582	0.3942	820	7	-1.0101	0.4014	822	8
9	-1.2534	0.3650	818	7	-1.0102	0.3756	822	7	-0.8564	0.3829	825	7
10	-1.1257	0.3500	820	7	-0.8749	0.3603	825	7	-0.7157	0.3677	828	7
11	-1.0074	0.3379	822	6	-0.7496	0.3478	827	7	-0.5851	0.3553	830	7
12	-0.8966	0.3280	824	6	-0.6321	0.3376	829	6	-0.4625	0.3451	833	6
13	-0.7916	0.3201	826	6	-0.5210	0.3293	832	6	-0.3462	0.3369	835	6
14	-0.6911	0.3139	828	6	-0.4147	0.3226	834	6	-0.2349	0.3303	837	6
15	-0.5941	0.3091	830	6	-0.3123	0.3175	835	6	-0.1275	0.3252	839	6
16	-0.4996	0.3057	832	6	-0.2127	0.3137	837	6	-0.0230	0.3214	841	6
17	-0.4068	0.3034	834	6	-0.1151	0.3111	839	6	0.0795	0.3189	843	6
18	-0.3151	0.3023	835	6	-0.0187	0.3098	841	6	0.1808	0.3174	845	6
19	-0.2237	0.3023	837	6	0.0772	0.3096	843	6	0.2814	0.3169	847	6
20	-0.1319	0.3034	839	6	0.1733	0.3105	845	6	0.3820	0.3175	848	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.0392	0.3056	841	6	0.2704	0.3125	846	6	0.4833	0.3189	850	6
22	0.0552	0.3089	842	6	0.3691	0.3157	848	6	0.5858	0.3213	852	6
23	0.1520	0.3134	844	6	0.4701	0.3201	850	6	0.6902	0.3246	854	6
24	0.2521	0.3194	846	6	0.5745	0.3258	852	6	0.7970	0.3288	856	6
25	0.3565	0.3268	848	6	0.6830	0.3330	854	6	0.9069	0.3340	858	6
26	0.4664	0.3362	850	6	0.7968	0.3417	856	6	1.0205	0.3402	860	6
27	0.5833	0.3477	852	7	0.9172	0.3523	858	7	1.1388	0.3476	863	7
28	0.7090	0.3619	855	7	1.0458	0.3650	861	7	1.2627	0.3562	865	7
29	0.8464	0.3795	857	7	1.1846	0.3802	864	7	1.3932	0.3663	867	7
30	0.9988	0.4017	860	8	1.3362	0.3987	866	7	1.5317	0.3782	870	7
31	1.1714	0.4301	863	8	1.5041	0.4213	870	8	1.6801	0.3923	873	7
32	1.3723	0.4675	867	9	1.6934	0.4496	873	8	1.8407	0.4094	876	8
33	1.6145	0.5189	872	10	1.9119	0.4863	877	9	2.0169	0.4304	879	8
34	1.9223	0.5949	877	11	2.1724	0.5364	882	10	2.2135	0.4570	883	9
35	2.3497	0.7229	885	14	2.4986	0.6101	888	11	2.4381	0.4919	887	9
36	3.0673	1.0125	899	19	2.9438	0.7348	896	14	2.7033	0.5401	892	10
37	6.0000	4.2804	899	80	3.6779	1.0201	899	19	3.0328	0.6121	898	11
38	NA	NA	NA	NA	6.0000	3.1397	899	59	3.4798	0.7355	899	14
39	NA	NA	NA	NA	NA	NA	NA	NA	4.2140	1.0198	899	19
40	NA	NA	NA	NA	NA	NA	NA	NA	6.0000	2.4094	899	45

Table 8.F.32 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Eleven

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	2.9953	903	56	-6.0000	3.5494	903	67	-6.0000	4.0355	903	76
1	-3.7729	1.0196	903	19	-3.4456	1.0113	903	19	-3.1878	1.0108	903	19
2	-3.0409	0.7327	903	14	-2.7296	0.7223	903	14	-2.4740	0.7202	903	14
3	-2.5998	0.6059	903	11	-2.3025	0.5952	903	11	-2.0505	0.5919	903	11
4	-2.2795	0.5302	903	10	-1.9939	0.5202	904	10	-1.7457	0.5165	909	10
5	-2.0262	0.4784	903	9	-1.7499	0.4699	908	9	-1.5054	0.4663	913	9
6	-1.8157	0.4403	907	8	-1.5463	0.4336	912	8	-1.3049	0.4306	917	8
7	-1.6348	0.4110	911	8	-1.3702	0.4064	916	8	-1.1309	0.4042	920	8
8	-1.4755	0.3878	914	7	-1.2138	0.3853	919	7	-0.9757	0.3843	923	7
9	-1.3325	0.3690	916	7	-1.0718	0.3686	921	7	-0.8340	0.3690	926	7
10	-1.2019	0.3537	919	7	-0.9408	0.3553	924	7	-0.7022	0.3572	928	7
11	-1.0813	0.3412	921	6	-0.8184	0.3447	926	6	-0.5779	0.3482	930	7
12	-0.9684	0.3309	923	6	-0.7025	0.3362	928	6	-0.4590	0.3414	933	6
13	-0.8616	0.3226	925	6	-0.5917	0.3296	930	6	-0.3441	0.3365	935	6
14	-0.7597	0.3159	927	6	-0.4847	0.3245	932	6	-0.2319	0.3332	937	6
15	-0.6615	0.3107	929	6	-0.3806	0.3208	934	6	-0.1215	0.3313	939	6
16	-0.5661	0.3069	931	6	-0.2785	0.3184	936	6	-0.0120	0.3306	941	6
17	-0.4727	0.3044	932	6	-0.1774	0.3173	938	6	0.0975	0.3310	943	6
18	-0.3805	0.3030	934	6	-0.0767	0.3175	940	6	0.2075	0.3324	945	6
19	-0.2887	0.3029	936	6	0.0246	0.3189	942	6	0.3188	0.3349	947	6
20	-0.1965	0.3041	938	6	0.1272	0.3217	944	6	0.4322	0.3383	949	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.1033	0.3065	939	6	0.2321	0.3260	946	6	0.5482	0.3429	952	6
22	-0.0082	0.3103	941	6	0.3403	0.3318	948	6	0.6678	0.3486	954	7
23	0.0897	0.3156	943	6	0.4529	0.3394	950	6	0.7918	0.3557	956	7
24	0.1915	0.3226	945	6	0.5714	0.3490	952	7	0.9214	0.3644	959	7
25	0.2985	0.3316	947	6	0.6974	0.3610	954	7	1.0581	0.3752	961	7
26	0.4123	0.3430	949	6	0.8331	0.3758	957	7	1.2039	0.3886	964	7
27	0.5347	0.3572	951	7	0.9812	0.3941	960	7	1.3615	0.4054	967	8
28	0.6686	0.3750	954	7	1.1455	0.4169	963	8	1.5344	0.4267	970	8
29	0.8176	0.3975	957	7	1.3312	0.4457	966	8	1.7280	0.4541	974	9
30	0.9870	0.4263	960	8	1.5463	0.4830	970	9	1.9504	0.4904	978	9
31	1.1847	0.4642	964	9	1.8037	0.5338	975	10	2.2150	0.5404	983	10
32	1.4239	0.5162	968	10	2.1275	0.6083	981	11	2.5460	0.6144	989	12
33	1.7292	0.5929	974	11	2.5710	0.7338	990	14	2.9973	0.7394	997	14
34	2.1543	0.7215	982	14	3.3039	1.0197	999	19	3.7389	1.0242	999	19
35	2.8698	1.0115	995	19	6.0000	3.7819	999	71	6.0000	3.0354	999	57
36	6.0000	4.7284	999	89	NA	NA	NA	NA	NA	NA	NA	NA

Table 8.F.33 Decision Accuracy All-forms Average—ELA, Grade Three

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
303–344	0.34	0.05	0.00	0.39
345–359	0.06	0.23	0.06	0.34
360–399	0.00	0.03	0.23	0.26

Estimated Proportion Correctly Classified: Total = 0.79

Table 8.F.34 Decision Consistency Alternate Form—ELA, Grade Three

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
303–344	0.32	0.07	0.00	0.39
345–359	0.08	0.18	0.08	0.34
360–399	0.00	0.05	0.22	0.26

Estimated Proportion Consistently Classified: Total = 0.72

Table 8.F.35 Decision Accuracy All-forms Average—ELA, Grade Four

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
403–444	0.41	0.06	0.00	0.46
445–459	0.05	0.22	0.05	0.32
460–499	0.00	0.04	0.18	0.22

Estimated Proportion Correctly Classified: Total = 0.80

Table 8.F.36 Decision Consistency Alternate Form—ELA, Grade Four

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
403–444	0.39	0.07	0.00	0.46
445–459	0.07	0.18	0.07	0.32
460–499	0.00	0.06	0.16	0.22

Estimated Proportion Consistently Classified: Total = 0.73

Table 8.F.37 Decision Accuracy All-forms Average—ELA, Grade Five

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
503–544	0.37	0.05	0.00	0.42
545–559	0.06	0.24	0.06	0.36
560–599	0.00	0.04	0.18	0.22

Estimated Proportion Correctly Classified: Total = 0.80

Table 8.F.38 Decision Consistency Alternate Form—ELA, Grade Five

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
503–544	0.36	0.06	0.00	0.42
545–559	0.08	0.20	0.08	0.36
560–599	0.00	0.06	0.17	0.22

Estimated Proportion Consistently Classified: Total = 0.72

Table 8.F.39 Decision Accuracy All-forms Average—ELA, Grade Six

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
603–644	0.39	0.07	0.00	0.46
645–659	0.05	0.32	0.04	0.41
660–699	0.00	0.04	0.09	0.13

Estimated Proportion Correctly Classified: Total = 0.80

Table 8.F.40 Decision Consistency Alternate Form—ELA, Grade Six

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
603–644	0.37	0.08	0.01	0.46
645–659	0.07	0.27	0.06	0.41
660–699	0.00	0.05	0.08	0.13

Estimated Proportion Consistently Classified: Total = 0.72

Table 8.F.41 Decision Accuracy All-forms Average—ELA, Grade Seven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
703–744	0.41	0.06	0.00	0.47
745–759	0.05	0.22	0.05	0.32
760–799	0.00	0.03	0.18	0.21

Estimated Proportion Correctly Classified: Total = 0.81

Table 8.F.42 Decision Consistency Alternate Form—ELA, Grade Seven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
703–744	0.40	0.07	0.01	0.47
745–759	0.07	0.18	0.07	0.32
760–799	0.00	0.05	0.16	0.21

Estimated Proportion Consistently Classified: Total = 0.74

Table 8.F.43 Decision Accuracy All-forms Average—ELA, Grade Eight

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
803–844	0.31	0.07	0.01	0.38
845–859	0.04	0.37	0.05	0.47
860–899	0.00	0.06	0.10	0.15

Estimated Proportion Correctly Classified: Total = 0.78

Table 8.F.44 Decision Consistency Alternate Form—ELA, Grade Eight

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
803–844	0.29	0.08	0.01	0.38
845–859	0.07	0.32	0.08	0.47
860–899	0.00	0.07	0.09	0.15

Estimated Proportion Consistently Classified: Total = 0.70

Table 8.F.45 Decision Accuracy All-forms Average—ELA, Grade Eleven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
903–944	0.30	0.05	0.00	0.35
945–959	0.05	0.29	0.07	0.41
960–999	0.00	0.03	0.22	0.25

Estimated Proportion Correctly Classified: Total = 0.81

Table 8.F.46 Decision Consistency Alternate Form—ELA, Grade Eleven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
903–944	0.28	0.06	0.00	0.35
945–959	0.07	0.25	0.09	0.41
960–999	0.00	0.05	0.20	0.25

Estimated Proportion Consistently Classified: Total = 0.73

Table 8.F.47 Decision Accuracy All-forms Average—Mathematics, Grade Three

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
303–344	0.45	0.08	0.00	0.53
345–359	0.07	0.26	0.05	0.37
360–399	0.00	0.04	0.06	0.10

Estimated Proportion Correctly Classified: Total = 0.76

Table 8.F.48 Decision Consistency Alternate Form—Mathematics, Grade Three

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
303–344	0.43	0.10	0.01	0.53
345–359	0.10	0.20	0.07	0.37
360–399	0.00	0.04	0.05	0.10

Estimated Proportion Consistently Classified: Total = 0.68

Table 8.F.49 Decision Accuracy All-forms Average—Mathematics, Grade Four

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
403–444	0.51	0.07	0.00	0.58
445–459	0.06	0.23	0.03	0.32
460–499	0.00	0.05	0.05	0.10

Estimated Proportion Correctly Classified: Total = 0.78

Table 8.F.50 Decision Consistency Alternate Form—Mathematics, Grade Four

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
403–444	0.48	0.09	0.01	0.58
445–459	0.09	0.18	0.05	0.32
460–499	0.00	0.05	0.05	0.10

Estimated Proportion Consistently Classified: Total = 0.71

Table 8.F.51 Decision Accuracy All-forms Average—Mathematics, Grade Five

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
503–544	0.47	0.07	0.00	0.55
545–559	0.06	0.24	0.04	0.35
560–599	0.00	0.04	0.06	0.10

Estimated Proportion Correctly Classified: Total = 0.78

Table 8.F.52 Decision Consistency Alternate Form—Mathematics, Grade Five

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
503–544	0.45	0.09	0.01	0.55
545–559	0.09	0.19	0.07	0.35
560–599	0.00	0.04	0.06	0.10

Estimated Proportion Consistently Classified: Total = 0.70

Table 8.F.53 Decision Accuracy All-forms Average—Mathematics, Grade Six

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
603–644	0.49	0.09	0.01	0.59
645–659	0.07	0.23	0.02	0.32
660–699	0.00	0.04	0.05	0.09

Estimated Proportion Correctly Classified: Total = 0.76

Table 8.F.54 Decision Consistency Alternate Form—Mathematics, Grade Six

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
603–644	0.46	0.12	0.02	0.59
645–659	0.10	0.17	0.05	0.32
660–699	0.00	0.04	0.05	0.09

Estimated Proportion Consistently Classified: Total = 0.68

Table 8.F.55 Decision Accuracy All-forms Average—Mathematics, Grade Seven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
703–744	0.51	0.07	0.00	0.59
745–759	0.07	0.22	0.04	0.33
760–799	0.00	0.02	0.06	0.09

Estimated Proportion Correctly Classified: Total = 0.79

Table 8.F.56 Decision Consistency Alternate Form—Mathematics, Grade Seven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
703–744	0.49	0.09	0.01	0.59
745–759	0.09	0.17	0.06	0.33
760–799	0.00	0.02	0.06	0.09

Estimated Proportion Consistently Classified: Total = 0.72

Table 8.F.57 Decision Accuracy All-forms Average—Mathematics, Grade Eight

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
803–844	0.49	0.07	0.00	0.56
845–859	0.08	0.25	0.03	0.36
860–899	0.00	0.04	0.04	0.08

Estimated Proportion Correctly Classified: Total = 0.79

Table 8.F.58 Decision Consistency Alternate Form—Mathematics, Grade Eight

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
803–844	0.46	0.09	0.00	0.56
845–859	0.10	0.20	0.05	0.36
860–899	0.00	0.04	0.05	0.08

Estimated Proportion Consistently Classified: Total = 0.71

Table 8.F.59 Decision Accuracy All-forms Average—Mathematics, Grade Eleven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
903–944	0.51	0.07	0.01	0.59
945–959	0.06	0.20	0.04	0.30
960–999	0.00	0.03	0.08	0.11

Estimated Proportion Correctly Classified: Total = 0.79

Table 8.F.60 Decision Consistency Alternate Form—Mathematics, Grade Eleven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
903–944	0.49	0.09	0.01	0.59
945–959	0.08	0.16	0.06	0.30
960–999	0.00	0.03	0.08	0.11

Estimated Proportion Consistently Classified: Total = 0.72

Appendix 8.G: Validity Analyses

Notes:

- Pathway Easy includes the router and Stage 2 easy module.
- Pathway Moderate includes the router and Stage 2 moderate module.
- Pathway Hard includes the router and Stage 2 hard module.

Table 8.G.1 Total Testing Time (In Minutes) at Each Pathway, English Language Arts/Literacy (ELA)

Pathways	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 3 Easy	1,892	35.94	30.56	0.53	804.32	3.86	14.08	21.20	31.08	42.51	60.04	143.54
Grade 3 Moderate	1,407	48.73	22.01	6.50	199.12	13.87	26.26	33.91	44.86	58.17	74.86	124.59
Grade 3 Hard	828	57.73	25.15	12.67	219.15	20.04	32.81	40.90	53.56	68.29	86.99	149.59
Grade 4 Easy	1,652	39.97	25.79	0.45	229.60	3.58	12.27	23.98	35.76	50.20	68.94	136.38
Grade 4 Moderate	1,621	39.66	21.35	3.95	358.94	10.45	20.66	27.04	35.86	47.05	61.40	110.62
Grade 4 Hard	1,182	57.69	27.26	8.65	334.98	19.46	33.10	41.40	52.32	67.32	83.40	156.30
Grade 5 Easy	1,445	38.62	32.67	0.85	658.09	3.37	11.39	21.25	33.53	47.82	67.33	140.67
Grade 5 Moderate	1,674	49.08	24.26	1.31	231.88	11.28	25.87	33.94	43.80	58.66	77.95	138.14
Grade 5 Hard	1,346	63.06	28.40	4.42	238.97	14.61	35.64	44.32	57.51	75.06	97.64	161.40
Grade 6 Easy	488	28.13	24.04	0.27	171.04	0.53	4.71	9.60	22.90	39.30	58.49	135.44
Grade 6 Moderate	2,031	45.84	27.91	3.57	478.00	7.30	18.06	29.32	41.16	56.08	75.57	142.47
Grade 6 Hard	2,060	62.24	27.17	0.00	240.31	16.32	35.65	45.28	56.97	72.91	93.96	160.73

Pathways	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 7 Easy	1,610	41.02	29.34	0.32	306.17	1.86	9.75	20.86	37.58	53.60	73.56	134.84
Grade 7 Moderate	1,906	56.13	29.51	4.04	436.54	9.87	27.48	38.95	51.38	67.46	88.71	155.34
Grade 7 Hard	1,041	93.79	47.17	9.93	390.72	21.00	51.22	64.20	83.63	108.62	149.71	297.76
Grade 8 Easy	1,815	40.77	29.73	0.24	485.03	2.68	10.21	23.75	36.67	51.49	71.68	134.85
Grade 8 Moderate	1,711	55.70	27.24	2.64	382.89	7.63	30.03	40.07	51.11	66.12	85.50	154.30
Grade 8 Hard	849	77.12	31.08	8.18	259.61	21.22	46.87	57.14	71.69	90.66	111.20	193.68
Grade 11 Easy	1,059	33.03	27.54	0.33	212.86	0.91	5.79	13.12	28.76	45.02	63.08	148.58
Grade 11 Moderate	1,855	41.83	23.93	2.20	334.47	6.45	16.97	27.71	38.73	51.98	66.57	114.48
Grade 11 Hard	926	65.50	28.18	8.33	211.66	17.82	34.50	47.97	60.82	78.52	99.30	164.98

Table 8.G.2 Total Testing Time (In Minutes) at Each Pathway, Mathematics

Pathways	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 3 Easy	757	13.57	9.73	0.77	86.07	1.31	4.15	7.63	11.98	16.62	23.46	51.24
Grade 3 Moderate	1,551	17.90	10.87	1.66	227.70	4.21	8.75	11.60	15.62	21.22	29.43	53.67
Grade 3 Hard	1,804	21.06	10.63	1.43	105.85	6.58	10.85	14.25	18.69	24.93	33.62	59.80
Grade 4 Easy	1,493	15.96	14.77	0.48	400.17	1.27	5.36	9.28	13.70	19.00	27.41	54.97
Grade 4 Moderate	2,239	21.36	10.75	2.73	158.68	5.96	11.41	14.72	19.23	25.58	33.01	54.39
Grade 4 Hard	639	21.99	9.97	3.97	77.48	8.21	12.68	15.15	19.68	25.77	34.64	58.20
Grade 5 Easy	1,020	14.76	17.83	0.59	428.09	1.25	3.64	7.29	12.65	18.58	25.79	54.19
Grade 5 Moderate	2,065	18.95	10.35	1.48	118.18	4.69	9.66	12.65	16.74	22.59	30.26	57.35
Grade 5 Hard	1,288	24.34	12.81	2.34	126.35	5.59	12.37	16.29	21.71	28.84	38.32	75.28
Grade 6 Easy	1,740	16.68	10.04	0.22	92.11	1.70	5.58	10.74	15.10	20.43	28.44	52.90
Grade 6 Moderate	1,686	20.99	11.90	1.72	180.60	4.45	10.83	14.09	18.55	24.42	33.35	64.59
Grade 6 Hard	960	25.50	12.50	3.15	125.90	6.86	13.76	17.40	23.24	30.19	39.47	66.15
Grade 7 Easy	793	17.08	13.82	0.27	161.37	0.81	4.13	8.40	14.82	21.70	31.47	69.20
Grade 7 Moderate	1,698	23.12	13.88	1.07	169.85	3.38	9.72	14.82	20.68	28.01	37.56	75.41
Grade 7 Hard	2,032	29.76	17.06	1.32	249.84	6.57	14.43	19.94	26.64	35.57	47.65	86.56
Grade 8 Easy	698	17.05	15.13	0.73	292.01	1.84	4.82	9.38	14.43	21.49	30.14	55.84
Grade 8 Moderate	2,083	23.36	12.91	1.68	144.58	3.22	10.39	15.35	21.27	28.31	37.79	72.21
Grade 8 Hard	1,493	28.71	13.37	2.87	134.98	5.41	15.34	20.45	26.34	34.62	44.17	74.67
Grade 11 Easy	1,290	17.09	11.02	0.17	84.92	1.56	5.32	9.72	15.53	21.72	30.03	60.46
Grade 11 Moderate	1,336	21.61	13.73	1.58	173.88	3.28	8.98	14.03	19.26	25.23	36.29	72.44
Grade 11 Hard	1,176	26.05	13.95	2.10	153.23	5.45	13.23	17.70	23.44	30.94	41.94	79.00

Table 8.G.3 Total Testing Time (In Minutes) at Each Quartile Group, ELA

Student Performance Percentile	Scale Score Range	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 3 Q 1	303-336	915	32.73	36.61	0.53	804.32	2.79	10.39	17.07	27.19	38.61	53.93	143.54
Grade 3 Q 2	338-348	1,074	41.06	23.72	3.67	214.77	9.19	19.05	26.96	36.90	49.22	66.04	130.76
Grade 3 Q 3	349-360	1,106	48.12	22.88	8.00	194.23	15.27	25.35	32.50	43.43	58.08	74.92	127.47
Grade 3 Q 4	361-399	1,032	55.32	24.06	12.67	219.15	19.16	31.06	39.34	51.30	65.30	83.28	140.08
Grade 4 Q 1	403-433	1,073	37.10	25.78	0.45	208.29	3.22	9.42	20.14	33.29	46.95	66.78	134.07
Grade 4 Q 2	435-443	987	41.70	25.48	3.07	317.08	7.79	18.95	26.97	36.85	49.03	67.37	142.32
Grade 4 Q 3	445-455	1,206	43.25	22.06	3.95	229.60	11.03	22.97	28.45	38.57	52.28	70.24	125.57
Grade 4 Q 4	457-499	1,189	54.98	26.82	10.42	358.94	18.17	30.61	38.77	49.82	64.04	81.57	154.68
Grade 5 Q 1	503-535	1,083	35.83	33.17	0.85	658.09	3.16	9.83	18.43	30.93	44.19	63.56	152.97
Grade 5 Q 2	536-547	1,143	46.84	27.16	4.47	431.41	9.25	22.63	31.35	41.26	55.74	76.65	138.14
Grade 5 Q 3	548-556	1,011	54.23	24.79	8.37	236.01	16.66	29.14	37.13	49.45	65.73	83.81	140.67
Grade 5 Q 4	558-599	1,228	61.64	28.00	4.42	238.97	16.86	35.14	42.93	55.82	73.07	95.91	159.52
Grade 6 Q 1	603-636	1,040	34.42	26.55	0.27	221.93	2.08	7.20	16.00	29.70	45.64	64.35	135.36
Grade 6 Q 2	637-644	1,075	46.62	28.68	3.61	478.00	7.67	19.63	30.48	42.50	56.53	73.44	145.20
Grade 6 Q 3	645-653	1,244	55.88	25.59	5.40	193.52	13.22	29.77	39.36	50.90	66.35	86.87	147.82
Grade 6 Q 4	655-691	1,219	65.31	27.69	12.41	240.31	24.15	37.88	47.47	60.08	75.42	97.22	164.08
Grade 7 Q 1	703-733	1,122	36.62	30.11	0.32	306.17	1.57	7.65	15.47	31.44	48.79	69.36	140.03
Grade 7 Q 2	734-744	1,025	51.37	27.60	4.03	285.65	9.87	22.75	34.31	46.79	63.35	84.30	142.80
Grade 7 Q 3	745-755	1,164	59.55	29.96	5.02	272.15	10.37	30.62	40.82	53.52	71.81	96.61	168.07
Grade 7 Q 4	757-799	1,246	86.36	47.07	9.93	436.54	22.71	44.17	56.86	75.69	100.34	137.18	297.76

Student Performance Percentile	Scale Score Range	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 8 Q 1	803-840	1,000	35.56	29.46	0.24	453.87	1.55	7.21	16.16	31.46	47.38	64.94	135.17
Grade 8 Q 2	841-847	1,152	47.72	29.84	2.64	485.03	5.83	21.11	30.93	42.29	58.41	80.38	132.71
Grade 8 Q 3	848-854	1,017	57.74	27.24	5.37	243.41	11.03	31.58	40.67	51.79	69.73	90.54	153.55
Grade 8 Q 4	855-899	1,206	70.91	29.90	16.95	259.61	26.09	41.82	51.35	64.76	84.26	104.23	182.90
Grade 11 Q 1	903-939	880	30.29	27.58	0.33	292.57	0.70	5.21	10.71	23.94	42.12	58.75	141.30
Grade 11 Q 2	941-949	1,037	39.96	22.65	3.29	226.25	5.82	14.60	25.59	36.82	50.13	65.40	111.90
Grade 11 Q 3	950-958	909	46.02	24.65	3.23	222.77	8.36	19.91	30.72	41.70	57.16	73.67	129.66
Grade 11 Q 4	959-999	1,014	62.44	29.47	7.60	334.47	18.14	32.48	43.06	57.65	75.87	96.32	171.77

Table 8.G.4 Total Testing Time (In Minutes) at Each Quartile Group, Mathematics

Student Performance Percentile	Scale Score Range	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 3 Q 1	303-333	848	13.71	9.93	0.77	86.07	1.37	4.34	7.77	11.91	16.60	23.76	53.11
Grade 3 Q 2	334-341	1,020	17.46	9.40	1.56	91.97	3.79	8.49	11.54	15.31	20.56	29.14	53.67
Grade 3 Q 3	343-349	985	18.92	11.30	1.43	227.70	5.89	9.88	12.47	16.94	22.30	30.55	52.23
Grade 3 Q 4	351-399	1,259	22.21	10.99	2.16	105.85	7.11	11.74	15.13	19.66	26.35	35.48	64.02
Grade 4 Q 1	403-431	1,003	14.43	10.58	0.48	129.33	1.09	4.66	7.81	12.23	17.96	26.38	50.16
Grade 4 Q 2	433-440	1,138	19.48	15.43	2.60	400.17	4.25	10.00	12.90	17.01	22.44	30.90	54.49
Grade 4 Q 3	441-447	963	20.85	10.96	3.83	158.68	7.18	11.35	14.57	18.68	24.42	32.01	54.39
Grade 4 Q 4	449-499	1,267	22.89	10.44	2.98	137.18	8.85	13.03	15.86	20.68	27.44	35.19	56.47
Grade 5 Q 1	503-533	957	14.12	18.27	0.59	428.09	1.22	3.50	6.64	11.60	17.56	23.93	55.21
Grade 5 Q 2	534-541	1,134	18.47	9.48	1.48	63.42	4.81	9.20	12.50	16.28	22.21	30.63	53.52
Grade 5 Q 3	543-549	1,111	19.96	10.00	2.34	100.02	5.17	10.72	13.71	17.81	23.55	31.25	56.64
Grade 5 Q 4	551-599	1,171	24.68	13.64	2.34	126.35	6.14	12.27	16.38	21.77	28.87	38.89	79.62
Grade 6 Q 1	603-633	942	14.70	10.21	0.22	112.69	1.19	3.96	8.48	12.94	18.49	26.09	49.79
Grade 6 Q 2	635-640	1,049	18.51	11.00	2.16	180.60	4.03	8.55	12.32	16.41	21.79	29.67	58.59
Grade 6 Q 3	641-648	1,162	20.97	10.45	3.15	98.89	5.56	11.38	14.43	18.69	24.64	33.67	57.19
Grade 6 Q 4	650-699	1,233	25.34	12.65	5.53	125.90	8.51	13.82	17.40	22.77	29.61	39.49	67.27
Grade 7 Q 1	703-732	1,093	17.56	15.06	0.27	169.85	0.96	4.53	8.64	14.90	22.08	31.48	69.48
Grade 7 Q 2	733-740	987	22.55	12.66	1.78	122.02	3.73	9.97	14.54	19.97	27.66	36.44	66.78
Grade 7 Q 3	741-749	1,197	26.44	13.89	3.16	229.99	5.79	13.66	18.37	23.88	31.51	42.76	71.98
Grade 7 Q 4	750-799	1,246	32.24	17.94	5.04	249.84	9.96	16.61	22.05	28.75	37.92	49.98	97.58

Student Performance Percentile	Scale Score Range	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 8 Q 1	803-834	1,023	17.41	14.23	0.73	292.01	1.86	5.03	9.69	14.97	22.14	31.13	56.04
Grade 8 Q 2	835-842	1,104	22.36	11.89	2.15	113.86	3.90	10.05	14.81	20.62	27.32	36.19	62.15
Grade 8 Q 3	843-848	1,019	26.21	12.63	2.87	112.83	7.21	14.39	18.15	23.68	31.00	40.59	74.26
Grade 8 Q 4	850-899	1,128	30.34	13.90	2.90	144.58	5.89	17.29	22.09	27.90	36.34	45.56	77.28
Grade 11 Q 1	903-931	892	15.63	11.87	0.17	142.56	1.17	4.22	7.87	13.40	20.21	27.90	65.50
Grade 11 Q 2	932-941	1,009	20.25	12.99	1.58	173.88	3.11	8.26	12.78	18.20	24.10	33.22	62.87
Grade 11 Q 3	942-951	927	22.22	11.27	2.00	102.18	4.42	10.94	15.51	20.10	25.89	35.51	62.25
Grade 11 Q 4	952-999	974	27.29	14.60	2.10	153.23	6.18	14.13	18.15	24.16	32.52	43.47	80.74

Notes for [Table 8.G.5](#) through [Table 8.G.11](#):

- Numbers preceded by an asterisk and in **bold** font in the *Mathematics* row of the [Student Group] *R* and Sample Size column are the sample sizes used to calculate the correlations.
- R denotes the correlation coefficient; these are decimals that begin with “0” (zero).

Table 8.G.5 Content Correlation for Gender Student Groups

Content Area and Grade	Male Students	Male R and Sample Size	Female Students	Female R and Sample Size
ELA 3	2,859	0.63	1,268	0.65
Mathematics 3	2,868	*2,755	1,244	*1,214
ELA 4	3,012	0.64	1,443	0.64
Mathematics 4	2,965	*2,893	1,406	*1,384
ELA 5	3,048	0.63	1,417	0.62
Mathematics 5	2,987	*2,926	1,386	*1,368
ELA 6	3,117	0.61	1,462	0.57
Mathematics 6	2,995	*2,946	1,391	*1,374
ELA 7	3,102	0.66	1,455	0.62
Mathematics 7	3,077	*2,993	1,446	*1,404
ELA 8	2,975	0.62	1,400	0.58
Mathematics 8	2,906	*2,838	1,368	*1,331
ELA 11	2,505	0.66	1,335	0.66
Mathematics 11	2,492	*2,417	1,310	*1,283

Table 8.G.6 Content Correlation for Ethnicity Student Groups

Content Area and Grade	American Indian or Alaska Native Students	American Indian or Alaska Native R and Sample Size	Asian Students	Asian R and Sample Size	Native Hawaiian or Other Pacific Islander Students	Native Hawaiian or Other Pacific Islander R and Sample Size	Filipino Students	Filipino R and Sample Size
ELA 3	27	0.53	320	0.68	18	0.77	103	0.60
Mathematics 3	25	*25	314	*303	18	*18	106	*99
ELA 4	28	0.58	344	0.53	28	0.83	88	0.63
Mathematics 4	26	*26	338	*324	25	*25	91	*85
ELA 5	29	0.63	332	0.64	19	0.53	106	0.63
Mathematics 5	30	*29	319	*314	18	*18	106	*104
ELA 6	24	0.62	343	0.60	18	0.25	116	0.65
Mathematics 6	23	*23	326	*319	19	*17	111	*111
ELA 7	30	0.68	323	0.60	25	0.78	129	0.62
Mathematics 7	30	*29	321	*314	24	*24	129	*125
ELA 8	25	0.68	359	0.60	18	0.40	138	0.58
Mathematics 8	27	*25	347	*335	17	*17	135	*134
ELA 11	33	0.59	293	0.63	13	0.16	112	0.69
Mathematics 11	33	*33	290	*282	13	*12	111	*108

Table 8.G.7 Content Correlation for Ethnicity Student Groups (Continued)

Content Area and Grade	Hispanic or Latino Students	Hispanic or Latino R and Sample Size	Black or African American Students	Black or African American R and Sample Size	White Students	White R and Sample Size	Two or More Races Students	Two or More Races R and Sample Size
ELA 3	2,370	0.62	312	0.61	771	0.65	206	0.66
Mathematics 3	2,364	*2,285	319	*303	758	*735	208	*201
ELA 4	2,588	0.65	347	0.64	855	0.64	177	0.66
Mathematics 4	2,535	*2,497	343	*338	839	*815	174	*167
ELA 5	2,618	0.61	342	0.68	863	0.66	156	0.64
Mathematics 5	2,568	*2,525	338	*328	846	*831	148	*145
ELA 6	2,734	0.59	373	0.59	819	0.65	152	0.53
Mathematics 6	2,624	*2,588	355	*352	788	*772	140	*138
ELA 7	2,610	0.65	399	0.69	860	0.63	181	0.72
Mathematics 7	2,591	*2,517	405	*385	840	*826	183	*177
ELA 8	2,483	0.61	365	0.52	849	0.66	138	0.59
Mathematics 8	2,437	*2,379	362	*355	821	*797	128	*127
ELA 11	2,103	0.65	362	0.65	807	0.70	117	0.72
Mathematics 11	2,084	*2,023	363	*354	797	*778	111	*110

Table 8.G.8 Content Correlation for English Proficiency Student Groups

Content Area and Grade	English Only Students	English Only R and Sample Size	Initial Fluent English Proficient Students	Initial Fluent English Proficient R and Sample Size	English Learner Students	English Learner R and Sample Size	Reclassified Fluent English Proficient Students	Reclassified Fluent English Proficient R and Sample Size
ELA 3	2,499	0.63	25	0.61	1,469	0.63	130	0.67
Mathematics 3	2,497	*2,407	24	*24	1,451	*1,409	133	*125
ELA 4	2,689	0.64	40	0.72	1,496	0.63	224	0.63
Mathematics 4	2,635	*2,571	41	*39	1,470	*1,443	219	*218
ELA 5	2,550	0.63	32	0.56	1,572	0.62	304	0.69
Mathematics 5	2,498	*2,445	29	*28	1,544	*1,519	296	*296
ELA 6	2,601	0.60	48	0.62	1,537	0.60	388	0.58
Mathematics 6	2,478	*2,445	44	*44	1,484	*1,457	376	*371
ELA 7	2,618	0.65	60	0.47	1,461	0.65	410	0.66
Mathematics 7	2,598	*2,521	64	*60	1,445	*1,410	409	*399
ELA 8	2,497	0.60	70	0.67	1,350	0.62	453	0.65
Mathematics 8	2,443	*2,389	66	*64	1,310	*1,274	449	*437
ELA 11	2,253	0.68	60	0.47	1,055	0.66	465	0.62
Mathematics 11	2,224	*2,172	58	*57	1,048	*1,020	461	*444

Table 8.G.9 Content Correlation for English Proficiency Student Groups (Continued)

Content Area and Grade	To Be Determined Students	To Be Determined R and Sample Size	English Proficiency Unknown Students	English Proficiency Unknown R and Sample Size
ELA 3	2	NA	2	NA
Mathematics 3	2	*2	5	*2
ELA 4	4	NA	2	NA
Mathematics 4	4	*4	2	*2
ELA 5	2	NA	5	NA
Mathematics 5	2	*2	4	*4
ELA 6	1	NA	4	NA
Mathematics 6	2	*1	2	*2
ELA 7	2	NA	6	NA
Mathematics 7	1	*1	6	*6
ELA 8	2	NA	3	NA
Mathematics 8	2	*2	4	*3
ELA 11	1	NA	6	NA
Mathematics 11	1	*1	10	*6

Table 8.G.10 Content Correlation for Economic Status Student Groups

Content Area and Grade	Not Economically Disadvantaged Students	Not Economically Disadvantaged R and Sample Size	Economically Disadvantaged Students	Economically Disadvantaged R and Sample Size
ELA 3	1,288	0.65	2,839	0.62
Mathematics 3	1,283	*1,223	2,829	*2,746
ELA 4	1,359	0.65	3,096	0.63
Mathematics 4	1,335	*1,297	3,036	*2,980
ELA 5	1,427	0.60	3,038	0.64
Mathematics 5	1,385	*1,353	2,988	*2,941
ELA 6	1,410	0.63	3,169	0.59
Mathematics 6	1,330	*1,309	3,056	*3,011
ELA 7	1,434	0.66	3,123	0.65
Mathematics 7	1,423	*1,369	3,100	*3,028
ELA 8	1,434	0.62	2,941	0.60
Mathematics 8	1,409	*1,358	2,865	*2,811
ELA 11	1,316	0.68	2,524	0.65
Mathematics 11	1,293	*1,259	2,509	*2,441

Table 8.G.11 Content Correlation for Migrant Status Student Groups

Content Area and Grade	Migrant Students	Migrant R and Sample Size	Nonmigrant Students	Nonmigrant R and Sample Size
ELA 3	19	0.13	4,108	0.63
Mathematics 3	17	*17	4,095	*3,952
ELA 4	38	0.35	4,417	0.64
Mathematics 4	38	*38	4,333	*4,239
ELA 5	28	0.74	4,437	0.63
Mathematics 5	27	*27	4,346	*4,267
ELA 6	31	0.49	4,548	0.60
Mathematics 6	30	*29	4,356	*4,291
ELA 7	32	0.71	4,525	0.65
Mathematics 7	32	*32	4,491	*4,365
ELA 8	31	0.66	4,344	0.61
Mathematics 8	32	*31	4,242	*4,138
ELA 11	15	0.41	3,825	0.66
Mathematics 11	15	*14	3,787	*3,686

Table 8.G.12 Frequency of Responses for Survey Questions—ELA

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
1. Did you end this test early because the student’s productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?	<input type="radio"/> Yes	9%	9%	8%	9%	9%	8%	12%
1. Did you end this test early because the student’s productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?	<input type="radio"/> No	72%	74%	76%	76%	75%	75%	74%
2. Please indicate your student’s mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used a mouse, touchscreen, and/or a computer keyboard to enter responses directly in the system.	54%	56%	58%	62%	63%	62%	62%
2. Please indicate your student’s mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student provided a verbal response.	49%	49%	47%	44%	39%	42%	31%
2. Please indicate your student’s mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used gestures or pointed to indicate a response.	50%	46%	44%	40%	36%	34%	30%

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
2. Please indicate your student’s mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used the accommodation of print on demand and responded (check, circle, fill-in, etc.) on paper.	1%	1%	1%	1%	1%	1%	1%
2. Please indicate your student’s mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used an assistive/augmentative communication device.	2%	2%	2%	2%	2%	2%	1%
2. Please indicate your student’s mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used eye gaze.	3%	3%	3%	3%	3%	3%	3%
2. Please indicate your student’s mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Other	2%	1%	2%	2%	2%	2%	3%
3. How engaged was your student with this test you just administered?	<input type="radio"/> 0 – not engaged at all	4%	3%	3%	3%	3%	3%	3%
3. How engaged was your student with this test you just administered?	<input type="radio"/> 1 – minimally engaged	17%	16%	13%	15%	14%	13%	11%

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
3. How engaged was your student with this test you just administered?	○ 2 – moderately engaged	31%	32%	29%	30%	27%	26%	23%
3. How engaged was your student with this test you just administered?	○ 3 – fully engaged	30%	33%	39%	37%	41%	42%	50%
Total Number Tested:		5,102	5,324	5,330	5,386	5,383	5,238	4,457

Table 8.G.13 Frequency of Responses for Survey Questions—Mathematics

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
1. Did you end this test early because the student's productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?	<input type="radio"/> Yes	9%	8%	8%	8%	10%	8%	12%
1. Did you end this test early because the student's productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?	<input type="radio"/> No	71%	75%	74%	74%	74%	74%	73%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used a mouse, touchscreen, and/or a computer keyboard to enter responses directly in the system.	56%	58%	59%	61%	65%	62%	63%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student provided a verbal response.	45%	47%	45%	40%	39%	39%	31%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used gestures or pointed to indicate a response.	48%	46%	43%	37%	35%	34%	30%

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used the accommodation of print on demand and responded (check, circle, fill-in, etc.) on paper.	1%	1%	1%	1%	1%	1%	1%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used an assistive/augmentative communication device.	2%	2%	2%	2%	2%	2%	2%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Student used eye gaze.	3%	3%	2%	2%	3%	2%	3%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	<input type="checkbox"/> Other	2%	1%	1%	1%	2%	2%	2%
3. How engaged was your student with this test you just administered?	<input type="radio"/> 0 – not engaged at all	4%	4%	3%	3%	3%	4%	4%
3. How engaged was your student with this test you just administered?	<input type="radio"/> 1 – minimally engaged	19%	18%	16%	15%	16%	14%	11%

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
3. How engaged was your student with this test you just administered?	○ 2 – moderately engaged	30%	28%	28%	28%	27%	26%	22%
3. How engaged was your student with this test you just administered?	○ 3 – fully engaged	29%	32%	34%	37%	39%	38%	49%
Total Number Tested:		5,101	5,309	5,319	5,366	5,375	5,229	4,437

Chapter 9: Quality Control Procedures

The California Department of Education (CDE) and Educational Testing Service (ETS) implemented rigorous quality control procedures throughout the test development, administration, scoring, analyses, and reporting processes. As part of this effort, ETS staff worked with its Office of Professional Standards Compliance, which publishes and maintains the *ETS Standards for Quality and Fairness* (ETS, 2014). These *Standards* support the goals of delivering technically sound, fair, and useful products and services; and assisting the public and auditors evaluate those products and services. Quality control procedures are outlined in this chapter.

9.1. Quality Control of Item Development

ETS' goal is to provide the best standards-based items for the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics. Items developed for the CAAs for ELA and mathematics undergo an extensive item review process. The item writers responsible for developing CAA items were trained in California Assessment of Student Performance and Progress (CAASPP) and ETS policies on quality control of item content, sensitivity, and bias guidelines, as well as guidelines for accessibility to ensure that the items allow the widest possible range of students to demonstrate their content knowledge.

Once a written item is accepted for authoring—that is, once it has been entered into ETS' item bank and formatted for use in an assessment—ETS employs a series of internal and external reviews. These reviews use established criteria and specifications to evaluate the quality of items and to ensure that each item measures what it is intended to measure. These reviews also examine the overall quality of the test items before they are presented to the CDE and item reviewers. Finally, a group of California educators review the items for accessibility, bias and sensitivity, and content prior to their administration to students. The details on quality control of item development are described in subsection [3.2 Item Review Process](#).

9.2. Quality Control of Test Assembly and Delivery

The assembly of all test forms must conform to blueprints that represent a set of constraints and specifications. There are separate specifications for the English language arts/literacy (ELA) and mathematics assessments (CDE, 2015a [ELA] and 2015b [mathematics]). These blueprints are critical to the formation of valid assessments.

Quality assurance checks on each constructed test form are critical to overall test integrity.

9.2.1. Quality Control of Test Form Development

ETS conducts multiple levels of quality assurance checks on each constructed test form to ensure it meets defined statistical criteria. Both ETS assessment development and psychometric staff reviewed and signed off on the accuracy of forms before the test forms were put into production for the operational administration. Detailed information related to test assembly can be found in section [4.3 Test Production Process](#).

In particular, the assembly of all test forms went through a certification process that included various checks to verify that

- all answers are correct,
- answers are scored correctly in the item bank,
- all items align with the standard,
- all content in the item is correct,
- distractors are plausible,
- multiple-choice item options are parallel in structure,
- language is grade-level appropriate,
- no more than three multiple choice items in a row have the same key,
- all art is correct,
- there are no mechanical errors in grammar, spelling, punctuation, and the like,
- items adhere to the approved style guide, and
- all items meet the statistical criteria.

Reviews were also conducted for functionality and sequencing during the user acceptance testing process to ensure all items functioned as expected.

9.2.2. Quality Control of Test Assignment

Test assignment for the CAASPP assessments, including the CAAs for ELA and mathematics, is controlled by the Test Operations Management System (TOMS) using student demographic information received from the California Longitudinal Pupil Achievement Data System (CALPADS) (CDE, 2018). The two systems are kept in sync during the testing window. Students at eligible grade levels are assigned to the Smarter Balanced assessments by default. For students eligible for the CAAs for ELA and mathematics, local educational agencies (LEAs) log on to TOMS and assign students to take the alternate assessment, which automatically unassigns those students from taking Smarter Balanced Summative Assessments.

The quality of test assignment for the CAAs is monitored and controlled through several strategies. TOMS enforces preconditions for eligibility for the CAAs by permitting assignment only for students with an Individuals with Disabilities Education Act (IDEA)¹¹ indicator of “Yes” in TOMS. This indicator is set to “Yes” when the CALPADS *Education Program* field (Field 3.13) is equal to 144 (Special Education) and the primary disability code (CALPADS Field 3.21) is not set to blank.

Additionally, TOMS prevents the prohibited “mixing and matching” of assessments. For example, a student assigned to take an alternate assessment for any content area will automatically be prevented from assignment to a general assessment for another content area.

9.2.3. Quality Control of Test Administration

The quality of test administration is managed through comprehensive rules and guidelines for maintaining the security and standardization of CAASPP assessments, including the CAA. LEAs receive training on these topics and are provided with tools to report security incidents and resolve testing discrepancies for specific testing sessions.

Several strategies are utilized to monitor and control the quality of test administration for the CAAs as well as all assessments administered as part of the CAASPP System. A fully

¹¹ The Individuals with Disabilities Education Act is the primary federal program that authorizes state and local aid for special education and related services for children with disabilities.

staffed support center, the California Technical Assistance Center (CalTAC), supports all LEAs in the administration of CAASPP assessments. CalTAC is guided by a core group of LEA outreach and advocacy staff that manage communications to LEAs, regional and web-based trainings, and a website, <http://www.caaspp.org/>, that houses a full range of manuals, videos, and other instructional and support materials. In addition to providing guidance and answering questions, CalTAC regularly conducts outreach campaigns on particular administration topics to ensure all LEAs understand correct test administration procedures.

The ETS Office of Testing Integrity (OTI) reinforces the quality control procedures for test administration by providing quality assurance services for all testing programs managed by ETS. The detailed procedures OTI developed and applied in quality control are described in subsection [5.2.1. ETS' Office of Testing Integrity \(OTI\)](#).

9.2.4. Quality Control of Machine-Scoring Procedures

To ensure valid item-level scoring for the CAAs for ELA and mathematics, quality control procedures are employed by American Institutes for Research (AIR), the CAASPP subcontractor responsible for providing the test delivery system (TDS) and scoring machine-scorable items. AIR psychometric staff members independently review all CAAs for ELA and mathematics test forms by taking sample tests. Responses to the test forms are compared with the answer keys for each form to confirm the accuracy of scoring keys. Score outcomes are contemplated above and below each of the routing thresholds to ensure that the appropriate test stage was assigned in each instance according to the score thresholds approved by the CDE. The scores for all applicable items are recorded prior to the routing action. A final comparison of the test map to each online form as configured in the user acceptance test environment ensures that no changes to the form were introduced prior to operational deployment.

A real-time, quality-monitoring component was built into the TDS. After a test is administered to a student, the TDS passes the resulting data to the Quality Assurance (QA) system. QA conducts a series of data integrity checks, ensuring, for example, that the record for each test contains information for each item, keys for multiple-choice items, score points in each item, and the total number of operational items. In addition, QA also checks to ensure that the test record contains no data from items that have been invalidated.

Data passes directly from the Quality Monitoring System to the Database of Record, which serves as the repository for all test information, and from which all test information for reporting is pulled and transmitted to ETS in a predetermined results format.

9.3. Quality Control of Test Materials

9.3.1. Developing Online Assessments

The steps taken to develop and ensure the quality of the online assessments are described in [Chapter 4: Test Assembly](#).

9.3.2. Test Administration Manuals

ETS staff consult with internal subject matter experts and conduct validation checks to verify that test directions and administration manuals accurately match the test materials and testing processes. Copy editors and content editors review each document for spelling, grammar, accuracy, and adherence to CDE style. Each document must be approved by the CDE before it can be published to the CAASPP Portal at <http://www.caaspp.org/>. Only nonsecure documents are posted on this website. Secure materials, such as the CAA

Directions for Administration, are made available to designated LEA staff through TOMS, which requires a secure log on.

The manuals used in the administration of the CAA are listed in subsection [5.4.4 Instructions for Test Examiners and Staff Involved in CAA Administration](#).

9.3.3. Processing Test Materials

Online tests are submitted by test examiners and transmitted from AIR to ETS each day. The AIR and ETS systems check for the completeness of the student record and flag records that are identified as having an error. For example, the system will identify a test module that is missing a content registration ID, a unique identifier that matches the student's opportunity in the final scoring.

9.4. Quality Control of Psychometric Processes

9.4.1. Development of Scoring Specifications

ETS scoring specifications for the CAA are completed, approved, and checked well in advance of the receipt of student response data. These specifications contain detailed scoring procedures and routing rules, as well as the procedures for determining whether a student has attempted a test and whether that student's response data should be included in the statistical analyses and computing summary data.

9.4.2. Development of Scoring Procedures

ETS' enterprise score key management system (eSKM) utilizes scoring procedures specified by psychometricians and provides scoring services. ETS psychometricians carry out a series of quality control checks after scoring to ensure the accuracy of each score.

9.4.2.1. Enterprise Score Key Management System (eSKM) Processing

Prior to the test administration, ETS Assessment Development staff review and verify the keys and scoring rubrics for all items. Then, these keys and rubrics are provided to AIR for its machine-scoring implementation. After AIR finishes machine-scoring, those scores and responses are delivered to ETS. AIR quality control of the machine-scoring procedure is described in subsection [9.2.3 Quality Control of Test Administration](#).

ETS' Centralized Repository Distribution System and Enterprise Service Bus departments collect and parse .xml files that contain student response data from AIR. ETS' eSKM system collects and calculates individual students' overall scores (total raw scores) and generates student scores in the approved statistical extract format. These data extracts are sent to ETS' Data Quality Services (DQS) for data validation. Following successful validation, the student response statistical extracts are made available to the psychometric team.

ETS developed two parallel scoring systems to produce and verify student scores: the eSKM scoring system receives an individual student's item scores and item responses from AIR and calculates individual student scores for ETS' reporting systems. The Psychometric Analysis and Research team also computes individual student scores based on item scores delivered by AIR. The scores from the two sources are then compared for internal quality control. Any differences in the scores are discussed and resolved. All scores must comply with the ETS scoring specifications and pass the parallel scoring process to ensure the quality and accuracy of scoring, and to support the transfer of scores into TOMS, the database of the student records scoring system.

9.4.2.2. Psychometric Processing

Psychometricians verify the eSKM scoring by comparing the parallel scoring programs. They also conduct extensive analyses including item analyses, differential item functioning, item response theory (IRT) calibration, linking, and scaling.

The psychometric analyses conducted at ETS undergo comprehensive quality checks by a team of psychometricians and data analysts. Detailed checklists are developed by members of the team for each of the statistical procedures performed on each CAA ELA and mathematics assessment. Classical item analyses are performed to evaluate the performance of items such as item difficulties and correlation between item scores and total scores. Items that are flagged for questionable statistical attributes are sent to Assessment Development (AD) staff for review; AD comments are then reviewed by the psychometricians before items are approved for inclusion in calibration.

During the calibration process, checks are made to ascertain that the input files are established accurately. Checks are also made on the number of items, number of examinees with valid scores, IRT item difficulty estimates, standard errors for the item difficulty estimates, and the linking and scaling process. Two psychometricians conduct parallel calibration processing and compare the results to check for any inconsistency. Psychometricians also perform detailed reviews of relevant statistics to determine whether the chosen IRT model fits the data. In addition, the results of the calibration procedures are reviewed by a psychometric manager.

Once raw-to-scale score conversion tables for each form are generated, psychometricians carry out quality control checks on each scoring table to verify

- all possible raw scores for each form are included in the tables;
- the lowest obtainable scale score (LOSS), LOSS+1, and the highest obtainable scale score (HOSS) match the specifications for each grade respectively; and
- the threshold score for the performance level is correctly identified.

After all quality control steps are completed and any differences are resolved, one final inspection of scoring tables is conducted prior to uploading the tables to eSKM for score reporting.

9.5. Quality Control of Reporting

To ensure the quality of CAAs for ELA and mathematics test results for both individual student and summary reports, four general areas are evaluated:

1. Comparison of report formats with input sources from the CDE-approved samples
2. Validation of the report data through quality control checks performed by ETS' DQS and Resolutions teams, as well as running of all the student score reports through ETS' patented Quality Control Integrator software
3. Evaluation of the production of all printed reports by verifying the print quality, comparing number of report copies, sequence of report order, and offset characteristics to the CDE requirements
4. Proofreading of the pilot and production reports by the CDE and ETS prior to any LEA mailings

All reports are required to include a single, accurate LEA code, a charter school number (if applicable), a school district name, and a school name. All elements must conform to the CDE's official county/district/school (CDS) code and naming records. From the start of processing through scoring and reporting, the CDS Master File is used to verify and confirm the accuracy of codes and names. The CDE provides a revised LEA Master File to ETS throughout the year as updates become available.

After the reports are validated in accordance with CDE requirements, a set of reports representing all possible grades, content areas, and reporting outcomes is provided to the CDE and ETS for review and approval. The sample paper reports, representing the way they are expected to look in production are sent to the CDE and ETS for review and approval after a thorough examination.

Upon the CDE's approval of the sample set of reports, ETS proceeds with report production. All reports for all LEAs administering CAAs during the 2017–18 CAASPP administration are produced and distributed as one batch.

9.5.1. Exclusion of Student Scores from Summary Reports

ETS provides the CDE with reporting specifications that document when to exclude student scores from summary reports. These specifications include the logic for handling submitted tests and answer documents that, for example, identify students who tested but responded to no items, who were absent, who were not tested due to parent/guardian request, or who did not complete the test due to illness. The methods for handling other anomalies are also covered in the specifications. These anomalies are described in more detail in the subsection [7.3.2 Special Cases](#).

9.5.2. End-to-End Testing for Operational Administration

ETS conducts end-to-end testing prior to the start of the test administration. The purpose of this testing is to verify that all systems, processes, and resources are ready for the operational administration. ETS employs a number of approaches to verify ongoing systems performance, including monitoring of system availability and online system usage. Time is allotted for user acceptance testing to confirm that the systems meet requirements and to make identified corrections before final deployment. To accomplish system acceptance and sign off, ETS deploys systems to a staging area, which mirrors the final production environment, for operational and user acceptance testing. Final approval by the CDE triggers the final deployment of the system.

References

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Chapter 10: Historical Comparisons

Historical comparisons of the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics results are performed to identify the trends in student performance and test characteristics over time. Such comparisons were performed for ELA and mathematics for grades three through eight and grade eleven for three operational administrations: 2015–16, 2016–17, and 2017–18, with 2015–16 as the base year. The comparisons are cross-sectional comparisons, which are made between the current year and the previous year for the same grades in a content area. Without a vertical scale established across grades in each test, longitudinal comparisons are not possible as scores are not on the same scale across years.

The indicators of student performance include the mean and standard deviation of scale scores and the percentage of students classified into achievement levels. Test characteristics are compared by examining the reliability and standard error of measurement (SEM) for each test.

10.1. Student Performances

In cross-sectional comparisons, different cohorts of students who were at the same grades in 2015–16, 2016–17, and 2017–18 are compared regarding their performances on CAAs for ELA and mathematics administrations. For example, students enrolled in grade three for the 2017–18 CAA administration are compared with students enrolled in grade three for the 2015–16 and 2016–17 CAA administrations. As noted in [Table 7.2](#) on page [94](#) of [Chapter 7: Scoring and Reporting](#), the different grades have different reporting scales, 300s for Grade 3, 400s for Grade 4,, 900s for Grade 11, for both ELA and mathematics.

10.1.1. Summary Statistics

[Table 10.A.1](#) on page [528](#) shows, for each test, the number of students enrolled, the number of students with valid scores, and the means and standard deviations of students' scale scores from 2015–16 to 2017–18.

10.1.2. Achievement Levels of Overall Students

Scale cut scores are used to classify each student into one of three achievement levels: Level 1—Alternate, Level 2—Alternate, and Level 3—Alternate, with higher levels indicating higher performance. Refer to [Table 7.2](#) in [chapter 7](#) for the achievement level scale score ranges for each test. The percentages of students in each achievement level from the 2015–16 administration to the 2017–18 administration are presented in [Table 10.A.2](#).

Note that the percentages for the three achievement levels may not sum to exactly 100 because of rounding. Also note that this information may differ slightly from information found on the California Department of Education (CDE) CAASPP Public Reporting website at <https://caaspp.cde.ca.gov/> because of the different dates on which the data was accessed.

10.1.3. Scale Score Distributions

[Table 10.A.3](#) through [Table 10.A.16](#) starting on page [530](#) show the distributions of scale scores observed from the 2015–16 administration to the 2017–18 administration for each grade and content area. Frequency counts are provided for each scale score interval of 3. A blank indicates that there are no obtainable scale scores beyond the scale score range. The scale score ranges for each grade are those defined in [Table 7.2](#) on page [94](#) of [chapter 7](#) for the scale score ranges.

10.1.4. Achievement Levels of Selected Student Groups

[Table 10.A.17](#) through [Table 10.A.58](#), which start on page [544](#), provide statistics summarizing student achievement by content area and grade for selected student groups. In these tables, students are grouped by demographic characteristics, including gender, ethnicity, English-language fluency, economic status (disadvantaged or not), primary disability groups, migrant status, the use of designated supports (using designated supports or not), and the use of accommodations (using accommodations or not). The tables show, for each demographic student group, the numbers of students with a valid scale score, scale score means and standard deviations, and the percentage of students at each achievement level, for the past three operational administrations.

10.2. Test Characteristics

In the context of multistage testing, tier or form reliability is not appropriate, as each form contains a restricted range of difficulty in its items and is administered to only a narrow sample of the performance range. Instead, the marginal reliabilities averaged across student levels and all possible paths or forms were estimated (Green, Bock, Humphreys, Linn, & Reckase, 1984) and presented along with mean, standard deviation (SD), and standard errors of measurement (SEM) of theta scores in [Table 10.B.1](#) on page [586](#). Reliabilities are affected by both item characteristics and student characteristics. Refer to subsections [8.6.1. Internal Consistency Reliability](#) and [8.6.2 Standard Error of Measurement \(SEM\)](#) for the methods used to calculate marginal reliability and SEM, respectively.

Reference

Green, B. F., Bock, R. D., Humphreys, L. G., Linn, R. L., & Reckase, M. D. (1984). Technical guidelines for assessing computerized adaptive tests. *Journal of Educational Measurement*, 21(4), 347–360.

Appendix 10.A: Cross-Sectional Comparisons of the Overall Group and Selected Groups on the Overall Tests

Notes:

- For consistency, the 2015–16, 2016–17, and 2017–18 results are based on the final data.
- Individual achievement level percentages may not sum to 100 or the combined achievement level percentage due to rounding.
- To protect privacy when the number of students in a student group is 10 or fewer, the summary statistics of performance are not reported and are presented as “NA.”
- N means the number of valid scores unless it is specified otherwise; for example, “N enrolled” means the number of students enrolled.

Table 10.A.1 Summary Statistics of the Total Test across 2015–16, 2016–17, and 2017–18, Cross-Sectional Comparisons

Content Area and Grade	2015–16				2016–17				2017–18			
	Number Enrolled	Number Tested	Scale Score Mean	Scale Score SD	Number Enrolled	Number Tested	Scale Score Mean	Scale Score SD	Number Enrolled	Number Tested	Scale Score Mean	Scale Score SD
ELA 3	5,462	4,962	339	25	5,385	5,003	342	26	5,518	5,102	340	25
ELA 4	5,751	5,267	437	22	5,817	5,410	439	24	5,710	5,324	438	23
ELA 5	5,674	5,098	537	21	5,965	5,533	538	23	5,766	5,330	539	23
ELA 6	5,656	5,116	637	20	5,805	5,336	638	20	5,887	5,386	639	20
ELA 7	5,672	5,123	736	21	5,807	5,288	736	22	5,969	5,383	738	23
ELA 8	5,347	4,755	838	21	5,784	5,247	840	21	5,808	5,238	840	21
ELA 11	5,210	4,273	940	20	5,322	4,505	941	22	5,330	4,457	943	22
Mathematics 3	5,462	4,978	331	21	5,385	4,989	333	21	5,518	5,101	335	21
Mathematics 4	5,751	5,283	432	20	5,817	5,396	433	21	5,710	5,309	434	21
Mathematics 5	5,674	5,098	532	20	5,965	5,543	533	21	5,766	5,319	535	21
Mathematics 6	5,656	5,123	631	20	5,805	5,321	634	20	5,887	5,366	635	20
Mathematics 7	5,672	5,117	732	21	5,807	5,275	733	22	5,969	5,375	735	20
Mathematics 8	5,347	4,757	831	20	5,784	5,232	834	21	5,808	5,229	834	20
Mathematics 11	5,210	4,268	933	20	5,322	4,496	934	20	5,330	4,437	935	21

Table 10.A.2 Percentage of Each Achievement Level across 2015–16, 2016–17, and 2017–18, Cross-Sectional Comparisons

Content Area and Grade	Level 1 in 2015–16	Level 1 in 2016–17	Level 1 in 2017–18	Level 2 in 2015–16	Level 2 in 2016–17	Level 2 in 2017–18	Level 3 in 2015–16	Level 3 in 2016–17	Level 3 in 2017–18
ELA 3	54%	53%	51%	25%	22%	28%	21%	25%	21%
ELA 4	59%	54%	55%	29%	29%	27%	11%	16%	18%
ELA 5	57%	54%	51%	35%	32%	30%	9%	14%	19%
ELA 6	54%	54%	54%	38%	37%	35%	8%	9%	11%
ELA 7	57%	59%	55%	35%	28%	27%	8%	13%	18%
ELA 8	47%	38%	48%	44%	50%	39%	9%	11%	13%
ELA 11	43%	43%	44%	49%	39%	35%	8%	18%	21%
Mathematics 3	72%	67%	62%	23%	28%	30%	5%	6%	8%
Mathematics 4	70%	68%	65%	26%	25%	26%	4%	7%	8%
Mathematics 5	70%	64%	63%	25%	30%	29%	5%	6%	9%
Mathematics 6	73%	67%	67%	23%	30%	26%	4%	4%	7%
Mathematics 7	70%	69%	65%	24%	24%	27%	5%	8%	7%
Mathematics 8	71%	66%	64%	25%	27%	29%	4%	7%	7%
Mathematics 11	66%	66%	65%	29%	28%	26%	6%	6%	9%

Table 10.A.3 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for ELA, Grade Three

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[300, 302]	949	19%	826	17%	975	19%
[303, 305]	104	2%	188	4%	88	2%
[306, 308]	14	0%	20	0%	19	0%
[309, 311]	43	1%	12	0%	0	0%
[312, 314]	42	1%	16	0%	17	0%
[315, 317]	37	1%	25	0%	61	1%
[318, 320]	46	1%	28	1%	48	1%
[321, 323]	68	1%	37	1%	36	1%
[324, 326]	38	1%	109	2%	119	2%
[327, 329]	132	3%	97	2%	75	1%
[330, 332]	168	3%	114	2%	183	4%
[333, 335]	180	4%	298	6%	137	3%
[336, 338]	309	6%	334	7%	318	6%
[339, 341]	209	4%	184	4%	290	6%
[342, 344]	347	7%	351	7%	227	4%
[345, 347]	268	5%	210	4%	364	7%
[348, 350]	301	6%	218	4%	213	4%
[351, 353]	256	5%	230	5%	351	7%
[354, 356]	254	5%	185	4%	222	4%
[357, 359]	152	3%	264	5%	269	5%
[360, 362]	261	5%	152	3%	150	3%
[363, 365]	146	3%	125	2%	226	4%
[366, 368]	118	2%	146	3%	150	3%
[369, 371]	133	3%	120	2%	138	3%
[372, 374]	89	2%	155	3%	133	3%
[375, 377]	108	2%	148	3%	86	2%
[378, 380]	34	1%	119	2%	23	0%
[381, 383]	36	1%	0	0%	68	1%
[384, 386]	29	1%	113	2%	57	1%
[387, 389]	27	1%	0	0%	0	0%
[390, 392]	20	0%	95	2%	0	0%
[393, 395]	0	0%	0	0%	33	1%
[396, 398]	0	0%	0	0%	0	0%
[399, 399]	44	1%	84	2%	26	1%

Table 10.A.4 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for ELA, Grade Four

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[400, 402]	956	18%	881	16%	869	16%
[403, 405]	63	1%	223	4%	120	2%
[406, 408]	30	1%	19	0%	20	0%
[409, 411]	41	1%	19	0%	22	0%
[412, 414]	48	1%	20	0%	18	0%
[415, 417]	58	1%	24	0%	48	1%
[418, 420]	46	1%	31	1%	35	1%
[421, 423]	58	1%	72	1%	60	1%
[424, 426]	60	1%	58	1%	147	3%
[427, 429]	96	2%	76	1%	127	2%
[430, 432]	170	3%	221	4%	302	6%
[433, 435]	220	4%	335	6%	348	7%
[436, 438]	427	8%	216	4%	225	4%
[439, 441]	447	8%	349	6%	376	7%
[442, 444]	412	8%	385	7%	212	4%
[445, 447]	347	7%	381	7%	376	7%
[448, 450]	375	7%	284	5%	193	4%
[451, 453]	353	7%	407	8%	423	8%
[454, 456]	239	5%	220	4%	214	4%
[457, 459]	219	4%	301	6%	213	4%
[460, 462]	195	4%	187	3%	281	5%
[463, 465]	145	3%	155	3%	205	4%
[466, 468]	76	1%	113	2%	157	3%
[469, 471]	66	1%	131	2%	104	2%
[472, 474]	18	0%	101	2%	79	1%
[475, 477]	39	1%	1	0%	3	0%
[478, 480]	18	0%	88	2%	74	1%
[481, 483]	11	0%	0	0%	34	1%
[484, 486]	5	0%	55	1%	0	0%
[487, 489]	10	0%	0	0%	0	0%
[490, 492]	0	0%	0	0%	25	0%
[493, 495]	0	0%	0	0%	0	0%
[496, 498]	10	0%	41	1%	0	0%
[499, 499]	9	0%	16	0%	14	0%

Table 10.A.5 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for ELA, Grade Five

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[500, 502]	879	17%	913	17%	865	16%
[503, 505]	37	1%	162	3%	117	2%
[506, 508]	26	1%	18	0%	8	0%
[509, 511]	23	0%	14	0%	21	0%
[512, 514]	28	1%	22	0%	20	0%
[515, 517]	57	1%	21	0%	53	1%
[518, 520]	56	1%	30	1%	51	1%
[521, 523]	73	1%	90	2%	67	1%
[524, 526]	81	2%	61	1%	169	3%
[527, 529]	87	2%	212	4%	109	2%
[530, 532]	134	3%	130	2%	288	5%
[533, 535]	236	5%	346	6%	180	3%
[536, 538]	224	4%	352	6%	297	6%
[539, 541]	483	9%	275	5%	263	5%
[542, 544]	472	9%	336	6%	227	4%
[545, 547]	516	10%	371	7%	356	7%
[548, 550]	431	8%	518	9%	257	5%
[551, 553]	287	6%	270	5%	376	7%
[554, 556]	217	4%	263	5%	378	7%
[557, 559]	316	6%	363	7%	240	5%
[560, 562]	138	3%	164	3%	379	7%
[563, 565]	88	2%	150	3%	188	4%
[566, 568]	117	2%	111	2%	138	3%
[569, 571]	0	0%	96	2%	98	2%
[572, 574]	41	1%	87	2%	59	1%
[575, 577]	24	0%	53	1%	6	0%
[578, 580]	15	0%	0	0%	54	1%
[581, 583]	0	0%	45	1%	0	0%
[584, 586]	0	0%	0	0%	25	0%
[587, 589]	6	0%	39	1%	0	0%
[590, 592]	0	0%	0	0%	27	1%
[593, 595]	0	0%	0	0%	0	0%
[596, 598]	6	0%	0	0%	0	0%
[599, 599]	0	0%	21	0%	14	0%

Table 10.A.6 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for ELA, Grade Six

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[600, 602]	873	17%	770	14%	807	15%
[603, 605]	28	1%	74	1%	42	1%
[606, 608]	23	0%	68	1%	18	0%
[609, 611]	0	0%	0	0%	0	0%
[612, 614]	28	1%	23	0%	25	0%
[615, 617]	27	1%	24	0%	35	1%
[618, 620]	41	1%	38	1%	35	1%
[621, 623]	61	1%	15	0%	64	1%
[624, 626]	85	2%	59	1%	78	1%
[627, 629]	109	2%	118	2%	132	2%
[630, 632]	167	3%	195	4%	146	3%
[633, 635]	196	4%	295	6%	281	5%
[636, 638]	292	6%	361	7%	371	7%
[639, 641]	434	8%	487	9%	425	8%
[642, 644]	415	8%	366	7%	463	9%
[645, 647]	522	10%	451	8%	471	9%
[648, 650]	377	7%	464	9%	313	6%
[651, 653]	441	9%	488	9%	460	9%
[654, 656]	410	8%	390	7%	239	4%
[657, 659]	193	4%	195	4%	387	7%
[660, 662]	183	4%	230	4%	168	3%
[663, 665]	112	2%	83	2%	156	3%
[666, 668]	39	1%	64	1%	98	2%
[669, 671]	21	0%	36	1%	79	1%
[672, 674]	15	0%	19	0%	45	1%
[675, 677]	10	0%	0	0%	28	1%
[678, 680]	7	0%	13	0%	0	0%
[681, 683]	0	0%	0	0%	16	0%
[684, 686]	4	0%	0	0%	0	0%
[687, 689]	0	0%	6	0%	0	0%
[690, 692]	0	0%	0	0%	4	0%
[693, 695]	3	0%	0	0%	0	0%
[696, 698]	0	0%	0	0%	0	0%
[699, 699]	0	0%	4	0%	0	0%

Table 10.A.7 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for ELA, Grade Seven

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[700, 702]	958	19%	884	17%	826	15%
[703, 705]	87	2%	216	4%	167	3%
[706, 708]	20	0%	15	0%	20	0%
[709, 711]	21	0%	26	0%	25	0%
[712, 714]	42	1%	24	0%	25	0%
[715, 717]	27	1%	23	0%	34	1%
[718, 720]	86	2%	40	1%	117	2%
[721, 723]	92	2%	60	1%	60	1%
[724, 726]	137	3%	84	2%	101	2%
[727, 729]	85	2%	122	2%	263	5%
[730, 732]	137	3%	311	6%	165	3%
[733, 735]	208	4%	231	4%	188	3%
[736, 738]	198	4%	451	9%	333	6%
[739, 741]	427	8%	344	7%	360	7%
[742, 744]	376	7%	277	5%	289	5%
[745, 747]	383	7%	429	8%	233	4%
[748, 750]	489	10%	220	4%	438	8%
[751, 753]	402	8%	342	6%	276	5%
[754, 756]	194	4%	354	7%	217	4%
[757, 759]	323	6%	148	3%	281	5%
[760, 762]	108	2%	206	4%	191	4%
[763, 765]	164	3%	170	3%	191	4%
[766, 768]	45	1%	74	1%	245	5%
[769, 771]	40	1%	52	1%	122	2%
[772, 774]	35	1%	47	1%	77	1%
[775, 777]	20	0%	42	1%	0	0%
[778, 780]	0	0%	37	1%	49	1%
[781, 783]	8	0%	1	0%	45	1%
[784, 786]	2	0%	28	1%	0	0%
[787, 789]	2	0%	0	0%	20	0%
[790, 792]	0	0%	19	0%	0	0%
[793, 795]	6	0%	0	0%	17	0%
[796, 798]	0	0%	0	0%	0	0%
[799, 799]	1	0%	11	0%	8	0%

Table 10.A.8 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for ELA, Grade Eight

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[800, 802]	888	19%	881	17%	863	16%
[803, 805]	34	1%	66	1%	70	1%
[806, 808]	7	0%	44	1%	0	0%
[809, 811]	4	0%	89	2%	17	0%
[812, 814]	22	0%	9	0%	14	0%
[815, 817]	36	1%	10	0%	8	0%
[818, 820]	31	1%	18	0%	6	0%
[821, 823]	44	1%	15	0%	15	0%
[824, 826]	44	1%	11	0%	39	1%
[827, 829]	47	1%	37	1%	30	1%
[830, 832]	67	1%	61	1%	105	2%
[833, 835]	88	2%	55	1%	206	4%
[836, 838]	188	4%	135	3%	278	5%
[839, 841]	242	5%	221	4%	422	8%
[842, 844]	497	10%	367	7%	454	9%
[845, 847]	543	11%	815	16%	488	9%
[848, 850]	531	11%	621	12%	426	8%
[851, 853]	357	8%	565	11%	508	10%
[854, 856]	472	10%	293	6%	451	9%
[857, 859]	187	4%	354	7%	165	3%
[860, 862]	189	4%	185	4%	287	5%
[863, 865]	92	2%	218	4%	109	2%
[866, 868]	69	1%	73	1%	85	2%
[869, 871]	36	1%	43	1%	54	1%
[872, 874]	19	0%	25	0%	51	1%
[875, 877]	8	0%	15	0%	44	1%
[878, 880]	7	0%	3	0%	24	0%
[881, 883]	5	0%	9	0%	0	0%
[884, 886]	1	0%	8	0%	16	0%
[887, 889]	0	0%	0	0%	0	0%
[890, 892]	0	0%	0	0%	0	0%
[893, 895]	0	0%	0	0%	2	0%
[896, 898]	0	0%	0	0%	0	0%
[899, 899]	0	0%	1	0%	1	0%

Table 10.A.9 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for ELA, Grade Eleven

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[900, 902]	625	15%	712	16%	617	14%
[903, 905]	31	1%	37	1%	74	2%
[906, 908]	9	0%	35	1%	17	0%
[909, 911]	14	0%	0	0%	9	0%
[912, 914]	6	0%	13	0%	5	0%
[915, 917]	30	1%	13	0%	11	0%
[918, 920]	37	1%	12	0%	12	0%
[921, 923]	43	1%	20	0%	17	0%
[924, 926]	67	2%	54	1%	65	1%
[927, 929]	49	1%	37	1%	41	1%
[930, 932]	99	2%	109	2%	108	2%
[933, 935]	65	2%	83	2%	179	4%
[936, 938]	111	3%	218	5%	215	5%
[939, 941]	255	6%	235	5%	249	6%
[942, 944]	385	9%	360	8%	335	8%
[945, 947]	587	14%	445	10%	378	8%
[948, 950]	577	14%	454	10%	390	9%
[951, 953]	392	9%	222	5%	198	4%
[954, 956]	308	7%	419	9%	362	8%
[957, 959]	246	6%	203	5%	228	5%
[960, 962]	121	3%	345	8%	242	5%
[963, 965]	136	3%	140	3%	210	5%
[966, 968]	31	1%	147	3%	103	2%
[969, 971]	18	0%	68	2%	118	3%
[972, 974]	17	0%	55	1%	86	2%
[975, 977]	6	0%	22	0%	72	2%
[978, 980]	7	0%	14	0%	52	1%
[981, 983]	0	0%	23	1%	44	1%
[984, 986]	1	0%	0	0%	0	0%
[987, 989]	0	0%	9	0%	12	0%
[990, 992]	0	0%	0	0%	0	0%
[993, 995]	0	0%	0	0%	0	0%
[996, 998]	0	0%	1	0%	6	0%
[999, 999]	0	0%	0	0%	2	0%

Table 10.A.10 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for Mathematics, Grade Three

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[300, 302]	1,099	22%	919	18%	989	19%
[303, 305]	95	2%	351	7%	134	3%
[306, 308]	0	0%	0	0%	23	0%
[309, 311]	45	1%	23	0%	20	0%
[312, 314]	51	1%	19	0%	9	0%
[315, 317]	36	1%	20	0%	29	1%
[318, 320]	87	2%	36	1%	76	1%
[321, 323]	171	3%	41	1%	61	1%
[324, 326]	112	2%	86	2%	80	2%
[327, 329]	212	4%	174	3%	105	2%
[330, 332]	180	4%	136	3%	304	6%
[333, 335]	239	5%	282	6%	199	4%
[336, 338]	369	7%	326	7%	316	6%
[339, 341]	375	8%	369	7%	512	10%
[342, 344]	524	11%	542	11%	322	6%
[345, 347]	245	5%	392	8%	419	8%
[348, 350]	411	8%	397	8%	244	5%
[351, 353]	180	4%	179	4%	531	10%
[354, 356]	211	4%	305	6%	178	3%
[357, 359]	105	2%	100	2%	143	3%
[360, 362]	82	2%	85	2%	102	2%
[363, 365]	43	1%	67	1%	85	2%
[366, 368]	30	1%	53	1%	64	1%
[369, 371]	22	0%	19	0%	42	1%
[372, 374]	0	0%	31	1%	38	1%
[375, 377]	13	0%	15	0%	14	0%
[378, 380]	13	0%	6	0%	22	0%
[381, 383]	9	0%	0	0%	0	0%
[384, 386]	2	0%	6	0%	10	0%
[387, 389]	3	0%	0	0%	13	0%
[390, 392]	0	0%	3	0%	0	0%
[393, 395]	0	0%	0	0%	4	0%
[396, 398]	6	0%	0	0%	0	0%
[399, 399]	8	0%	7	0%	13	0%

Table 10.A.11 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for Mathematics, Grade Four

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[400, 402]	994	19%	1,032	19%	938	18%
[403, 405]	136	3%	261	5%	156	3%
[406, 408]	55	1%	17	0%	0	0%
[409, 411]	65	1%	0	0%	31	1%
[412, 414]	0	0%	13	0%	34	1%
[415, 417]	92	2%	25	0%	97	2%
[418, 420]	107	2%	38	1%	53	1%
[421, 423]	131	2%	55	1%	85	2%
[424, 426]	93	2%	169	3%	88	2%
[427, 429]	201	4%	133	2%	283	5%
[430, 432]	177	3%	179	3%	176	3%
[433, 435]	182	3%	326	6%	481	9%
[436, 438]	507	10%	520	10%	287	5%
[439, 441]	443	8%	323	6%	418	8%
[442, 444]	510	10%	570	11%	343	6%
[445, 447]	427	8%	418	8%	572	11%
[448, 450]	416	8%	311	6%	239	5%
[451, 453]	217	4%	375	7%	216	4%
[454, 456]	174	3%	152	3%	194	4%
[457, 459]	131	2%	105	2%	179	3%
[460, 462]	71	1%	123	2%	176	3%
[463, 465]	33	1%	71	1%	92	2%
[466, 468]	52	1%	45	1%	55	1%
[469, 471]	12	0%	29	1%	36	1%
[472, 474]	16	0%	30	1%	6	0%
[475, 477]	10	0%	0	0%	17	0%
[478, 480]	9	0%	13	0%	23	0%
[481, 483]	1	0%	16	0%	15	0%
[484, 486]	4	0%	0	0%	0	0%
[487, 489]	4	0%	13	0%	7	0%
[490, 492]	0	0%	0	0%	0	0%
[493, 495]	8	0%	15	0%	3	0%
[496, 498]	0	0%	0	0%	0	0%
[499, 499]	5	0%	19	0%	9	0%

Table 10.A.12 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for Mathematics, Grade Five

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[500, 502]	1,031	20%	1,021	18%	946	18%
[503, 505]	91	2%	321	6%	145	3%
[506, 508]	34	1%	17	0%	24	0%
[509, 511]	32	1%	0	0%	0	0%
[512, 514]	26	1%	28	1%	33	1%
[515, 517]	78	2%	18	0%	32	1%
[518, 520]	69	1%	62	1%	53	1%
[521, 523]	62	1%	72	1%	145	3%
[524, 526]	86	2%	79	1%	94	2%
[527, 529]	129	3%	261	5%	173	3%
[530, 532]	253	5%	187	3%	255	5%
[533, 535]	402	8%	369	7%	209	4%
[536, 538]	256	5%	233	4%	544	10%
[539, 541]	575	11%	542	10%	384	7%
[542, 544]	469	9%	349	6%	311	6%
[545, 547]	403	8%	598	11%	548	10%
[548, 550]	389	8%	358	6%	252	5%
[551, 553]	269	5%	354	6%	285	5%
[554, 556]	125	2%	233	4%	288	5%
[557, 559]	86	2%	123	2%	145	3%
[560, 562]	86	2%	101	2%	103	2%
[563, 565]	35	1%	58	1%	77	1%
[566, 568]	28	1%	32	1%	131	2%
[569, 571]	22	0%	32	1%	41	1%
[572, 574]	15	0%	25	0%	36	1%
[575, 577]	7	0%	16	0%	0	0%
[578, 580]	8	0%	10	0%	27	1%
[581, 583]	8	0%	0	0%	12	0%
[584, 586]	0	0%	12	0%	5	0%
[587, 589]	10	0%	13	0%	0	0%
[590, 592]	0	0%	0	0%	11	0%
[593, 595]	3	0%	7	0%	0	0%
[596, 598]	0	0%	0	0%	2	0%
[599, 599]	11	0%	12	0%	8	0%

Table 10.A.13 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for Mathematics, Grade Six

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[600, 602]	1,003	20%	1,008	19%	980	18%
[603, 605]	87	2%	196	4%	96	2%
[606, 608]	25	0%	0	0%	19	0%
[609, 611]	38	1%	18	0%	0	0%
[612, 614]	91	2%	28	1%	18	0%
[615, 617]	135	3%	0	0%	29	1%
[618, 620]	99	2%	26	0%	28	1%
[621, 623]	183	4%	38	1%	49	1%
[624, 626]	196	4%	46	1%	77	1%
[627, 629]	282	6%	185	3%	228	4%
[630, 632]	176	3%	149	3%	197	4%
[633, 635]	183	4%	400	8%	470	9%
[636, 638]	312	6%	276	5%	299	6%
[639, 641]	344	7%	686	13%	693	13%
[642, 644]	564	11%	499	9%	403	8%
[645, 647]	424	8%	625	12%	286	5%
[648, 650]	323	6%	257	5%	489	9%
[651, 653]	205	4%	384	7%	198	4%
[654, 656]	102	2%	137	3%	279	5%
[657, 659]	139	3%	167	3%	140	3%
[660, 662]	46	1%	48	1%	73	1%
[663, 665]	40	1%	57	1%	86	2%
[666, 668]	35	1%	19	0%	110	2%
[669, 671]	27	1%	20	0%	0	0%
[672, 674]	14	0%	9	0%	32	1%
[675, 677]	12	0%	10	0%	31	1%
[678, 680]	10	0%	0	0%	23	0%
[681, 683]	8	0%	9	0%	1	0%
[684, 686]	0	0%	9	0%	16	0%
[687, 689]	6	0%	0	0%	0	0%
[690, 692]	0	0%	3	0%	6	0%
[693, 695]	4	0%	0	0%	0	0%
[696, 698]	0	0%	0	0%	0	0%
[699, 699]	10	0%	12	0%	10	0%

Table 10.A.14 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for Mathematics, Grade Seven

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[700, 702]	1,041	20%	1,034	20%	852	16%
[703, 705]	128	3%	289	5%	141	3%
[706, 708]	35	1%	20	0%	20	0%
[709, 711]	26	1%	23	0%	11	0%
[712, 714]	85	2%	10	0%	35	1%
[715, 717]	152	3%	15	0%	26	0%
[718, 720]	74	1%	31	1%	38	1%
[721, 723]	58	1%	82	2%	109	2%
[724, 726]	78	2%	118	2%	125	2%
[727, 729]	79	2%	164	3%	210	4%
[730, 732]	258	5%	296	6%	378	7%
[733, 735]	289	6%	426	8%	284	5%
[736, 738]	452	9%	271	5%	455	8%
[739, 741]	385	8%	400	8%	510	9%
[742, 744]	460	9%	454	9%	322	6%
[745, 747]	415	8%	453	9%	360	7%
[748, 750]	253	5%	253	5%	458	9%
[751, 753]	242	5%	277	5%	222	4%
[754, 756]	182	4%	118	2%	180	3%
[757, 759]	150	3%	140	3%	252	5%
[760, 762]	49	1%	82	2%	93	2%
[763, 765]	58	1%	62	1%	70	1%
[766, 768]	34	1%	49	1%	53	1%
[769, 771]	33	1%	47	1%	38	1%
[772, 774]	20	0%	31	1%	30	1%
[775, 777]	17	0%	28	1%	0	0%
[778, 780]	17	0%	24	0%	36	1%
[781, 783]	22	0%	25	0%	22	0%
[784, 786]	0	0%	0	0%	18	0%
[787, 789]	9	0%	20	0%	0	0%
[790, 792]	0	0%	11	0%	12	0%
[793, 795]	11	0%	0	0%	0	0%
[796, 798]	0	0%	0	0%	6	0%
[799, 799]	5	0%	22	0%	9	0%

Table 10.A.15 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for Mathematics, Grade Eight

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[800, 802]	966	20%	983	19%	955	18%
[803, 805]	103	2%	156	3%	91	2%
[806, 808]	47	1%	16	0%	0	0%
[809, 811]	46	1%	0	0%	15	0%
[812, 814]	104	2%	19	0%	8	0%
[815, 817]	140	3%	65	1%	25	0%
[818, 820]	130	3%	50	1%	72	1%
[821, 823]	101	2%	61	1%	60	1%
[824, 826]	59	1%	147	3%	136	3%
[827, 829]	84	2%	153	3%	165	3%
[830, 832]	96	2%	280	5%	252	5%
[833, 835]	275	6%	434	8%	436	8%
[836, 838]	345	7%	322	6%	280	5%
[839, 841]	411	9%	475	9%	578	11%
[842, 844]	470	10%	278	5%	277	5%
[845, 847]	438	9%	482	9%	532	10%
[848, 850]	216	5%	292	6%	448	9%
[851, 853]	200	4%	278	5%	178	3%
[854, 856]	192	4%	142	3%	271	5%
[857, 859]	124	3%	216	4%	100	2%
[860, 862]	72	2%	96	2%	81	2%
[863, 865]	55	1%	64	1%	103	2%
[866, 868]	31	1%	62	1%	41	1%
[869, 871]	19	0%	48	1%	35	1%
[872, 874]	11	0%	35	1%	22	0%
[875, 877]	3	0%	25	0%	24	0%
[878, 880]	10	0%	0	0%	14	0%
[881, 883]	4	0%	19	0%	13	0%
[884, 886]	0	0%	13	0%	0	0%
[887, 889]	1	0%	0	0%	6	0%
[890, 892]	1	0%	9	0%	4	0%
[893, 895]	0	0%	0	0%	0	0%
[896, 898]	2	0%	6	0%	3	0%
[899, 899]	1	0%	6	0%	4	0%

Table 10.A.16 Scale Score Distributions across 2015–16, 2016–17, and 2017–18 for Mathematics, Grade Eleven

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent	2017–18 N	2017–18 Percent
[900, 902]	695	16%	754	17%	635	14%
[903, 905]	144	3%	225	5%	149	3%
[906, 908]	19	0%	0	0%	20	0%
[909, 911]	35	1%	15	0%	22	0%
[912, 914]	85	2%	16	0%	27	1%
[915, 917]	79	2%	17	0%	37	1%
[918, 920]	87	2%	37	1%	43	1%
[921, 923]	76	2%	45	1%	148	3%
[924, 926]	77	2%	136	3%	97	2%
[927, 929]	106	2%	116	3%	214	5%
[930, 932]	106	2%	257	6%	290	7%
[933, 935]	329	8%	237	5%	196	4%
[936, 938]	204	5%	320	7%	386	9%
[939, 941]	502	12%	521	12%	272	6%
[942, 944]	268	6%	262	6%	350	8%
[945, 947]	456	11%	527	12%	309	7%
[948, 950]	365	9%	212	5%	266	6%
[951, 953]	137	3%	323	7%	139	3%
[954, 956]	182	4%	129	3%	286	6%
[957, 959]	77	2%	87	2%	135	3%
[960, 962]	62	1%	123	3%	103	2%
[963, 965]	37	1%	40	1%	92	2%
[966, 968]	31	1%	22	0%	57	1%
[969, 971]	28	1%	16	0%	49	1%
[972, 974]	16	0%	17	0%	39	1%
[975, 977]	17	0%	0	0%	0	0%
[978, 980]	15	0%	10	0%	24	1%
[981, 983]	0	0%	12	0%	17	0%
[984, 986]	12	0%	0	0%	0	0%
[987, 989]	0	0%	10	0%	14	0%
[990, 992]	8	0%	0	0%	0	0%
[993, 995]	0	0%	0	0%	0	0%
[996, 998]	0	0%	5	0%	11	0%
[999, 999]	13	0%	5	0%	10	0%

Table 10.A.17 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for ELA, Grade Three

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,962	339	25	54%	25%	21%
Male	3,383	339	25	53%	25%	22%
Female	1,579	337	25	56%	24%	20%
American Indian or Alaska Native	34	345	20	44%	35%	21%
Asian	414	336	24	60%	27%	14%
Native Hawaiian or Other Pacific Islander	17	329	25	71%	12%	18%
Filipino	119	332	23	66%	22%	13%
Hispanic or Latino	2,865	339	25	53%	26%	21%
Black or African American	357	338	25	56%	21%	23%
White	971	339	26	53%	24%	23%
Two or more races	185	341	24	51%	23%	26%
English only	2,953	338	26	55%	24%	21%
Initial fluent English proficient	33	335	24	64%	24%	12%
English learner	1,861	339	24	53%	26%	21%
Reclassified fluent English proficient	105	342	25	51%	23%	26%
To be determined	6	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,315	341	25	50%	26%	24%
Not economically disadvantaged	1,647	334	25	62%	23%	15%
Migrant	26	355	24	35%	23%	42%
Nonmigrant	4,936	339	25	54%	25%	21%
Intellectual disability	1,605	335	22	65%	23%	12%
Hearing impairment	51	345	20	37%	39%	24%
Speech or language impairment	227	356	19	21%	32%	47%
Visual impairment	31	320	27	74%	19%	6%
Emotional disturbance	20	359	20	20%	20%	60%
Orthopedic impairment	243	328	29	68%	17%	15%
Other health impairment	283	345	25	45%	24%	31%
Specific learning disability	310	365	17	7%	27%	66%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	256	318	22	84%	11%	4%
Autism	1,863	339	24	53%	27%	20%
Traumatic brain injury	17	345	23	35%	41%	24%
Not classified	56	335	23	61%	25%	14%
Using designated supports	1,318	343	25	48%	26%	27%
No designated supports	3,644	337	25	57%	24%	19%
Using accommodations	1,092	340	26	52%	23%	25%
No accommodations	3,870	338	25	55%	25%	20%

Table 10.A.18 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for ELA, Grade Three

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,003	342	26	53%	22%	25%
Male	3,396	342	27	52%	22%	26%
Female	1,607	341	26	54%	22%	24%
American Indian or Alaska Native	26	353	24	31%	35%	35%
Asian	392	336	24	63%	23%	15%
Native Hawaiian or Other Pacific Islander	24	342	26	54%	21%	25%
Filipino	117	334	24	62%	25%	14%
Hispanic or Latino	2,906	343	27	51%	22%	27%
Black or African American	364	340	26	54%	23%	23%
White	956	342	27	52%	22%	26%
Two or more races	218	339	27	56%	21%	24%
English only	3,004	342	27	52%	22%	26%
Initial fluent English proficient	47	337	23	66%	21%	13%
English learner	1,804	342	26	52%	23%	25%
Reclassified fluent English proficient	139	340	25	58%	22%	20%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,278	344	26	49%	22%	29%
Not economically disadvantaged	1,725	336	26	60%	22%	19%
Migrant	44	359	24	32%	23%	45%
Nonmigrant	4,959	341	26	53%	22%	25%
Intellectual disability	1,655	338	23	61%	23%	15%
Hearing impairment	44	348	24	39%	34%	27%
Speech or language impairment	217	358	20	24%	29%	47%
Visual impairment	21	326	27	67%	24%	10%
Emotional disturbance	29	362	25	28%	7%	66%
Orthopedic impairment	224	331	30	64%	17%	19%
Other health impairment	283	352	25	36%	26%	38%
Specific learning disability	357	371	18	9%	14%	77%
Deaf–blindness	2	NA	NA	NA	NA	NA
Multiple disabilities	245	320	24	84%	9%	7%
Autism	1,907	340	25	55%	24%	22%
Traumatic brain injury	18	343	29	50%	11%	39%
Not classified	1	NA	NA	NA	NA	NA
Using designated supports	1,621	345	26	48%	22%	30%
No designated supports	3,382	340	27	55%	22%	23%
Using accommodations	1,400	342	27	52%	22%	26%
No accommodations	3,603	341	26	53%	22%	25%

Table 10.A.19 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for ELA, Grade Three

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,102	340	25	51%	28%	21%
Male	3,540	340	25	51%	28%	21%
Female	1,562	340	25	51%	28%	22%
American Indian or Alaska Native	34	342	26	38%	32%	29%
Asian	398	336	23	58%	29%	14%
Native Hawaiian or Other Pacific Islander	23	337	25	57%	30%	13%
Filipino	131	336	24	54%	34%	11%
Hispanic or Latino	2,921	340	25	50%	28%	22%
Black or African American	388	340	25	52%	26%	22%
White	957	340	26	51%	24%	24%
Two or more races	250	338	24	51%	32%	17%
English only	3,124	340	25	51%	26%	22%
Initial fluent English proficient	36	332	26	58%	33%	8%
English learner	1,764	341	24	49%	30%	21%
Reclassified fluent English proficient	169	336	25	57%	25%	17%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,436	342	25	48%	29%	23%
Not economically disadvantaged	1,666	336	25	58%	25%	17%
Migrant	23	342	23	48%	26%	26%
Nonmigrant	5,079	340	25	51%	28%	21%
Intellectual disability	1,592	338	22	56%	31%	14%
Hearing impairment	48	342	24	42%	35%	23%
Speech or language impairment	205	357	18	19%	34%	48%
Visual impairment	18	334	33	56%	6%	39%
Emotional disturbance	23	361	14	17%	35%	48%
Orthopedic impairment	172	326	27	67%	21%	12%
Other health impairment	308	351	23	36%	25%	39%
Specific learning disability	288	368	14	3%	22%	75%
Deaf–blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	260	319	22	82%	14%	3%
Autism	2,159	338	24	54%	28%	17%
Traumatic brain injury	26	337	25	54%	31%	15%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	1,828	343	24	46%	30%	25%
No designated supports	3,274	338	25	54%	27%	20%
Using accommodations	1,571	341	24	50%	28%	22%
No accommodations	3,531	339	25	51%	28%	21%

Table 10.A.20 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for ELA, Grade Four

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,267	437	22	59%	29%	11%
Male	3,560	437	21	59%	30%	12%
Female	1,707	435	22	61%	28%	10%
American Indian or Alaska Native	37	439	26	54%	32%	14%
Asian	389	431	22	70%	23%	7%
Native Hawaiian or Other Pacific Islander	26	440	20	58%	27%	15%
Filipino	148	433	20	71%	23%	6%
Hispanic or Latino	3,095	438	21	57%	31%	12%
Black or African American	412	436	23	60%	29%	11%
White	970	437	22	60%	27%	12%
Two or more races	190	436	24	59%	28%	13%
English only	3,023	436	22	60%	29%	12%
Initial fluent English proficient	59	430	22	73%	17%	10%
English learner	2,024	437	21	59%	30%	11%
Reclassified fluent English proficient	154	437	21	57%	32%	11%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Economically disadvantaged	3,572	439	21	55%	32%	13%
Not economically disadvantaged	1,695	432	22	68%	24%	8%
Migrant	54	450	19	37%	37%	26%
Nonmigrant	5,213	436	22	60%	29%	11%
Intellectual disability	1,802	435	19	66%	27%	7%
Hearing impairment	47	444	18	45%	34%	21%
Speech or language impairment	195	451	15	30%	44%	26%
Visual impairment	30	424	28	77%	7%	17%
Emotional disturbance	23	456	15	22%	39%	39%
Orthopedic impairment	268	426	25	72%	20%	8%
Other health impairment	280	444	21	44%	36%	20%
Specific learning disability	408	458	13	11%	47%	41%
Deaf–blindness	6	NA	NA	NA	NA	NA
Multiple disabilities	285	417	20	88%	11%	1%
Autism	1,835	435	21	63%	28%	8%
Traumatic brain injury	33	436	27	52%	27%	21%
Not classified	55	438	20	58%	35%	7%
Using designated supports	1,313	440	21	54%	31%	15%
No designated supports	3,954	435	22	61%	28%	10%
Using accommodations	1,077	437	23	58%	29%	13%
No accommodations	4,190	436	22	60%	29%	11%

Table 10.A.21 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for ELA, Grade Four

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,410	439	24	54%	29%	16%
Male	3,699	439	24	54%	30%	17%
Female	1,711	439	23	55%	29%	16%
American Indian or Alaska Native	37	449	19	30%	43%	27%
Asian	414	434	22	65%	26%	9%
Native Hawaiian or Other Pacific Islander	25	426	21	76%	24%	0%
Filipino	115	433	21	70%	20%	10%
Hispanic or Latino	3,214	440	24	52%	30%	18%
Black or African American	402	438	22	52%	35%	13%
White	1,010	438	24	55%	29%	17%
Two or more races	193	437	23	59%	28%	13%
English only	3,166	438	24	55%	29%	16%
Initial fluent English proficient	37	433	23	65%	24%	11%
English learner	1,983	440	23	52%	30%	17%
Reclassified fluent English proficient	215	440	23	52%	34%	14%
To be determined	5	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,566	441	23	49%	32%	19%
Not economically disadvantaged	1,844	434	23	64%	25%	11%
Migrant	36	453	25	39%	17%	44%
Nonmigrant	5,374	439	23	54%	30%	16%
Intellectual disability	1,831	436	21	61%	30%	9%
Hearing impairment	48	445	21	35%	46%	19%
Speech or language impairment	200	452	17	21%	51%	29%
Visual impairment	31	420	24	74%	16%	10%
Emotional disturbance	32	458	16	19%	34%	47%
Orthopedic impairment	240	427	26	70%	20%	10%
Other health impairment	309	446	24	39%	34%	27%
Specific learning disability	454	463	15	8%	32%	60%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	279	418	21	86%	13%	1%
Autism	1,958	437	22	58%	29%	13%
Traumatic brain injury	25	438	23	44%	36%	20%
Not classified	3	NA	NA	NA	NA	NA
Using designated supports	1,939	442	23	49%	31%	20%
No designated supports	3,471	437	24	57%	28%	15%
Using accommodations	1,591	440	23	53%	29%	18%
No accommodations	3,819	438	24	55%	30%	16%

Table 10.A.22 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for ELA, Grade Four

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,324	438	23	55%	27%	18%
Male	3,600	439	23	54%	27%	19%
Female	1,724	438	22	57%	26%	18%
American Indian or Alaska Native	30	448	22	37%	33%	30%
Asian	419	434	21	64%	26%	10%
Native Hawaiian or Other Pacific Islander	29	440	17	55%	34%	10%
Filipino	126	429	23	63%	29%	8%
Hispanic or Latino	3,049	439	23	53%	28%	19%
Black or African American	418	437	23	59%	25%	16%
White	1,020	439	23	55%	24%	21%
Two or more races	233	434	24	60%	21%	18%
English only	3,217	438	23	55%	26%	19%
Initial fluent English proficient	48	434	22	67%	23%	10%
English learner	1,792	438	22	55%	28%	17%
Reclassified fluent English proficient	259	440	21	51%	34%	15%
To be determined	5	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Economically disadvantaged	3,602	440	22	51%	29%	20%
Not economically disadvantaged	1,722	434	23	63%	22%	14%
Migrant	43	445	20	40%	42%	19%
Nonmigrant	5,281	438	23	55%	27%	18%
Intellectual disability	1,786	436	20	62%	26%	11%
Hearing impairment	53	446	22	30%	42%	28%
Speech or language impairment	187	453	16	22%	36%	41%
Visual impairment	22	431	29	64%	23%	14%
Emotional disturbance	29	458	19	17%	24%	59%
Orthopedic impairment	217	429	26	67%	18%	15%
Other health impairment	308	447	21	38%	31%	31%
Specific learning disability	394	461	14	8%	33%	59%
Deaf–blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	276	418	21	84%	12%	4%
Autism	2,030	436	22	59%	27%	14%
Traumatic brain injury	21	440	23	52%	33%	14%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,178	441	22	49%	29%	22%
No designated supports	3,146	436	23	59%	25%	16%
Using accommodations	1,849	439	23	54%	28%	19%
No accommodations	3,475	438	23	56%	26%	18%

Table 10.A.23 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for ELA, Grade Five

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,098	537	21	57%	35%	9%
Male	3,440	537	21	56%	35%	9%
Female	1,658	536	20	59%	34%	7%
American Indian or Alaska Native	45	545	18	36%	47%	18%
Asian	356	531	21	66%	30%	4%
Native Hawaiian or Other Pacific Islander	31	532	23	65%	29%	6%
Filipino	138	534	19	70%	28%	3%
Hispanic or Latino	2,953	538	21	55%	36%	8%
Black or African American	408	538	20	58%	32%	10%
White	1,002	537	21	56%	34%	10%
Two or more races	165	535	20	61%	31%	8%
English only	2,968	537	21	57%	34%	9%
Initial fluent English proficient	76	531	20	68%	29%	3%
English learner	1,865	538	20	56%	36%	8%
Reclassified fluent English proficient	177	537	21	56%	36%	7%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	8	NA	NA	NA	NA	NA
Economically disadvantaged	3,411	539	20	53%	37%	10%
Not economically disadvantaged	1,687	532	21	65%	29%	6%
Migrant	26	545	21	35%	54%	12%
Nonmigrant	5,072	537	21	57%	35%	9%
Intellectual disability	1,889	536	19	63%	32%	5%
Hearing impairment	50	541	18	48%	46%	6%
Speech or language impairment	178	551	12	22%	58%	20%
Visual impairment	31	525	22	74%	26%	0%
Emotional disturbance	25	553	16	20%	48%	32%
Orthopedic impairment	271	526	24	72%	20%	8%
Other health impairment	254	545	19	39%	43%	18%
Specific learning disability	371	556	12	12%	57%	32%
Deaf–blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	215	518	21	85%	14%	1%
Autism	1,734	535	20	60%	34%	6%
Traumatic brain injury	31	535	24	61%	29%	10%
Not classified	48	538	21	56%	40%	4%
Using designated supports	1,431	540	20	50%	39%	11%
No designated supports	3,667	536	21	59%	33%	8%
Using accommodations	1,183	538	21	57%	32%	10%
No accommodations	3,915	537	21	57%	35%	8%

Table 10.A.24 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for ELA, Grade Five

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,533	538	23	54%	32%	14%
Male	3,729	539	22	52%	33%	15%
Female	1,804	536	23	57%	30%	12%
American Indian or Alaska Native	33	541	25	48%	30%	21%
Asian	431	533	22	62%	29%	9%
Native Hawaiian or Other Pacific Islander	31	536	24	61%	32%	6%
Filipino	147	535	21	61%	32%	7%
Hispanic or Latino	3,257	539	22	52%	33%	15%
Black or African American	439	536	23	55%	34%	11%
White	1,009	538	23	56%	30%	15%
Two or more races	186	537	23	55%	32%	13%
English only	3,157	538	23	55%	32%	14%
Initial fluent English proficient	53	529	21	75%	21%	4%
English learner	2,040	539	22	53%	33%	14%
Reclassified fluent English proficient	277	540	22	50%	34%	16%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,690	540	22	50%	34%	16%
Not economically disadvantaged	1,843	534	23	62%	29%	9%
Migrant	50	549	21	42%	28%	30%
Nonmigrant	5,483	538	23	54%	32%	14%
Intellectual disability	1,932	536	20	61%	31%	8%
Hearing impairment	48	544	17	42%	46%	13%
Speech or language impairment	156	552	15	26%	49%	24%
Visual impairment	28	525	23	71%	21%	7%
Emotional disturbance	36	549	26	42%	22%	36%
Orthopedic impairment	261	525	26	69%	21%	9%
Other health impairment	274	545	21	34%	43%	23%
Specific learning disability	524	560	15	10%	42%	48%
Deaf–blindness	7	NA	NA	NA	NA	NA
Multiple disabilities	311	517	21	86%	12%	3%
Autism	1,916	537	22	57%	33%	11%
Traumatic brain injury	34	535	26	50%	38%	12%
Not classified	6	NA	NA	NA	NA	NA
Using designated supports	2,072	541	21	49%	35%	16%
No designated supports	3,461	536	23	57%	30%	13%
Using accommodations	1,674	539	22	54%	33%	13%
No accommodations	3,859	538	23	54%	32%	14%

Table 10.A.25 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for ELA, Grade Five

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,330	539	23	51%	30%	19%
Male	3,643	539	23	51%	30%	19%
Female	1,687	538	22	53%	30%	17%
American Indian or Alaska Native	32	549	21	31%	38%	31%
Asian	412	535	22	60%	28%	12%
Native Hawaiian or Other Pacific Islander	27	532	24	56%	37%	7%
Filipino	130	535	22	59%	32%	9%
Hispanic or Latino	3,098	540	23	49%	31%	20%
Black or African American	397	540	22	52%	31%	17%
White	1,035	538	24	53%	27%	20%
Two or more races	199	536	24	56%	28%	16%
English only	3,095	538	23	52%	29%	19%
Initial fluent English proficient	40	534	21	68%	23%	10%
English learner	1,844	539	22	51%	31%	18%
Reclassified fluent English proficient	342	543	22	41%	37%	23%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,548	541	22	47%	32%	21%
Not economically disadvantaged	1,782	535	23	59%	27%	14%
Migrant	30	547	20	37%	30%	33%
Nonmigrant	5,300	539	23	51%	30%	18%
Intellectual disability	1,893	537	21	56%	31%	13%
Hearing impairment	41	545	21	32%	49%	20%
Speech or language impairment	168	555	12	14%	50%	36%
Visual impairment	24	522	26	71%	17%	13%
Emotional disturbance	34	554	16	26%	35%	38%
Orthopedic impairment	242	525	25	71%	18%	11%
Other health impairment	273	547	22	38%	33%	30%
Specific learning disability	397	560	13	10%	35%	55%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	293	520	22	82%	15%	3%
Autism	1,944	538	22	54%	30%	16%
Traumatic brain injury	21	543	26	38%	29%	33%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,372	541	22	48%	30%	22%
No designated supports	2,958	537	23	54%	30%	16%
Using accommodations	1,950	539	22	53%	28%	19%
No accommodations	3,380	539	23	51%	31%	18%

Table 10.A.26 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for ELA, Grade Six

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,116	637	20	54%	38%	8%
Male	3,436	638	20	53%	39%	8%
Female	1,680	637	20	56%	37%	7%
American Indian or Alaska Native	38	642	19	39%	47%	13%
Asian	392	635	20	60%	34%	5%
Native Hawaiian or Other Pacific Islander	21	628	22	67%	33%	0%
Filipino	149	637	20	55%	38%	7%
Hispanic or Latino	2,952	638	20	53%	39%	8%
Black or African American	400	637	19	57%	39%	5%
White	1,031	637	21	54%	37%	9%
Two or more races	133	635	21	62%	34%	5%
English only	2,982	637	20	55%	37%	8%
Initial fluent English proficient	83	634	22	63%	30%	7%
English learner	1,779	637	20	54%	39%	7%
Reclassified fluent English proficient	262	641	18	48%	43%	10%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	8	NA	NA	NA	NA	NA
Economically disadvantaged	3,413	639	19	50%	41%	9%
Not economically disadvantaged	1,703	633	21	62%	32%	6%
Migrant	36	650	14	33%	44%	22%
Nonmigrant	5,080	637	20	54%	38%	8%
Intellectual disability	1,960	637	18	58%	37%	5%
Hearing impairment	57	641	17	40%	58%	2%
Speech or language impairment	139	651	9	14%	68%	17%
Visual impairment	34	618	24	74%	21%	6%
Emotional disturbance	32	650	16	16%	59%	25%
Orthopedic impairment	258	625	23	73%	22%	5%
Other health impairment	261	645	17	37%	51%	12%
Specific learning disability	342	655	10	11%	61%	28%
Deaf–blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	256	619	22	84%	13%	3%
Autism	1,700	636	20	59%	35%	6%
Traumatic brain injury	22	645	20	36%	41%	23%
Not classified	50	637	19	52%	48%	0%
Using designated supports	1,306	640	20	50%	39%	11%
No designated supports	3,810	637	20	56%	38%	7%
Using accommodations	1,048	638	21	54%	36%	10%
No accommodations	4,068	637	20	55%	38%	7%

Table 10.A.27 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for ELA, Grade Six

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,336	638	20	54%	37%	9%
Male	3,618	638	20	54%	38%	9%
Female	1,718	638	20	55%	37%	8%
American Indian or Alaska Native	29	645	20	31%	55%	14%
Asian	387	633	20	65%	32%	4%
Native Hawaiian or Other Pacific Islander	26	635	22	50%	46%	4%
Filipino	145	635	18	68%	30%	3%
Hispanic or Latino	3,096	638	20	53%	39%	9%
Black or African American	457	639	18	55%	36%	8%
White	1,015	639	20	53%	36%	11%
Two or more races	181	637	20	58%	33%	9%
English only	3,054	638	20	54%	37%	9%
Initial fluent English proficient	80	633	19	73%	24%	4%
English learner	1,915	638	19	54%	38%	8%
Reclassified fluent English proficient	283	640	19	51%	41%	8%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Economically disadvantaged	3,441	640	19	50%	40%	10%
Not economically disadvantaged	1,895	634	20	62%	32%	6%
Migrant	34	642	20	41%	47%	12%
Nonmigrant	5,302	638	20	54%	37%	9%
Intellectual disability	2,030	637	18	60%	35%	5%
Hearing impairment	52	638	16	60%	40%	0%
Speech or language impairment	136	651	10	20%	61%	19%
Visual impairment	20	629	22	75%	20%	5%
Emotional disturbance	41	649	16	27%	46%	27%
Orthopedic impairment	264	627	23	69%	27%	4%
Other health impairment	274	647	17	29%	55%	15%
Specific learning disability	440	656	9	8%	60%	32%
Deaf–blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	258	620	22	81%	17%	2%
Autism	1,794	637	19	59%	35%	6%
Traumatic brain injury	23	628	24	61%	30%	9%
Not classified	3	NA	NA	NA	NA	NA
Using designated supports	1,985	641	19	48%	41%	11%
No designated supports	3,351	637	20	58%	35%	7%
Using accommodations	1,564	638	20	53%	37%	9%
No accommodations	3,772	638	20	55%	37%	8%

Table 10.A.28 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for ELA, Grade Six

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,386	639	20	54%	35%	11%
Male	3,606	640	20	52%	36%	12%
Female	1,780	637	21	59%	31%	10%
American Indian or Alaska Native	29	639	23	52%	24%	24%
Asian	415	635	20	65%	29%	6%
Native Hawaiian or Other Pacific Islander	25	634	24	64%	20%	16%
Filipino	139	636	19	69%	23%	8%
Hispanic or Latino	3,188	639	20	52%	37%	11%
Black or African American	433	639	20	56%	35%	10%
White	970	639	21	53%	33%	14%
Two or more races	187	636	21	59%	33%	9%
English only	3,071	639	20	53%	35%	12%
Initial fluent English proficient	57	634	20	65%	32%	4%
English learner	1,801	638	20	56%	33%	10%
Reclassified fluent English proficient	450	639	19	51%	41%	9%
To be determined	3	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,643	640	20	51%	37%	12%
Not economically disadvantaged	1,743	636	21	61%	30%	9%
Migrant	33	646	18	45%	39%	15%
Nonmigrant	5,353	639	20	54%	35%	11%
Intellectual disability	1,997	638	18	59%	34%	7%
Hearing impairment	63	643	15	49%	41%	10%
Speech or language impairment	118	652	11	23%	53%	24%
Visual impairment	23	629	20	78%	17%	4%
Emotional disturbance	34	653	16	26%	32%	41%
Orthopedic impairment	243	627	24	71%	19%	9%
Other health impairment	263	646	20	36%	42%	22%
Specific learning disability	384	656	11	14%	49%	38%
Deaf–blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	320	619	21	86%	12%	3%
Autism	1,901	639	19	55%	36%	9%
Traumatic brain injury	35	635	25	54%	34%	11%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,262	641	19	51%	36%	13%
No designated supports	3,124	637	21	57%	34%	10%
Using accommodations	1,851	639	19	55%	34%	10%
No accommodations	3,535	639	20	54%	35%	11%

Table 10.A.29 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for ELA, Grade Seven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,123	736	21	57%	35%	8%
Male	3,401	736	21	57%	34%	9%
Female	1,722	735	22	57%	36%	7%
American Indian or Alaska Native	32	743	24	41%	41%	19%
Asian	400	733	21	64%	30%	6%
Native Hawaiian or Other Pacific Islander	25	734	23	52%	40%	8%
Filipino	178	734	20	61%	36%	3%
Hispanic or Latino	2,794	736	21	56%	36%	8%
Black or African American	429	734	22	59%	34%	7%
White	1,101	737	22	56%	34%	10%
Two or more races	164	736	23	53%	35%	12%
English only	3,018	736	22	57%	35%	9%
Initial fluent English proficient	73	729	22	71%	26%	3%
English learner	1,701	735	21	57%	36%	7%
Reclassified fluent English proficient	323	739	21	52%	36%	12%
To be determined	3	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,342	738	21	53%	37%	10%
Not economically disadvantaged	1,781	732	22	63%	31%	6%
Migrant	34	747	15	29%	56%	15%
Nonmigrant	5,089	736	21	57%	35%	8%
Intellectual disability	2,008	736	20	58%	36%	6%
Hearing impairment	38	739	19	47%	50%	3%
Speech or language impairment	122	750	11	25%	61%	13%
Visual impairment	45	722	24	76%	20%	4%
Emotional disturbance	32	750	21	25%	53%	22%
Orthopedic impairment	255	721	24	75%	20%	5%
Other health impairment	233	743	20	36%	49%	14%
Specific learning disability	318	753	13	20%	55%	25%
Deaf–blindness	6	NA	NA	NA	NA	NA
Multiple disabilities	301	720	23	80%	17%	3%
Autism	1,709	735	21	60%	32%	8%
Traumatic brain injury	24	739	25	46%	38%	17%
Not classified	32	728	24	69%	22%	9%
Using designated supports	1,327	739	21	52%	38%	10%
No designated supports	3,796	735	22	58%	34%	8%
Using accommodations	1,035	736	21	56%	35%	9%
No accommodations	4,088	736	21	57%	35%	8%

Table 10.A.30 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for ELA, Grade Seven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,288	736	22	59%	28%	13%
Male	3,557	737	22	58%	29%	13%
Female	1,731	736	22	61%	26%	13%
American Indian or Alaska Native	32	743	23	47%	31%	22%
Asian	425	733	21	68%	24%	8%
Native Hawaiian or Other Pacific Islander	18	726	25	78%	11%	11%
Filipino	151	737	23	57%	30%	13%
Hispanic or Latino	3,029	737	22	57%	29%	13%
Black or African American	414	736	22	60%	28%	12%
White	1,070	737	23	58%	27%	15%
Two or more races	149	734	22	64%	24%	12%
English only	3,043	737	22	58%	28%	14%
Initial fluent English proficient	83	732	23	64%	27%	10%
English learner	1,808	736	22	60%	28%	12%
Reclassified fluent English proficient	347	739	21	59%	27%	15%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Economically disadvantaged	3,416	738	22	55%	31%	14%
Not economically disadvantaged	1,872	734	23	65%	24%	11%
Migrant	30	747	14	33%	53%	13%
Nonmigrant	5,258	736	22	59%	28%	13%
Intellectual disability	2,103	736	20	61%	29%	10%
Hearing impairment	51	739	16	57%	37%	6%
Speech or language impairment	111	750	16	32%	39%	29%
Visual impairment	29	721	26	79%	7%	14%
Emotional disturbance	25	749	13	32%	52%	16%
Orthopedic impairment	241	726	25	72%	20%	8%
Other health impairment	278	745	21	42%	34%	24%
Specific learning disability	385	756	16	20%	39%	41%
Deaf–blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	269	717	21	86%	12%	2%
Autism	1,764	735	21	63%	27%	11%
Traumatic brain injury	20	740	19	50%	40%	10%
Not classified	9	NA	NA	NA	NA	NA
Using designated supports	1,799	740	22	52%	31%	17%
No designated supports	3,489	735	22	62%	27%	11%
Using accommodations	1,468	737	22	59%	29%	12%
No accommodations	3,820	736	22	59%	28%	13%

Table 10.A.31 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for ELA, Grade Seven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,383	738	23	55%	27%	18%
Male	3,630	739	23	55%	26%	19%
Female	1,753	738	23	55%	29%	16%
American Indian or Alaska Native	33	747	22	30%	36%	33%
Asian	402	733	22	67%	24%	9%
Native Hawaiian or Other Pacific Islander	29	744	23	38%	38%	24%
Filipino	152	737	22	61%	24%	16%
Hispanic or Latino	3,097	738	23	55%	27%	17%
Black or African American	464	739	23	55%	25%	20%
White	994	741	23	51%	27%	22%
Two or more races	212	739	23	53%	28%	19%
English only	3,104	739	23	54%	27%	19%
Initial fluent English proficient	83	729	22	76%	18%	6%
English learner	1,721	737	22	58%	27%	15%
Reclassified fluent English proficient	467	741	22	50%	28%	21%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,591	740	22	53%	28%	20%
Not economically disadvantaged	1,792	735	23	60%	25%	15%
Migrant	36	742	24	42%	33%	25%
Nonmigrant	5,347	738	23	55%	27%	18%
Intellectual disability	2,090	736	21	62%	25%	13%
Hearing impairment	47	744	17	43%	45%	13%
Speech or language impairment	109	752	17	29%	39%	31%
Visual impairment	18	727	22	61%	33%	6%
Emotional disturbance	48	754	18	29%	27%	44%
Orthopedic impairment	235	727	25	69%	19%	11%
Other health impairment	300	750	21	29%	37%	34%
Specific learning disability	422	757	16	16%	35%	49%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	266	720	23	81%	14%	5%
Autism	1,821	737	22	58%	27%	15%
Traumatic brain injury	27	732	23	63%	30%	7%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,364	740	22	52%	28%	19%
No designated supports	3,019	737	23	58%	26%	17%
Using accommodations	1,913	738	22	57%	26%	17%
No accommodations	3,470	739	23	54%	27%	18%

Table 10.A.32 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for ELA, Grade Eight

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,755	838	21	47%	44%	9%
Male	3,157	838	21	48%	44%	9%
Female	1,598	838	21	46%	44%	9%
American Indian or Alaska Native	43	845	22	28%	47%	26%
Asian	372	835	21	56%	40%	4%
Native Hawaiian or Other Pacific Islander	21	830	22	67%	33%	0%
Filipino	149	834	22	56%	38%	6%
Hispanic or Latino	2,580	839	21	46%	46%	9%
Black or African American	416	839	21	47%	44%	9%
White	1,060	839	22	46%	43%	11%
Two or more races	114	838	22	51%	38%	11%
English only	2,774	838	21	47%	44%	9%
Initial fluent English proficient	87	836	21	45%	53%	2%
English learner	1,564	838	21	47%	44%	9%
Reclassified fluent English proficient	325	840	19	48%	43%	8%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Economically disadvantaged	3,118	840	20	44%	46%	10%
Not economically disadvantaged	1,637	835	22	53%	40%	7%
Migrant	20	848	7	30%	70%	0%
Nonmigrant	4,735	838	21	47%	44%	9%
Intellectual disability	1,992	839	19	46%	46%	8%
Hearing impairment	53	841	18	42%	51%	8%
Speech or language impairment	73	850	16	29%	55%	16%
Visual impairment	38	821	24	74%	24%	3%
Emotional disturbance	29	849	17	28%	45%	28%
Orthopedic impairment	283	828	26	63%	28%	9%
Other health impairment	210	846	19	32%	48%	20%
Specific learning disability	262	854	11	11%	59%	30%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	232	822	23	74%	23%	3%
Autism	1,516	837	20	50%	43%	6%
Traumatic brain injury	25	843	18	36%	60%	4%
Not classified	42	831	22	62%	38%	0%
Using designated supports	1,190	841	20	40%	48%	12%
No designated supports	3,565	837	21	49%	42%	8%
Using accommodations	954	839	21	43%	47%	10%
No accommodations	3,801	838	21	48%	43%	9%

Table 10.A.33 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for ELA, Grade Eight

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,247	840	21	38%	50%	11%
Male	3,494	840	21	38%	50%	12%
Female	1,753	839	22	40%	50%	10%
American Indian or Alaska Native	39	847	17	21%	64%	15%
Asian	410	836	23	44%	48%	8%
Native Hawaiian or Other Pacific Islander	21	843	20	38%	52%	10%
Filipino	179	838	21	41%	50%	9%
Hispanic or Latino	2,849	840	21	37%	52%	11%
Black or African American	456	839	22	40%	49%	11%
White	1,114	840	22	41%	46%	13%
Two or more races	179	841	21	35%	52%	13%
English only	3,083	840	22	39%	49%	12%
Initial fluent English proficient	83	834	21	55%	40%	5%
English learner	1,690	840	21	37%	53%	10%
Reclassified fluent English proficient	384	841	21	35%	53%	12%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,301	842	20	34%	53%	12%
Not economically disadvantaged	1,946	836	23	46%	45%	9%
Migrant	34	849	16	24%	59%	18%
Nonmigrant	5,213	840	21	39%	50%	11%
Intellectual disability	2,075	840	20	38%	54%	8%
Hearing impairment	50	846	14	30%	58%	12%
Speech or language impairment	95	853	11	18%	57%	25%
Visual impairment	38	828	26	55%	34%	11%
Emotional disturbance	33	850	19	18%	55%	27%
Orthopedic impairment	237	826	24	65%	29%	5%
Other health impairment	240	845	19	28%	53%	19%
Specific learning disability	358	856	11	8%	60%	32%
Deaf–blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	316	821	24	69%	27%	3%
Autism	1,775	840	21	39%	51%	10%
Traumatic brain injury	24	844	22	29%	50%	21%
Not classified	1	NA	NA	NA	NA	NA
Using designated supports	1,814	843	21	32%	54%	14%
No designated supports	3,433	838	22	42%	49%	10%
Using accommodations	1,490	841	21	35%	53%	12%
No accommodations	3,757	839	22	40%	49%	11%

Table 10.A.34 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for ELA, Grade Eight

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,238	840	21	48%	39%	13%
Male	3,531	840	21	48%	38%	14%
Female	1,707	839	21	49%	40%	11%
American Indian or Alaska Native	31	843	24	35%	39%	26%
Asian	437	837	20	57%	36%	7%
Native Hawaiian or Other Pacific Islander	24	835	22	54%	42%	4%
Filipino	164	839	21	52%	38%	10%
Hispanic or Latino	2,968	840	21	47%	40%	13%
Black or African American	429	841	20	46%	41%	13%
White	1,028	840	22	48%	36%	16%
Two or more races	157	843	19	45%	44%	11%
English only	2,978	840	21	48%	38%	14%
Initial fluent English proficient	93	833	22	61%	34%	4%
English learner	1,644	839	21	49%	40%	11%
Reclassified fluent English proficient	516	843	19	41%	44%	15%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,421	841	20	45%	41%	13%
Not economically disadvantaged	1,817	837	22	54%	34%	12%
Migrant	34	847	17	29%	50%	21%
Nonmigrant	5,204	840	21	48%	39%	13%
Intellectual disability	2,075	840	19	50%	41%	9%
Hearing impairment	51	841	18	51%	45%	4%
Speech or language impairment	104	854	14	19%	44%	37%
Visual impairment	31	826	24	65%	32%	3%
Emotional disturbance	35	854	13	20%	46%	34%
Orthopedic impairment	213	829	25	62%	31%	7%
Other health impairment	279	848	18	30%	45%	25%
Specific learning disability	343	857	11	10%	49%	41%
Deaf–blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	280	820	23	79%	19%	3%
Autism	1,801	839	20	52%	37%	11%
Traumatic brain injury	23	846	23	26%	52%	22%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,166	842	20	43%	41%	16%
No designated supports	3,072	838	21	52%	38%	11%
Using accommodations	1,754	841	20	48%	39%	13%
No accommodations	3,484	840	21	48%	39%	13%

Table 10.A.35 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for ELA, Grade Eleven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,273	940	20	43%	49%	8%
Male	2,799	941	19	41%	50%	9%
Female	1,474	939	20	45%	49%	6%
American Indian or Alaska Native	30	946	16	27%	57%	17%
Asian	332	936	20	49%	46%	4%
Native Hawaiian or Other Pacific Islander	19	941	21	42%	47%	11%
Filipino	139	937	20	53%	42%	4%
Hispanic or Latino	2,259	940	20	43%	50%	7%
Black or African American	404	942	19	38%	53%	9%
White	984	941	19	42%	48%	10%
Two or more races	106	941	20	40%	46%	14%
English only	2,601	941	19	41%	50%	9%
Initial fluent English proficient	70	936	24	49%	39%	13%
English learner	1,281	938	19	46%	49%	5%
Reclassified fluent English proficient	316	942	19	40%	50%	11%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	2,750	941	19	41%	52%	8%
Not economically disadvantaged	1,523	938	20	47%	46%	8%
Migrant	17	938	19	35%	65%	0%
Nonmigrant	4,256	940	20	43%	49%	8%
Intellectual disability	1,923	940	18	44%	51%	4%
Hearing impairment	48	939	18	46%	48%	6%
Speech or language impairment	48	952	10	13%	73%	15%
Visual impairment	30	935	23	57%	33%	10%
Emotional disturbance	48	952	13	23%	52%	25%
Orthopedic impairment	266	931	24	56%	38%	6%
Other health impairment	150	947	16	26%	59%	15%
Specific learning disability	295	953	11	13%	62%	25%
Deaf–blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	219	925	24	66%	29%	5%
Autism	1,186	940	19	43%	48%	8%
Traumatic brain injury	29	941	22	38%	52%	10%
Not classified	28	917	22	79%	21%	0%
Using designated supports	810	940	19	42%	51%	7%
No designated supports	3,463	940	20	43%	49%	8%
Using accommodations	634	938	20	46%	48%	6%
No accommodations	3,639	940	19	42%	50%	8%

Table 10.A.36 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for ELA, Grade Eleven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,505	941	22	43%	39%	18%
Male	2,879	942	21	42%	38%	19%
Female	1,626	940	22	44%	40%	16%
American Indian or Alaska Native	39	939	21	46%	44%	10%
Asian	338	936	22	53%	37%	10%
Native Hawaiian or Other Pacific Islander	31	941	20	42%	35%	23%
Filipino	148	939	22	43%	45%	11%
Hispanic or Latino	2,423	942	21	42%	40%	18%
Black or African American	402	941	21	45%	38%	17%
White	1,003	943	22	41%	36%	24%
Two or more races	121	938	23	49%	34%	17%
English only	2,646	941	22	43%	37%	20%
Initial fluent English proficient	83	930	24	61%	28%	11%
English learner	1,350	940	21	43%	42%	15%
Reclassified fluent English proficient	421	945	19	36%	42%	22%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	2,859	943	21	41%	40%	19%
Not economically disadvantaged	1,646	939	23	47%	36%	17%
Migrant	19	948	14	26%	58%	16%
Nonmigrant	4,486	941	22	43%	39%	18%
Intellectual disability	1,939	941	20	45%	41%	14%
Hearing impairment	64	943	20	30%	55%	16%
Speech or language impairment	43	956	11	9%	42%	49%
Visual impairment	39	929	27	59%	26%	15%
Emotional disturbance	30	957	13	13%	30%	57%
Orthopedic impairment	293	930	26	62%	23%	15%
Other health impairment	203	952	19	19%	43%	37%
Specific learning disability	302	958	13	10%	38%	52%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	229	924	24	68%	27%	5%
Autism	1,328	941	21	45%	40%	15%
Traumatic brain injury	30	947	22	30%	37%	33%
Not classified	5	NA	NA	NA	NA	NA
Using designated supports	934	943	21	40%	39%	21%
No designated supports	3,571	941	22	44%	39%	18%
Using accommodations	790	941	21	46%	39%	16%
No accommodations	3,715	941	22	42%	39%	19%

Table 10.A.37 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for ELA, Grade Eleven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,457	943	22	44%	35%	21%
Male	2,924	943	22	44%	34%	22%
Female	1,533	942	21	44%	37%	19%
American Indian or Alaska Native	35	952	21	23%	46%	31%
Asian	351	939	22	54%	28%	17%
Native Hawaiian or Other Pacific Islander	18	933	23	56%	39%	6%
Filipino	128	942	21	44%	41%	15%
Hispanic or Latino	2,432	943	22	43%	35%	22%
Black or African American	420	942	22	44%	36%	20%
White	934	944	23	42%	35%	23%
Two or more races	139	943	23	42%	37%	21%
English only	2,619	943	22	44%	34%	22%
Initial fluent English proficient	71	944	23	38%	39%	23%
English learner	1,237	942	22	45%	37%	19%
Reclassified fluent English proficient	519	945	21	43%	34%	24%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	10	NA	NA	NA	NA	NA
Economically disadvantaged	2,863	944	21	41%	36%	23%
Not economically disadvantaged	1,594	940	23	49%	33%	18%
Migrant	17	946	20	41%	35%	24%
Nonmigrant	4,440	943	22	44%	35%	21%
Intellectual disability	1,892	943	20	44%	39%	17%
Hearing impairment	50	945	21	38%	32%	30%
Speech or language impairment	47	958	11	11%	45%	45%
Visual impairment	30	931	27	63%	23%	13%
Emotional disturbance	39	956	24	23%	18%	59%
Orthopedic impairment	231	932	27	58%	24%	18%
Other health impairment	192	953	20	25%	34%	41%
Specific learning disability	276	961	13	8%	37%	55%
Deaf–blindness	2	NA	NA	NA	NA	NA
Multiple disabilities	227	923	24	76%	16%	7%
Autism	1,434	942	21	46%	35%	18%
Traumatic brain injury	37	930	26	65%	24%	11%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	1,176	944	22	41%	35%	24%
No designated supports	3,281	942	22	45%	35%	20%
Using accommodations	837	943	22	45%	35%	21%
No accommodations	3,620	943	22	44%	35%	21%

Table 10.A.38 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for Mathematics, Grade Three

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,978	331	21	72%	23%	5%
Male	3,397	332	21	70%	24%	6%
Female	1,581	330	20	77%	21%	3%
American Indian or Alaska Native	34	333	18	71%	26%	3%
Asian	415	330	22	73%	20%	7%
Native Hawaiian or Other Pacific Islander	17	327	20	76%	24%	0%
Filipino	117	328	22	75%	23%	2%
Hispanic or Latino	2,877	332	21	72%	24%	5%
Black or African American	360	330	20	75%	21%	4%
White	974	331	21	73%	23%	4%
Two or more races	184	333	19	71%	25%	4%
English only	2,956	331	21	73%	22%	4%
Initial fluent English proficient	34	329	21	71%	29%	0%
English learner	1,873	332	20	71%	24%	5%
Reclassified fluent English proficient	105	332	20	68%	24%	9%
To be determined	6	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,328	333	20	70%	25%	5%
Not economically disadvantaged	1,650	328	21	78%	19%	3%
Migrant	27	344	19	48%	41%	11%
Nonmigrant	4,951	331	21	72%	23%	5%
Intellectual disability	1,615	329	19	82%	16%	2%
Hearing impairment	51	339	20	65%	18%	18%
Speech or language impairment	228	342	15	52%	42%	6%
Visual impairment	30	313	19	93%	7%	0%
Emotional disturbance	20	349	10	25%	70%	5%
Orthopedic impairment	239	321	21	87%	10%	3%
Other health impairment	282	334	20	69%	27%	4%
Specific learning disability	309	350	14	29%	53%	18%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	265	314	18	93%	6%	1%
Autism	1,867	332	21	69%	25%	6%
Traumatic brain injury	17	337	18	65%	35%	0%
Not classified	55	327	19	78%	22%	0%
Using designated supports	1,315	335	21	66%	27%	7%
No designated supports	3,663	330	21	75%	22%	4%
Using accommodations	759	332	22	71%	23%	6%
No accommodations	4,219	331	20	72%	23%	4%

Table 10.A.39 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for Mathematics, Grade Three

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,989	333	21	67%	28%	6%
Male	3,392	333	21	66%	28%	6%
Female	1,597	332	21	68%	27%	5%
American Indian or Alaska Native	26	339	18	54%	46%	0%
Asian	391	329	21	79%	16%	5%
Native Hawaiian or Other Pacific Islander	24	333	21	71%	25%	4%
Filipino	119	328	22	70%	29%	2%
Hispanic or Latino	2,891	334	21	64%	30%	6%
Black or African American	360	333	21	67%	28%	5%
White	956	332	21	68%	26%	6%
Two or more races	222	331	22	71%	21%	8%
English only	3,000	333	21	67%	28%	6%
Initial fluent English proficient	47	329	20	77%	21%	2%
English learner	1,794	333	21	66%	28%	6%
Reclassified fluent English proficient	138	332	19	70%	25%	4%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,263	335	20	64%	30%	6%
Not economically disadvantaged	1,726	329	22	72%	23%	5%
Migrant	45	343	18	42%	44%	13%
Nonmigrant	4,944	333	21	67%	27%	6%
Intellectual disability	1,641	330	20	74%	23%	3%
Hearing impairment	44	342	18	50%	36%	14%
Speech or language impairment	219	344	16	46%	41%	13%
Visual impairment	21	322	24	76%	14%	10%
Emotional disturbance	29	343	20	41%	48%	10%
Orthopedic impairment	224	324	23	76%	18%	6%
Other health impairment	282	340	19	55%	37%	9%
Specific learning disability	358	351	12	28%	54%	18%
Deaf–blindness	2	NA	NA	NA	NA	NA
Multiple disabilities	249	316	20	86%	13%	1%
Autism	1,900	332	21	69%	26%	5%
Traumatic brain injury	18	331	21	56%	39%	6%
Not classified	2	NA	NA	NA	NA	NA
Using designated supports	1,612	335	21	62%	31%	7%
No designated supports	3,377	332	21	69%	26%	5%
Using accommodations	1,047	332	22	67%	26%	7%
No accommodations	3,942	333	21	66%	28%	6%

Table 10.A.40 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for Mathematics, Grade Three

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,101	335	21	62%	30%	8%
Male	3,536	335	22	62%	30%	9%
Female	1,565	334	21	64%	29%	6%
American Indian or Alaska Native	34	334	22	47%	50%	3%
Asian	401	333	22	67%	24%	9%
Native Hawaiian or Other Pacific Islander	23	330	22	61%	35%	4%
Filipino	130	333	21	65%	28%	7%
Hispanic or Latino	2,911	335	21	62%	30%	7%
Black or African American	391	335	22	59%	31%	10%
White	959	335	23	61%	29%	10%
Two or more races	252	334	21	63%	30%	6%
English only	3,116	334	22	62%	30%	8%
Initial fluent English proficient	35	329	24	69%	26%	6%
English learner	1,770	335	21	62%	31%	8%
Reclassified fluent English proficient	169	333	22	68%	25%	7%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	7	NA	NA	NA	NA	NA
Economically disadvantaged	3,434	336	21	60%	32%	8%
Not economically disadvantaged	1,667	332	22	68%	25%	8%
Migrant	22	333	19	73%	27%	0%
Nonmigrant	5,079	335	22	62%	30%	8%
Intellectual disability	1,599	333	20	67%	29%	4%
Hearing impairment	48	337	21	46%	50%	4%
Speech or language impairment	206	346	15	40%	44%	16%
Visual impairment	17	333	33	59%	18%	24%
Emotional disturbance	23	354	18	17%	52%	30%
Orthopedic impairment	174	321	23	82%	15%	3%
Other health impairment	307	341	19	52%	35%	13%
Specific learning disability	292	354	14	24%	47%	29%
Deaf–blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	258	316	19	88%	11%	0%
Autism	2,148	334	21	63%	29%	8%
Traumatic brain injury	26	328	22	77%	19%	4%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	1,823	337	20	58%	33%	9%
No designated supports	3,278	333	22	65%	28%	7%
Using accommodations	1,050	332	22	66%	28%	6%
No accommodations	4,051	335	21	61%	30%	8%

Table 10.A.41 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for Mathematics, Grade Four

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,283	432	20	70%	26%	4%
Male	3,569	433	20	68%	27%	5%
Female	1,714	430	20	74%	23%	4%
American Indian or Alaska Native	38	432	23	68%	21%	11%
Asian	390	428	21	76%	22%	3%
Native Hawaiian or Other Pacific Islander	26	438	17	62%	31%	8%
Filipino	148	430	19	74%	23%	3%
Hispanic or Latino	3,103	433	20	68%	28%	4%
Black or African American	415	430	21	73%	22%	5%
White	972	432	20	71%	24%	5%
Two or more races	191	432	22	71%	23%	6%
English only	3,026	432	20	71%	25%	4%
Initial fluent English proficient	59	426	20	76%	24%	0%
English learner	2,034	433	20	69%	27%	4%
Reclassified fluent English proficient	154	434	20	62%	31%	6%
To be determined	6	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,588	434	19	68%	28%	5%
Not economically disadvantaged	1,695	428	21	75%	22%	3%
Migrant	55	443	19	53%	35%	13%
Nonmigrant	5,228	432	20	70%	26%	4%
Intellectual disability	1,808	431	18	76%	22%	2%
Hearing impairment	47	442	17	47%	43%	11%
Speech or language impairment	194	444	15	48%	42%	10%
Visual impairment	30	423	27	70%	20%	10%
Emotional disturbance	24	446	18	46%	38%	17%
Orthopedic impairment	270	420	22	81%	16%	2%
Other health impairment	280	438	19	59%	35%	7%
Specific learning disability	408	449	13	34%	50%	16%
Deaf–blindness	6	NA	NA	NA	NA	NA
Multiple disabilities	288	415	19	92%	7%	1%
Autism	1,840	432	20	71%	25%	4%
Traumatic brain injury	33	429	25	73%	24%	3%
Not classified	55	432	18	73%	27%	0%
Using designated supports	1,307	435	20	66%	28%	6%
No designated supports	3,976	431	20	71%	25%	4%
Using accommodations	747	431	22	72%	22%	6%
No accommodations	4,536	432	20	70%	27%	4%

Table 10.A.42 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for Mathematics, Grade Four

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,396	433	21	68%	25%	7%
Male	3,685	433	21	67%	25%	7%
Female	1,711	433	21	69%	25%	6%
American Indian or Alaska Native	37	443	16	57%	30%	14%
Asian	413	430	22	73%	19%	7%
Native Hawaiian or Other Pacific Islander	25	424	22	72%	28%	0%
Filipino	117	428	21	74%	23%	3%
Hispanic or Latino	3,202	434	21	67%	26%	7%
Black or African American	401	433	21	70%	24%	6%
White	1,006	433	21	68%	25%	7%
Two or more races	195	432	22	70%	24%	6%
English only	3,153	432	22	69%	24%	7%
Initial fluent English proficient	37	425	21	89%	5%	5%
English learner	1,980	435	21	65%	27%	7%
Reclassified fluent English proficient	214	436	21	67%	24%	9%
To be determined	6	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,562	435	21	64%	28%	8%
Not economically disadvantaged	1,834	429	21	76%	20%	5%
Migrant	36	447	24	53%	22%	25%
Nonmigrant	5,360	433	21	68%	25%	7%
Intellectual disability	1,825	431	19	75%	22%	3%
Hearing impairment	48	439	18	54%	38%	8%
Speech or language impairment	201	443	17	54%	35%	11%
Visual impairment	31	418	22	87%	13%	0%
Emotional disturbance	32	445	13	47%	41%	13%
Orthopedic impairment	238	423	23	80%	16%	5%
Other health impairment	311	440	20	57%	32%	12%
Specific learning disability	451	452	14	26%	48%	26%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	278	416	19	91%	8%	1%
Autism	1,954	432	21	70%	24%	6%
Traumatic brain injury	24	437	18	58%	38%	4%
Not classified	3	NA	NA	NA	NA	NA
Using designated supports	1,932	436	21	63%	27%	10%
No designated supports	3,464	432	21	70%	24%	5%
Using accommodations	1,191	435	22	66%	25%	9%
No accommodations	4,205	433	21	68%	25%	6%

Table 10.A.43 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for Mathematics, Grade Four

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,309	434	21	65%	26%	8%
Male	3,587	434	21	65%	26%	9%
Female	1,722	433	20	67%	27%	6%
American Indian or Alaska Native	30	442	22	47%	30%	23%
Asian	417	431	21	71%	23%	6%
Native Hawaiian or Other Pacific Islander	29	432	20	66%	28%	7%
Filipino	125	428	21	74%	18%	8%
Hispanic or Latino	3,044	434	20	65%	27%	8%
Black or African American	417	433	20	69%	23%	8%
White	1,014	435	21	63%	29%	9%
Two or more races	233	431	22	67%	23%	10%
English only	3,201	434	20	65%	27%	8%
Initial fluent English proficient	47	433	19	77%	15%	9%
English learner	1,796	433	21	65%	26%	9%
Reclassified fluent English proficient	257	435	20	65%	28%	7%
To be determined	5	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Economically disadvantaged	3,595	435	20	63%	28%	9%
Not economically disadvantaged	1,714	431	21	70%	23%	7%
Migrant	43	443	20	42%	47%	12%
Nonmigrant	5,266	434	21	66%	26%	8%
Intellectual disability	1,784	432	19	72%	23%	5%
Hearing impairment	53	442	17	55%	30%	15%
Speech or language impairment	187	447	14	34%	49%	17%
Visual impairment	22	424	22	77%	18%	5%
Emotional disturbance	29	448	17	31%	48%	21%
Orthopedic impairment	216	425	23	72%	22%	6%
Other health impairment	309	439	19	59%	28%	13%
Specific learning disability	393	451	14	25%	47%	28%
Deaf–blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	277	417	20	87%	12%	1%
Autism	2,017	433	21	68%	25%	7%
Traumatic brain injury	21	434	18	67%	33%	0%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,170	437	20	59%	30%	11%
No designated supports	3,139	432	21	69%	24%	6%
Using accommodations	1,696	435	21	62%	28%	10%
No accommodations	3,613	433	21	67%	25%	8%

Table 10.A.44 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for Mathematics, Grade Five

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,098	532	20	70%	25%	5%
Male	3,437	533	21	70%	25%	5%
Female	1,661	531	19	72%	25%	3%
American Indian or Alaska Native	44	539	19	57%	30%	14%
Asian	361	528	21	78%	17%	5%
Native Hawaiian or Other Pacific Islander	30	527	21	77%	20%	3%
Filipino	139	530	20	75%	24%	1%
Hispanic or Latino	2,948	533	20	70%	26%	4%
Black or African American	405	533	19	71%	25%	4%
White	1,006	532	21	70%	24%	5%
Two or more races	165	532	21	70%	24%	6%
English only	2,967	532	20	71%	24%	5%
Initial fluent English proficient	76	523	20	83%	14%	3%
English learner	1,865	533	20	69%	27%	4%
Reclassified fluent English proficient	177	533	21	71%	23%	6%
To be determined	5	NA	NA	NA	NA	NA
English proficiency unknown	8	NA	NA	NA	NA	NA
Economically disadvantaged	3,405	534	19	67%	28%	5%
Not economically disadvantaged	1,693	528	21	77%	20%	4%
Migrant	26	542	24	50%	35%	15%
Nonmigrant	5,072	532	20	71%	25%	5%
Intellectual disability	1,892	531	18	75%	23%	2%
Hearing impairment	49	536	21	63%	27%	10%
Speech or language impairment	178	544	12	46%	46%	8%
Visual impairment	31	522	22	77%	19%	3%
Emotional disturbance	26	551	21	38%	31%	31%
Orthopedic impairment	272	521	22	82%	14%	4%
Other health impairment	256	539	18	60%	32%	8%
Specific learning disability	370	548	13	35%	51%	14%
Deaf–blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	219	515	20	90%	9%	1%
Autism	1,727	531	21	73%	22%	5%
Traumatic brain injury	31	529	23	77%	16%	6%
Not classified	46	533	18	72%	26%	2%
Using designated supports	1,430	536	19	65%	29%	6%
No designated supports	3,668	531	20	73%	23%	4%
Using accommodations	806	531	21	73%	22%	5%
No accommodations	4,292	532	20	70%	26%	4%

Table 10.A.45 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for Mathematics, Grade Five

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,543	533	21	64%	30%	6%
Male	3,739	534	21	62%	31%	7%
Female	1,804	531	21	68%	28%	4%
American Indian or Alaska Native	33	537	19	52%	42%	6%
Asian	435	530	21	69%	27%	4%
Native Hawaiian or Other Pacific Islander	31	530	21	68%	32%	0%
Filipino	149	533	21	68%	26%	5%
Hispanic or Latino	3,263	534	21	63%	32%	6%
Black or African American	437	532	21	68%	27%	6%
White	1,009	533	22	64%	29%	7%
Two or more races	186	532	22	71%	23%	6%
English only	3,151	533	21	65%	28%	6%
Initial fluent English proficient	54	526	19	78%	20%	2%
English learner	2,054	533	21	63%	32%	5%
Reclassified fluent English proficient	276	534	20	60%	36%	4%
To be determined	3	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,700	535	21	62%	32%	6%
Not economically disadvantaged	1,843	530	22	69%	26%	5%
Migrant	50	542	20	50%	36%	14%
Nonmigrant	5,493	533	21	64%	30%	6%
Intellectual disability	1,935	532	19	68%	29%	3%
Hearing impairment	49	544	15	45%	49%	6%
Speech or language impairment	157	543	15	43%	50%	7%
Visual impairment	29	526	25	66%	24%	10%
Emotional disturbance	35	551	25	37%	37%	26%
Orthopedic impairment	265	521	23	78%	19%	3%
Other health impairment	280	539	20	53%	40%	7%
Specific learning disability	521	550	14	32%	49%	18%
Deaf–blindness	7	NA	NA	NA	NA	NA
Multiple disabilities	308	516	21	85%	14%	1%
Autism	1,917	532	21	68%	26%	5%
Traumatic brain injury	34	531	24	62%	29%	9%
Not classified	6	NA	NA	NA	NA	NA
Using designated supports	2,077	536	20	61%	32%	7%
No designated supports	3,466	532	22	66%	29%	5%
Using accommodations	1,216	532	21	67%	28%	6%
No accommodations	4,327	533	21	64%	31%	6%

Table 10.A.46 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for Mathematics, Grade Five

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,319	535	21	63%	29%	9%
Male	3,632	535	21	62%	29%	9%
Female	1,687	534	20	66%	27%	7%
American Indian or Alaska Native	32	542	18	53%	34%	13%
Asian	408	533	22	64%	29%	7%
Native Hawaiian or Other Pacific Islander	27	529	24	59%	37%	4%
Filipino	130	534	20	63%	30%	7%
Hispanic or Latino	3,100	535	21	63%	29%	9%
Black or African American	394	535	20	65%	26%	9%
White	1,031	535	22	62%	29%	10%
Two or more races	197	531	22	68%	26%	6%
English only	3,088	534	21	64%	28%	8%
Initial fluent English proficient	40	530	24	68%	23%	10%
English learner	1,841	535	21	63%	29%	8%
Reclassified fluent English proficient	341	538	20	56%	33%	10%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,542	536	21	60%	30%	9%
Not economically disadvantaged	1,777	531	21	69%	25%	7%
Migrant	30	539	18	60%	33%	7%
Nonmigrant	5,289	535	21	63%	29%	9%
Intellectual disability	1,892	533	19	70%	25%	5%
Hearing impairment	41	539	20	51%	37%	12%
Speech or language impairment	166	548	12	35%	47%	18%
Visual impairment	25	518	22	80%	20%	0%
Emotional disturbance	34	545	18	41%	41%	18%
Orthopedic impairment	242	522	23	80%	16%	4%
Other health impairment	271	542	19	48%	38%	14%
Specific learning disability	396	553	13	24%	48%	27%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	295	518	20	87%	12%	2%
Autism	1,937	534	21	63%	29%	8%
Traumatic brain injury	20	536	22	55%	35%	10%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,366	538	20	58%	32%	10%
No designated supports	2,953	532	21	67%	26%	7%
Using accommodations	1,746	537	21	60%	30%	10%
No accommodations	3,573	534	21	64%	28%	8%

Table 10.A.47 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for Mathematics, Grade Six

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,123	631	20	73%	23%	4%
Male	3,445	632	20	72%	23%	5%
Female	1,678	630	20	74%	23%	3%
American Indian or Alaska Native	37	635	23	59%	27%	14%
Asian	395	629	20	72%	25%	3%
Native Hawaiian or Other Pacific Islander	21	620	22	81%	19%	0%
Filipino	148	632	20	72%	24%	5%
Hispanic or Latino	2,956	632	20	72%	24%	4%
Black or African American	403	630	19	76%	21%	4%
White	1,033	630	20	74%	22%	4%
Two or more races	130	631	21	75%	19%	5%
English only	2,990	631	20	74%	23%	4%
Initial fluent English proficient	81	629	21	75%	20%	5%
English learner	1,782	632	20	71%	24%	5%
Reclassified fluent English proficient	260	634	19	68%	29%	3%
To be determined	3	NA	NA	NA	NA	NA
English proficiency unknown	7	NA	NA	NA	NA	NA
Economically disadvantaged	3,411	633	20	71%	25%	5%
Not economically disadvantaged	1,712	628	21	76%	21%	3%
Migrant	36	643	19	56%	25%	19%
Nonmigrant	5,087	631	20	73%	23%	4%
Intellectual disability	1,962	631	18	76%	22%	2%
Hearing impairment	56	639	18	54%	43%	4%
Speech or language impairment	139	642	14	55%	36%	9%
Visual impairment	32	617	23	91%	9%	0%
Emotional disturbance	31	640	19	58%	29%	13%
Orthopedic impairment	260	621	22	80%	18%	2%
Other health impairment	261	637	18	66%	28%	7%
Specific learning disability	342	647	17	42%	43%	15%
Deaf–blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	257	616	20	88%	11%	1%
Autism	1,704	630	20	74%	21%	4%
Traumatic brain injury	21	635	20	57%	43%	0%
Not classified	53	631	18	72%	26%	2%
Using designated supports	1,307	634	21	66%	27%	7%
No designated supports	3,816	630	20	75%	22%	3%
Using accommodations	697	631	23	72%	21%	7%
No accommodations	4,426	631	20	73%	24%	4%

Table 10.A.48 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for Mathematics, Grade Six

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,321	634	20	67%	30%	4%
Male	3,602	634	20	66%	30%	4%
Female	1,719	632	20	69%	28%	2%
American Indian or Alaska Native	30	639	18	63%	30%	7%
Asian	388	631	22	71%	26%	4%
Native Hawaiian or Other Pacific Islander	24	629	21	71%	29%	0%
Filipino	144	630	19	75%	24%	1%
Hispanic or Latino	3,084	634	20	67%	29%	4%
Black or African American	458	634	20	66%	30%	4%
White	1,011	635	20	64%	31%	4%
Two or more races	182	633	20	63%	34%	3%
English only	3,042	633	20	67%	29%	4%
Initial fluent English proficient	80	629	21	73%	26%	1%
English learner	1,910	633	20	67%	29%	4%
Reclassified fluent English proficient	284	637	20	62%	34%	4%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,434	635	19	64%	32%	4%
Not economically disadvantaged	1,887	630	21	72%	24%	4%
Migrant	34	640	18	53%	44%	3%
Nonmigrant	5,287	633	20	67%	29%	4%
Intellectual disability	2,021	633	19	70%	29%	2%
Hearing impairment	53	638	19	45%	45%	9%
Speech or language impairment	139	642	14	58%	37%	4%
Visual impairment	19	625	22	74%	26%	0%
Emotional disturbance	41	645	16	39%	49%	12%
Orthopedic impairment	263	622	22	79%	18%	3%
Other health impairment	270	640	18	61%	33%	6%
Specific learning disability	443	648	14	39%	48%	13%
Deaf–blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	252	617	21	87%	12%	0%
Autism	1,793	633	20	68%	28%	3%
Traumatic brain injury	23	620	20	78%	22%	0%
Not classified	3	NA	NA	NA	NA	NA
Using designated supports	1,991	636	20	62%	33%	4%
No designated supports	3,330	632	20	69%	27%	3%
Using accommodations	1,047	633	21	67%	30%	4%
No accommodations	4,274	634	20	67%	29%	4%

Table 10.A.49 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for Mathematics, Grade Six

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,366	635	20	67%	26%	7%
Male	3,592	636	20	64%	27%	8%
Female	1,774	632	20	72%	23%	5%
American Indian or Alaska Native	29	636	23	62%	24%	14%
Asian	415	634	21	70%	21%	9%
Native Hawaiian or Other Pacific Islander	25	626	19	88%	12%	0%
Filipino	139	633	22	73%	20%	6%
Hispanic or Latino	3,171	635	20	66%	28%	6%
Black or African American	432	635	20	71%	22%	7%
White	969	635	21	65%	25%	10%
Two or more races	186	631	21	68%	27%	4%
English only	3,054	635	21	66%	26%	8%
Initial fluent English proficient	57	628	20	82%	12%	5%
English learner	1,797	635	20	68%	25%	6%
Reclassified fluent English proficient	451	636	19	65%	29%	6%
To be determined	3	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,632	636	20	65%	27%	7%
Not economically disadvantaged	1,734	632	22	70%	23%	7%
Migrant	33	641	18	52%	39%	9%
Nonmigrant	5,333	635	20	67%	26%	7%
Intellectual disability	1,986	634	18	72%	24%	4%
Hearing impairment	62	640	16	66%	24%	10%
Speech or language impairment	116	646	14	52%	35%	13%
Visual impairment	23	627	22	87%	4%	9%
Emotional disturbance	33	651	17	39%	27%	33%
Orthopedic impairment	244	623	23	80%	16%	5%
Other health impairment	263	639	20	57%	33%	10%
Specific learning disability	380	651	15	31%	46%	24%
Deaf–blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	320	617	20	86%	13%	1%
Autism	1,899	635	20	66%	26%	7%
Traumatic brain injury	35	633	26	60%	23%	17%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,256	637	20	64%	27%	9%
No designated supports	3,110	633	21	69%	25%	6%
Using accommodations	1,826	637	20	64%	28%	9%
No accommodations	3,540	634	20	69%	25%	6%

Table 10.A.50 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for Mathematics, Grade Seven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,117	732	21	70%	24%	5%
Male	3,392	733	21	69%	25%	6%
Female	1,725	730	21	73%	23%	4%
American Indian or Alaska Native	32	735	21	66%	25%	9%
Asian	397	732	22	70%	22%	8%
Native Hawaiian or Other Pacific Islander	25	734	25	64%	20%	16%
Filipino	179	730	20	75%	22%	3%
Hispanic or Latino	2,793	733	21	69%	26%	5%
Black or African American	424	730	21	75%	21%	4%
White	1,102	731	21	72%	23%	5%
Two or more races	165	731	21	70%	27%	4%
English only	3,011	732	21	72%	23%	5%
Initial fluent English proficient	73	726	20	79%	21%	0%
English learner	1,705	733	22	68%	26%	6%
Reclassified fluent English proficient	318	734	21	64%	30%	6%
To be determined	3	NA	NA	NA	NA	NA
English proficiency unknown	7	NA	NA	NA	NA	NA
Economically disadvantaged	3,339	734	21	67%	27%	6%
Not economically disadvantaged	1,778	729	21	76%	19%	4%
Migrant	34	745	17	29%	65%	6%
Nonmigrant	5,083	732	21	71%	24%	5%
Intellectual disability	2,001	731	19	75%	22%	3%
Hearing impairment	40	740	20	45%	43%	13%
Speech or language impairment	119	747	15	36%	51%	13%
Visual impairment	45	718	21	89%	11%	0%
Emotional disturbance	35	742	19	51%	43%	6%
Orthopedic impairment	255	718	22	87%	9%	3%
Other health impairment	232	737	20	65%	28%	7%
Specific learning disability	317	749	14	36%	49%	15%
Deaf–blindness	6	NA	NA	NA	NA	NA
Multiple disabilities	303	715	19	90%	8%	1%
Autism	1,708	733	21	69%	24%	7%
Traumatic brain injury	24	732	23	75%	17%	8%
Not classified	32	727	23	75%	22%	3%
Using designated supports	1,324	735	20	66%	27%	6%
No designated supports	3,793	731	21	72%	23%	5%
Using accommodations	670	729	21	75%	22%	4%
No accommodations	4,447	732	21	70%	25%	6%

Table 10.A.51 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for Mathematics, Grade Seven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,275	733	22	69%	24%	8%
Male	3,546	733	22	68%	24%	8%
Female	1,729	731	21	71%	23%	6%
American Indian or Alaska Native	32	736	22	66%	22%	13%
Asian	427	730	22	72%	22%	6%
Native Hawaiian or Other Pacific Islander	18	726	24	78%	11%	11%
Filipino	149	734	22	66%	22%	12%
Hispanic or Latino	3,024	733	22	68%	24%	8%
Black or African American	412	732	22	71%	21%	8%
White	1,065	732	22	70%	23%	7%
Two or more races	148	730	22	71%	21%	8%
English only	3,028	733	22	69%	24%	7%
Initial fluent English proficient	84	728	22	76%	20%	4%
English learner	1,810	732	22	68%	24%	8%
Reclassified fluent English proficient	345	735	22	67%	23%	10%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,413	734	21	67%	25%	8%
Not economically disadvantaged	1,862	730	22	73%	21%	6%
Migrant	29	741	18	48%	45%	7%
Nonmigrant	5,246	732	22	69%	23%	8%
Intellectual disability	2,087	731	20	75%	21%	4%
Hearing impairment	52	747	16	35%	42%	23%
Speech or language impairment	113	745	18	42%	42%	16%
Visual impairment	29	715	21	86%	14%	0%
Emotional disturbance	26	739	14	73%	19%	8%
Orthopedic impairment	243	721	23	82%	14%	4%
Other health impairment	277	739	20	58%	31%	10%
Specific learning disability	382	752	18	32%	39%	29%
Deaf–blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	269	714	20	91%	8%	1%
Autism	1,766	732	22	69%	24%	8%
Traumatic brain injury	20	732	24	65%	25%	10%
Not classified	8	NA	NA	NA	NA	NA
Using designated supports	1,797	735	22	63%	27%	10%
No designated supports	3,478	731	22	72%	22%	6%
Using accommodations	1,014	731	22	71%	22%	6%
No accommodations	4,261	733	22	68%	24%	8%

Table 10.A.52 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for Mathematics, Grade Seven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,375	735	20	65%	27%	7%
Male	3,632	736	21	64%	28%	8%
Female	1,743	734	20	68%	26%	6%
American Indian or Alaska Native	34	740	24	62%	21%	18%
Asian	402	732	21	72%	20%	7%
Native Hawaiian or Other Pacific Islander	28	737	20	68%	29%	4%
Filipino	152	733	18	75%	22%	3%
Hispanic or Latino	3,096	735	20	65%	28%	7%
Black or African American	465	736	20	66%	26%	8%
White	984	736	20	62%	30%	8%
Two or more races	214	735	21	66%	23%	10%
English only	3,090	735	21	65%	28%	7%
Initial fluent English proficient	84	728	20	85%	13%	2%
English learner	1,729	735	20	67%	26%	7%
Reclassified fluent English proficient	464	738	19	60%	32%	8%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,594	737	20	62%	30%	8%
Not economically disadvantaged	1,781	732	21	71%	22%	6%
Migrant	36	738	20	67%	19%	14%
Nonmigrant	5,339	735	20	65%	27%	7%
Intellectual disability	2,093	733	19	72%	24%	4%
Hearing impairment	47	743	16	47%	51%	2%
Speech or language impairment	109	746	13	48%	44%	8%
Visual impairment	18	719	20	89%	11%	0%
Emotional disturbance	48	747	14	44%	44%	13%
Orthopedic impairment	231	722	22	81%	16%	3%
Other health impairment	299	743	19	46%	43%	11%
Specific learning disability	423	753	14	28%	49%	24%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	263	717	20	88%	10%	2%
Autism	1,817	735	20	66%	26%	8%
Traumatic brain injury	27	731	23	70%	22%	7%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,351	737	20	62%	30%	9%
No designated supports	3,024	734	21	68%	26%	6%
Using accommodations	1,853	736	20	63%	30%	8%
No accommodations	3,522	735	21	67%	26%	7%

Table 10.A.53 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for Mathematics, Grade Eight

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,757	831	20	71%	25%	4%
Male	3,162	831	21	70%	25%	5%
Female	1,595	831	20	73%	24%	3%
American Indian or Alaska Native	42	834	20	62%	33%	5%
Asian	375	829	21	75%	21%	4%
Native Hawaiian or Other Pacific Islander	21	823	21	81%	19%	0%
Filipino	150	827	21	76%	22%	2%
Hispanic or Latino	2,570	832	20	71%	25%	4%
Black or African American	420	831	20	72%	23%	5%
White	1,065	831	21	69%	25%	5%
Two or more races	114	832	21	65%	29%	6%
English only	2,778	831	21	71%	24%	5%
Initial fluent English proficient	86	830	21	67%	30%	2%
English learner	1,565	831	20	71%	25%	4%
Reclassified fluent English proficient	321	832	20	71%	25%	4%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,111	833	20	69%	26%	5%
Not economically disadvantaged	1,646	828	21	74%	22%	4%
Migrant	21	840	16	76%	10%	14%
Nonmigrant	4,736	831	20	71%	25%	4%
Intellectual disability	1,976	832	19	73%	24%	3%
Hearing impairment	54	840	19	56%	35%	9%
Speech or language impairment	73	841	17	53%	37%	10%
Visual impairment	39	816	21	87%	13%	0%
Emotional disturbance	30	843	19	50%	37%	13%
Orthopedic impairment	285	822	22	80%	17%	3%
Other health impairment	206	838	19	55%	38%	7%
Specific learning disability	261	846	14	41%	48%	11%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	238	816	20	88%	11%	1%
Autism	1,528	831	20	73%	23%	5%
Traumatic brain injury	25	833	17	72%	28%	0%
Not classified	42	822	17	93%	7%	0%
Using designated supports	1,189	834	20	65%	29%	6%
No designated supports	3,568	830	20	73%	23%	4%
Using accommodations	600	830	21	69%	27%	4%
No accommodations	4,157	831	20	71%	24%	4%

Table 10.A.54 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for Mathematics, Grade Eight

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,232	834	21	66%	27%	7%
Male	3,471	834	21	65%	27%	8%
Female	1,761	833	21	66%	27%	6%
American Indian or Alaska Native	39	837	21	56%	33%	10%
Asian	408	832	22	70%	22%	8%
Native Hawaiian or Other Pacific Islander	21	836	19	57%	43%	0%
Filipino	179	831	21	72%	23%	4%
Hispanic or Latino	2,840	834	21	64%	29%	7%
Black or African American	452	833	22	66%	26%	8%
White	1,116	833	21	68%	24%	8%
Two or more races	177	834	22	63%	28%	10%
English only	3,073	833	21	66%	26%	7%
Initial fluent English proficient	82	828	21	77%	18%	5%
English learner	1,692	834	21	65%	28%	7%
Reclassified fluent English proficient	377	836	21	60%	31%	9%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,284	836	20	63%	30%	8%
Not economically disadvantaged	1,948	830	22	71%	22%	6%
Migrant	33	845	18	39%	42%	18%
Nonmigrant	5,199	834	21	66%	27%	7%
Intellectual disability	2,070	833	19	70%	26%	4%
Hearing impairment	51	844	19	43%	41%	16%
Speech or language impairment	95	849	13	34%	51%	16%
Visual impairment	39	821	24	79%	13%	8%
Emotional disturbance	33	842	19	58%	33%	9%
Orthopedic impairment	237	820	21	83%	16%	1%
Other health impairment	241	840	19	53%	38%	9%
Specific learning disability	357	852	14	28%	47%	24%
Deaf–blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	315	817	22	85%	13%	2%
Autism	1,764	834	21	67%	25%	8%
Traumatic brain injury	24	843	24	46%	38%	17%
Not classified	1	NA	NA	NA	NA	NA
Using designated supports	1,803	837	21	60%	31%	9%
No designated supports	3,429	832	21	69%	25%	6%
Using accommodations	972	832	21	68%	26%	6%
No accommodations	4,260	834	21	65%	27%	8%

Table 10.A.55 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for Mathematics, Grade Eight

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	5,229	834	20	64%	29%	7%
Male	3,532	835	20	63%	30%	7%
Female	1,697	833	20	66%	28%	6%
American Indian or Alaska Native	31	838	21	52%	32%	16%
Asian	435	833	21	65%	29%	7%
Native Hawaiian or Other Pacific Islander	24	828	20	83%	13%	4%
Filipino	163	836	21	60%	32%	8%
Hispanic or Latino	2,968	835	20	63%	30%	7%
Black or African American	430	835	18	66%	30%	4%
White	1,023	834	21	66%	27%	7%
Two or more races	155	836	20	66%	26%	8%
English only	2,965	835	20	65%	29%	6%
Initial fluent English proficient	93	829	21	73%	23%	4%
English learner	1,648	834	21	63%	30%	7%
Reclassified fluent English proficient	515	837	19	60%	33%	8%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,409	836	20	62%	32%	7%
Not economically disadvantaged	1,820	832	21	69%	25%	7%
Migrant	34	841	18	44%	47%	9%
Nonmigrant	5,195	834	20	64%	29%	7%
Intellectual disability	2,084	834	19	69%	27%	4%
Hearing impairment	50	842	21	50%	34%	16%
Speech or language impairment	104	848	14	38%	48%	14%
Visual impairment	31	818	20	87%	10%	3%
Emotional disturbance	36	845	16	33%	56%	11%
Orthopedic impairment	214	822	22	79%	17%	4%
Other health impairment	280	842	18	49%	40%	12%
Specific learning disability	341	851	13	28%	51%	21%
Deaf–blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	278	817	21	84%	14%	2%
Autism	1,785	834	20	65%	28%	6%
Traumatic brain injury	23	836	20	57%	39%	4%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	2,158	836	20	60%	32%	8%
No designated supports	3,071	833	21	67%	27%	6%
Using accommodations	1,696	837	19	60%	32%	7%
No accommodations	3,533	833	20	66%	28%	6%

Table 10.A.56 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 for Mathematics, Grade Eleven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,268	933	20	66%	29%	6%
Male	2,800	934	21	64%	29%	7%
Female	1,468	931	20	69%	27%	3%
American Indian or Alaska Native	30	941	17	60%	30%	10%
Asian	332	931	22	70%	23%	7%
Native Hawaiian or Other Pacific Islander	17	936	19	71%	24%	6%
Filipino	142	931	20	68%	26%	6%
Hispanic or Latino	2,257	933	20	67%	28%	5%
Black or African American	402	936	21	60%	34%	6%
White	982	934	20	64%	30%	6%
Two or more races	106	934	19	61%	34%	5%
English only	2,598	934	20	65%	29%	6%
Initial fluent English proficient	69	932	23	61%	32%	7%
English learner	1,278	932	20	70%	26%	4%
Reclassified fluent English proficient	318	936	21	62%	29%	9%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Economically disadvantaged	2,749	935	20	64%	30%	6%
Not economically disadvantaged	1,519	931	21	70%	25%	5%
Migrant	17	938	18	59%	41%	0%
Nonmigrant	4,251	933	20	66%	28%	6%
Intellectual disability	1,923	932	19	70%	27%	3%
Hearing impairment	47	934	19	68%	28%	4%
Speech or language impairment	46	946	12	46%	43%	11%
Visual impairment	29	927	25	66%	28%	7%
Emotional disturbance	48	950	17	29%	48%	23%
Orthopedic impairment	263	924	21	83%	15%	2%
Other health impairment	149	942	19	50%	38%	11%
Specific learning disability	298	948	14	34%	48%	18%
Deaf–blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	218	919	21	82%	16%	2%
Autism	1,187	934	21	64%	29%	7%
Traumatic brain injury	29	933	21	66%	31%	3%
Not classified	28	906	14	96%	4%	0%
Using designated supports	805	934	20	64%	30%	5%
No designated supports	3,463	933	20	66%	28%	6%
Using accommodations	337	928	21	75%	21%	4%
No accommodations	3,931	934	20	65%	29%	6%

Table 10.A.57 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2016–17 for Mathematics, Grade Eleven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,496	934	20	66%	28%	6%
Male	2,878	934	20	64%	30%	6%
Female	1,618	932	20	69%	26%	5%
American Indian or Alaska Native	38	932	20	68%	29%	3%
Asian	340	930	21	71%	22%	6%
Native Hawaiian or Other Pacific Islander	29	936	18	55%	45%	0%
Filipino	150	933	22	65%	28%	7%
Hispanic or Latino	2,417	934	20	66%	29%	5%
Black or African American	402	934	21	67%	26%	7%
White	1,000	934	20	63%	30%	7%
Two or more races	120	932	21	68%	27%	5%
English only	2,638	933	20	66%	28%	6%
Initial fluent English proficient	82	927	23	76%	22%	2%
English learner	1,346	933	20	67%	28%	5%
Reclassified fluent English proficient	424	938	19	58%	34%	8%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Economically disadvantaged	2,861	935	20	65%	29%	6%
Not economically disadvantaged	1,635	932	21	68%	27%	5%
Migrant	19	943	10	53%	47%	0%
Nonmigrant	4,477	934	20	66%	28%	6%
Intellectual disability	1,937	933	19	70%	26%	4%
Hearing impairment	63	938	20	62%	27%	11%
Speech or language impairment	41	949	12	32%	59%	10%
Visual impairment	39	921	23	79%	18%	3%
Emotional disturbance	31	946	11	52%	39%	10%
Orthopedic impairment	291	923	22	80%	16%	3%
Other health impairment	202	943	18	42%	46%	12%
Specific learning disability	298	949	13	33%	51%	16%
Deaf–blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	231	918	21	84%	15%	1%
Autism	1,328	935	20	65%	29%	6%
Traumatic brain injury	30	939	22	73%	17%	10%
Not classified	5	NA	NA	NA	NA	NA
Using designated supports	934	936	20	62%	30%	9%
No designated supports	3,562	933	20	67%	28%	5%
Using accommodations	529	932	20	69%	26%	4%
No accommodations	3,967	934	20	65%	29%	6%

Table 10.A.58 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2017–18 for Mathematics, Grade Eleven

Student Group	N	SS Mean	SS SD	Level 1	Level 2	Level 3
All Students	4,437	935	21	65%	26%	9%
Male	2,916	936	21	62%	27%	11%
Female	1,521	934	20	70%	23%	7%
American Indian or Alaska Native	34	946	18	38%	44%	18%
Asian	346	934	21	70%	22%	8%
Native Hawaiian or Other Pacific Islander	18	932	24	56%	33%	11%
Filipino	128	936	21	68%	22%	10%
Hispanic or Latino	2,430	935	20	66%	25%	9%
Black or African American	416	936	21	64%	26%	10%
White	931	936	21	62%	28%	11%
Two or more races	134	935	23	64%	25%	10%
English only	2,599	936	21	64%	26%	10%
Initial fluent English proficient	70	936	22	63%	29%	9%
English learner	1,239	934	21	68%	24%	8%
Reclassified fluent English proficient	517	938	20	63%	26%	11%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	11	923	19	91%	9%	0%
Economically disadvantaged	2,857	937	20	63%	27%	10%
Not economically disadvantaged	1,580	933	22	68%	23%	9%
Migrant	16	940	18	63%	31%	6%
Nonmigrant	4,421	935	21	65%	26%	9%
Intellectual disability	1,876	934	18	71%	24%	5%
Hearing impairment	50	939	21	58%	28%	14%
Speech or language impairment	46	951	14	41%	30%	28%
Visual impairment	29	922	24	86%	10%	3%
Emotional disturbance	39	949	22	36%	36%	28%
Orthopedic impairment	230	925	22	75%	20%	5%
Other health impairment	190	943	20	49%	35%	15%
Specific learning disability	275	954	14	21%	48%	31%
Deaf–blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	230	918	21	87%	11%	3%
Autism	1,431	937	21	63%	26%	11%
Traumatic brain injury	38	927	23	82%	16%	3%
Not classified	0	NA	NA	NA	NA	NA
Using designated supports	1,176	937	22	61%	26%	13%
No designated supports	3,261	935	20	67%	25%	8%
Using accommodations	753	937	21	61%	27%	12%
No accommodations	3,684	935	21	66%	25%	9%

Appendix 10.B: Comparisons of Test Characteristics

Table 10.B.1 Marginal Reliability and Standard Error of the Measurement (SEM) Across 2015–16, 2016–17, and 2017–18

Content Area and Grade	2015–16 Reliability	2016–17 Reliability	2017–18 Reliability	2015–16 Theta Score Mean	2015–16 Theta Score SD	2015–16 Theta Score SEM	2016–17 Theta Score Mean	2016–17 Theta Score SD	2016–17 Theta Score SEM	2017–18 Theta Score Mean	2017–18 Theta Score SD	2017–18 Theta Score SEM
ELA 3	0.89	0.89	0.88	-0.03	1.29	0.43	0.09	1.54	0.52	0.07	1.26	0.44
ELA 4	0.85	0.87	0.88	-0.03	1.03	0.39	0.04	1.33	0.48	0.03	1.21	0.42
ELA 5	0.83	0.88	0.88	-0.04	0.92	0.38	0.01	1.23	0.42	0.07	1.19	0.41
ELA 6	0.85	0.86	0.86	0.00	0.99	0.39	-0.05	1.08	0.41	0.03	1.06	0.40
ELA 7	0.84	0.89	0.89	-0.08	0.99	0.39	-0.15	1.28	0.42	-0.02	1.29	0.43
ELA 8	0.86	0.87	0.85	-0.05	0.94	0.36	0.02	1.07	0.39	0.03	1.00	0.39
ELA 11	0.84	0.85	0.89	-0.07	0.94	0.38	0.11	1.07	0.41	0.16	1.24	0.41
Mathematics 3	0.74	0.81	0.80	-0.08	0.83	0.43	-0.12	1.02	0.44	0.04	0.93	0.41
Mathematics 4	0.78	0.84	0.82	-0.12	0.88	0.41	-0.07	1.03	0.41	-0.04	0.88	0.38
Mathematics 5	0.78	0.84	0.82	-0.06	0.80	0.37	-0.11	1.05	0.42	0.02	0.93	0.40
Mathematics 6	0.76	0.73	0.75	-0.15	0.86	0.42	-0.04	0.85	0.44	0.04	0.83	0.42
Mathematics 7	0.81	0.84	0.82	-0.08	0.90	0.40	-0.10	1.05	0.42	-0.01	0.93	0.39
Mathematics 8	0.76	0.81	0.80	-0.15	0.89	0.43	-0.02	0.92	0.40	0.03	0.77	0.35
Mathematics 11	0.77	0.80	0.83	-0.11	0.96	0.46	-0.10	0.96	0.43	-0.04	1.01	0.41

Chapter 11: Continuous Improvement

The third operational administration of the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics was offered during the 2017–18 school year. Over the past three years, continuous efforts have been made to improve the assessments in various ways. This chapter summarizes the completed and ongoing improvements for the CAAs for ELA and mathematics in the areas of test design, item development and item bank refreshing, test delivery and administration, psychometric analyses, and accessibility.

11.1 Test Design

Educational Testing Service works in collaboration with the California Department of Education (CDE) in planning, proposing, evaluating, and improving CAA test design.

The CAAs for ELA and mathematics have been administered using a multistage testing (MST) design since they were first administered operationally, during the 2015–16 California Assessment of Student Performance and Progress (CAASPP) administration. 2015–16 was also the starting point for establishing the item pool required for multistage tests (MSTs).

11.1.1 2015–16 Design

The assessments each have two stages, with two spiraled routers in Stage 1 and three modules in Stage 2. Although the original plan was to have one router and three modules, two router versions were administrated in 2015–16 to collect more items for the item pool. The test was composed of 21 items in each router version and 6 items in each of the three Stage 2 modules. This test design facilitated the collection of item information for up to 50 unique items in each test. Prior to the start of the student’s testing, the test examiner administered a survey of student characteristics (SSC) to collect students’ background information.

11.1.2 2016–17 Design

Only one router was administered during the 2016–17 administration; this configuration took into consideration that there were already items with statistics obtained from the 2015–16 administration. The test was composed of 10 selected operational items in the router, three embedded field test items (five versions), and 15 operational items in each of the three Stage 2 modules, which allowed sufficient estimates of student ability in Stage 2. Finally, to reduce the amount of work done by the test examiner, the SSC was reduced to three short questions asked at the end of each test.

11.1.3 2017–18 Design

For the 2017–18 administration, a similar design to that of the 2016–17 administration was used but with one more field test item added to expand the item pool. The assessment included 10 operational items in the router, four embedded field test items, and fifteen operational items in each of the easy, moderate, and hard modules. The same three-question survey used during the 2016–17 administration was presented to test examiners at the end of the assessment.

This design supported successful testing experiences and accurate student ability estimation for most students. However, the analysis of the estimated test information functions revealed a lack of differentiation across the three MST pathways for some grades and content areas. Instead, two second-stage modules would be sufficient to separate students with different abilities across all grade levels and content areas. Refer to

[Figure 11.A.1](#) to [Figure 11.A.27](#) for test information curves¹² based on the spring 2018 observed data.

11.1.4 2018–19 Design

After the 2017–18 administration, Educational Testing Service (ETS) conducted an evaluation and refresh of the existing item bank based on three years' data. After the item bank was refreshed and the language complexity of CAAs for ELA and mathematics items was lowered (described in the next subsection, 11.2), analysis showed very little separation in the average difficulties between the moderate Stage 2 module and hard Stage 2 module for some grade-specific tests in the refreshed item bank. This finding, along with findings based on test information curves, led to a test design change for the 2018–19 forms that CDE and ETS jointly proposed and agreed to implement. In the new test design, the moderate Stage 2 module was removed, leaving the easy and hard modules in Stage 2. The number of items at each tier level for the revised test design with one router and two Stage 2 modules is listed in [Table 11.1](#).

Table 11.1 Number of Items at Each Tier Level for Stage 2 Modules in the 2018–19 Administration

Tier	Router	Stage 2 Easy	Stage 2 Hard
1	6–7 items	7–8 items	3 items
2	3–4 items	4–5 items	4–5 items
3	0 items	3 items	7–8 items
Total:	10 operational items	15 operational items	15 operational items

In addition, to further reduce test examiners' burden and considering the limited use of the survey information, the three-question survey at the end of the CAAs for ELA and mathematics will be removed for the 2018–19 forms.

11.2 Item Development and Item Bank Refreshing

For the 2017–18 item development cycle, the ETS content teams used revised item specifications and lowered the language complexity of CAAs in the development of new items and for the refresh of existing ELA and mathematics items. Items developed and refreshed for this cycle, when compared to those items developed previously, featured significantly shorter reading passages, fewer sentences with complex structures, and reduced multisyllabic words. When these items were shared with teacher panelists prior to field-test administration, the feedback received was positive and enthusiastic.

This item bank refreshing work will continue through subsequent development cycles, with the goal of phasing out higher complexity items by the 2021–22 administration.

¹² The test information functions were calculated by the inverse of estimated conditional standard errors of measurement (CSEMs) of theta (estimated ability) values for the spring 2018 sample.

11.3 Test Delivery and Administration

11.3.1. Stakeholder Feedback

The CAASPP program solicits feedback annually from various stakeholder groups, including local educational agency CAASPP coordinators, CAASPP test site coordinators, test administrators, and test examiners, through the CAASPP Post-Test Survey. This year, more than 10,000 California educators provided specific, actionable insights as to how to improve the testing experience, mostly through improving the resources required for test preparation and training.

11.3.2. Commitment to Preparation and Training Resources

When asked about preparation and training resources for the CAAs, survey respondents found them helpful overall. When asked if the online, self-guided Test Examiner Tutorial provided all the training necessary for CAA test examiners, 82 percent of all respondents agreed it did. Of the sample of 200 respondents who indicated there is room for improvement to the Test Examiner Tutorial, many indicated a need for additional and more specific training that demonstrates the administration of the CAAs. Respondents also suggested including supplemental materials, in the form of a PowerPoint presentation, a checklist, or some other guide, to help them retain key information.

In response to this feedback, the following supplemental resources will be developed for the 2018–19 administration:

- How to Start a Test Session for CAAs for ELA/Mathematics Quick Start Guide
- How to Start a Practice Test for CAAs for ELA/Mathematics Quick Reference Guide
- How to Start a Training Test for CAAs for ELA/Mathematics Quick Reference Guide
- How to View CAA Assessment Results Quick Reference Guide

Additionally, efforts have been made to better communicate the availability of the Test Examiner Checklist, a resource that is created and posted annually. Finally, a PowerPoint version of the Test Examiner Tutorial will be made available on caaspp.org so LEA CAASPP coordinators can customize training for their test examiners.

11.4 Psychometric Analyses

11.4.1 Levels of Item Analyses

Since the 2016–17 administration of the CAAs for ELA and mathematics, composite items in grades three, five, six, and eight for ELA and all grades for mathematics assessments were included in the administration and item analyses.

Each composite item has two parts. In the 2016-17 administration year, the overall performance of the composite items was analyzed and reported. To better understand how composite items performed—not only in terms of overall performance, but also with regard to each composite part—ETS conducted item analyses for both the composite whole and composite parts after test administration in 2017–18. Additionally, the in-house tools ETS used brought about improved analysis. The composite part item analyses were very informative to help assessment developers and teacher reviewers better understand those composite items.

11.4.2 Types of Item Analyses

ETS has been analyzing CAA items from the first year the CAAs for ELA and mathematics were administered, including the following types of analysis:

- Item difficulty
- Item discrimination
- Item score distributions
- differential item functioning

However, distractor analyses were conducted only for multiple-choice single select items in the previous administrations, due to the complexity of the structures of other item types and effectiveness of analysis tools. For the 2018–19 CAAs for ELA and mathematics administration, ETS plans to add distractor analyses for all item types except multiple-choice, multiple-attempt items, which are scheduled to be phased out gradually at the CDE’s request.

11.5 Equating

11.5.1 Presenting All Equating Results

In the postequating procedure that ETS currently uses, robust-z (Huynh & Meyer, 2010) removes unstable linking items, a process that usually requires several rounds of iterations to remove several unstable items sequentially and revealing a set of stable linking items. Prior to the 2017–18 administration, only the final results of applying robust-z were presented to the CDE. Starting with the results of the 2017–18 administration, results from each iteration of applying robust-z were recorded and presented to the CDE.

As mentioned previously, prior analyses found that the test information function for the moderate and hard modules overlapped considerably, and that there was little separation between the average difficulty of the moderate and hard modules. This analysis supported the decision to modify the 2018–19 test design by reducing the number of Stage 2 modules from three to two.

11.5.2 Transitioning from Postequating to Preequating in the 2019–20 Administration

The 2017–18 administration is the third operational administration for the CAAs for ELA and mathematics. To accumulate sufficient items that meet both statistical and content requirements, the CAAs for ELA and mathematics have postequated to obtain statistics for new items. However, based on item bank, as well as the reduction in the number of Stage 2 modules from three to two, there is a sufficient number of items to preequate for the 2019–20 administration and subsequent years.

To gather evidence supporting the implementation of preequating for the 2019–20 administration, both pre- and postequating will be conducted for the 2018–19 administration. Conversion tables will be created and compared for an investigation of the differences between pre- and postequated procedures. ETS plans to preequate for the 2019–20 administration pending satisfactory results from such comparison analysis in 2018–19 and approval from CDE.

11.6 Accessibility

Like all CAASPP assessments, the CAAs are administered using the test delivery system created by the American Institutes for Research for the Smarter Balanced assessments. As such, implementation of new online universal tools, designated supports, and accommodations are aligned with the test delivery system.

The following changes will be implemented during the 2018–19 CAAs for ELA and mathematics administrations:

- Streamline will be reassigned as an embedded designated support.
- “Medical device” will be a new non-embedded designated support for all assessments.
- The Highlighter universal tool will be available in four colors.

Reference

Huynh, H., & Meyer, P. (2010). Use of robust z in detecting unstable items in item response theory models. *Practical Assessment, Research & Evaluation*, 15(2), 1–8.

Appendix 11.A: Test Information Curves for 2017–18 Forms

Test information function (TIF) is a measure of the amount of information provided by a test at a given score level. [Figure 11.A.1](#) through [Figure 11.A.28](#) present test information functions (TIFs) by theta level and scale score for English language arts/literacy (ELA) and mathematics at each grade level. Data used to generate these figures is presented in [Table 11.A.1](#) through [Table 11.A.28](#).

TIF for ELA, Grade Three

[Figure 11.A.1](#) plots TIF by theta level for grade three ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.1](#).

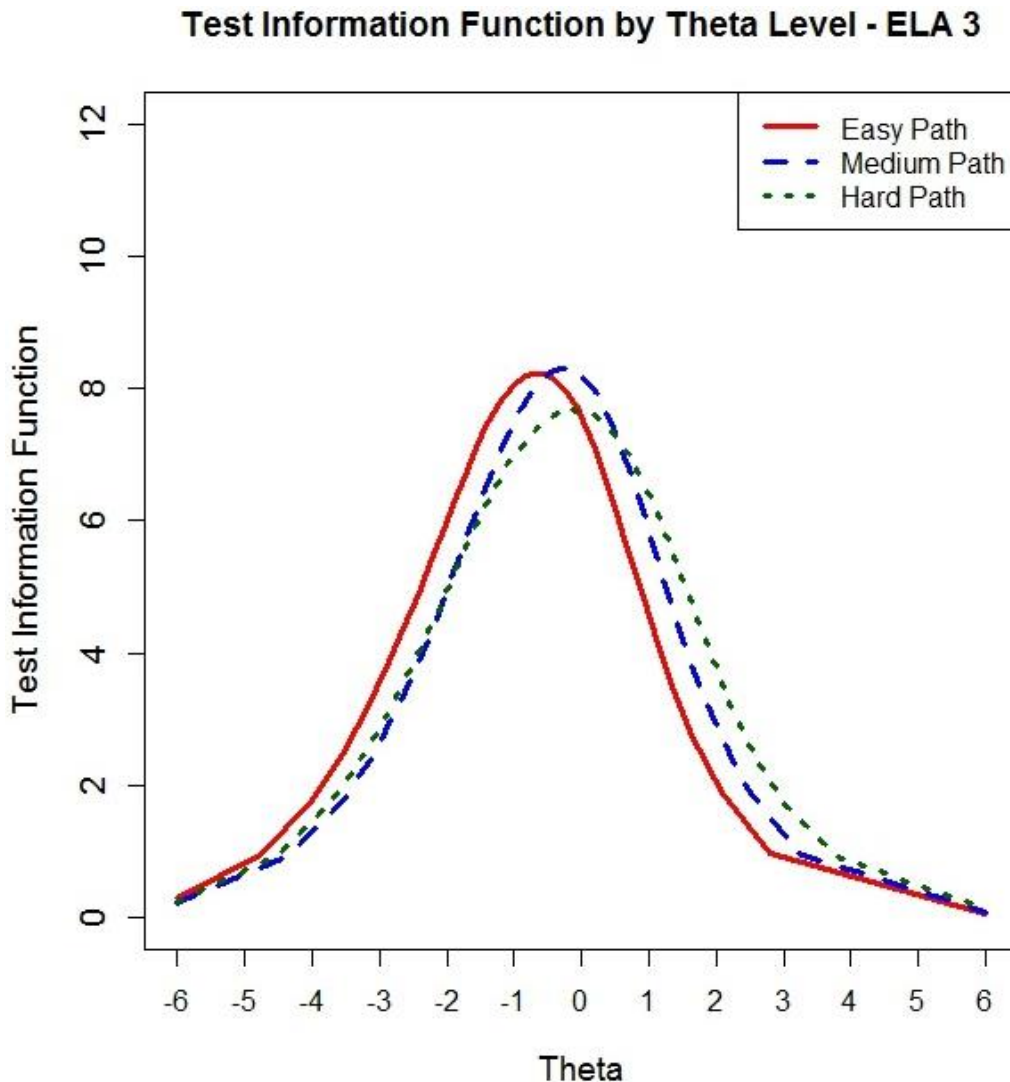


Figure 11.A.1 TIF by Theta—ELA, Grade Three

Table 11.A.1 ELA, Grade Three Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.2953	-6.0000	0.2042	-6.0000	0.2347
-4.7534	0.9398	-4.3610	0.9239	-4.5076	0.9265
-3.9952	1.7712	-3.5866	1.7279	-3.7345	1.7265
-3.5249	2.5146	-3.1042	2.4536	-3.2500	2.4311
-3.1729	3.1874	-2.7443	3.1282	-2.8849	3.0652
-2.8862	3.8038	-2.4534	3.7668	-2.5863	3.6476
-2.6413	4.3746	-2.2073	4.3741	-2.3307	4.1897
-2.4255	4.9073	-1.9924	4.9489	-2.1053	4.6966
-2.2314	5.4057	-1.8006	5.4848	-1.9024	5.1672
-2.0539	5.8707	-1.6259	5.9766	-1.7165	5.5980
-1.8894	6.3010	-1.4645	6.4189	-1.5437	5.9844
-1.7354	6.6931	-1.3133	6.8101	-1.3812	6.3234
-1.5898	7.0436	-1.1699	7.1512	-1.2265	6.6154
-1.4508	7.3497	-1.0329	7.4438	-1.0781	6.8628
-1.3170	7.6094	-0.9007	7.6918	-0.9345	7.0708
-1.1874	7.8220	-0.7723	7.8978	-0.7947	7.2444
-1.0608	7.9883	-0.6470	8.0632	-0.6580	7.3877
-0.9366	8.1096	-0.5239	8.1882	-0.5236	7.5031
-0.8138	8.1876	-0.4023	8.2713	-0.3910	7.5908
-0.6919	8.2231	-0.2817	8.3095	-0.2597	7.6490
-0.5702	8.2157	-0.1612	8.2993	-0.1292	7.6753
-0.4480	8.1638	-0.0402	8.2369	0.0012	7.6670
-0.3247	8.0638	0.0821	8.1189	0.1321	7.6215
-0.1995	7.9114	0.2066	7.9425	0.2641	7.5372
-0.0714	7.7012	0.3345	7.7053	0.3979	7.4127
0.0608	7.4278	0.4668	7.4064	0.5344	7.2467
0.1986	7.0865	0.6053	7.0442	0.6744	7.0371
0.3440	6.6739	0.7517	6.6190	0.8192	6.7806
0.4996	6.1883	0.9086	6.1303	0.9702	6.4726
0.6689	5.6305	1.0796	5.5775	1.1292	6.1077
0.8571	5.0030	1.2695	4.9613	1.2989	5.6794
1.0722	4.3097	1.4862	4.2816	1.4831	5.1824
1.3271	3.5561	1.7426	3.5398	1.6874	4.6137
1.6460	2.7466	2.0626	2.7386	1.9206	3.9741
2.0825	1.8847	2.5001	1.8810	2.1974	3.2702
2.8066	0.9707	3.2255	0.9692	2.5450	2.5145
6.0000	0.0422	6.0000	0.0642	3.0223	1.7236
NA	NA	NA	NA	3.8086	0.9036
NA	NA	NA	NA	6.0000	0.1224

[Figure 11.A.2](#) plots TIF by scale score for grade three ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.2](#).

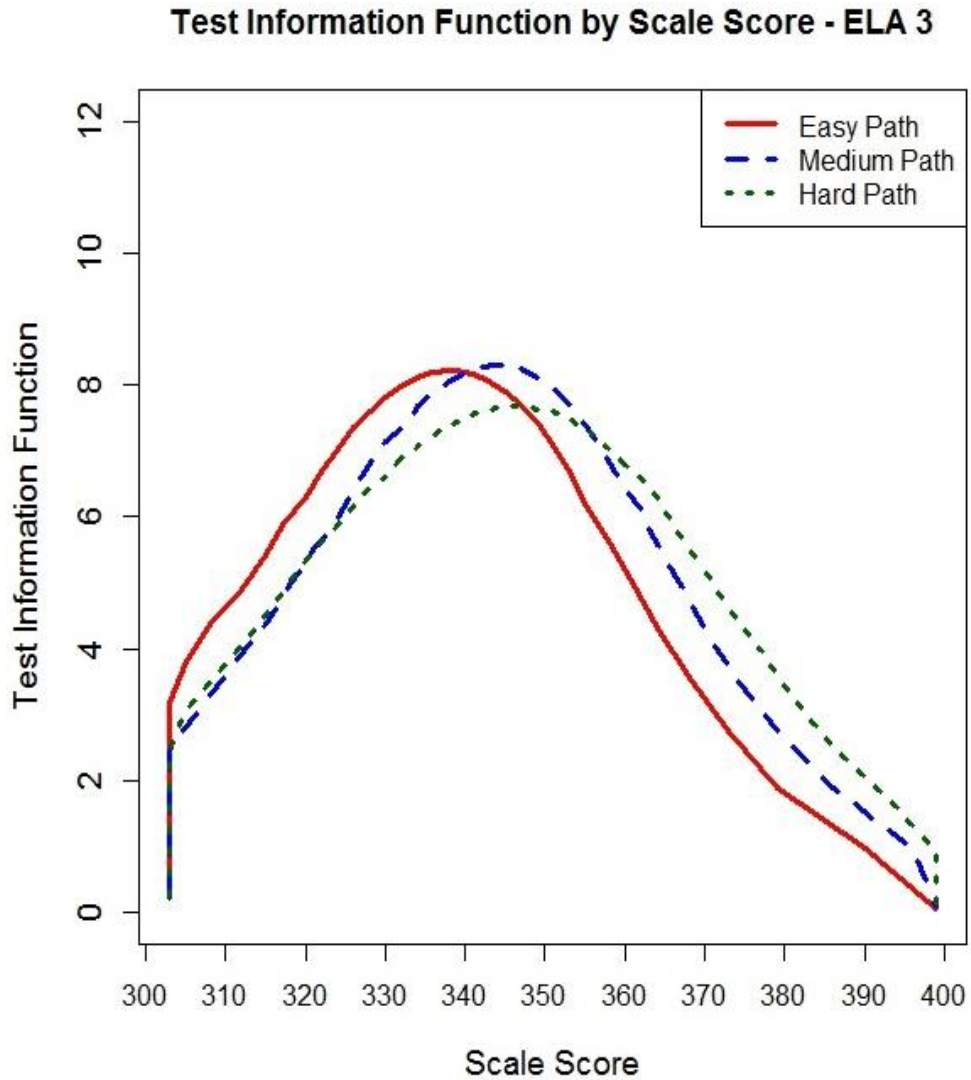


Figure 11.A.2 TIF by Scale Score—ELA, Grade Three

Table 11.A.2 ELA, Grade Three Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
303	0.2953	303	0.2042	303	0.2347
303	0.9398	303	0.9239	303	0.9265
303	1.7712	303	1.7279	303	1.7265
303	2.5146	303	2.4536	303	2.4311
303	3.1874	307	3.1282	305	3.0652
305	3.8038	311	3.7668	309	3.6476
308	4.3746	315	4.3741	313	4.1897
312	4.9073	318	4.9489	316	4.6966
315	5.4057	321	5.4848	319	5.1672
317	5.8707	324	5.9766	322	5.5980
320	6.3010	326	6.4189	325	5.9844
322	6.6931	328	6.8101	327	6.3234
324	7.0436	330	7.1512	330	6.6154
326	7.3497	333	7.4438	332	6.8628
328	7.6094	334	7.6918	334	7.0708
330	7.8220	336	7.8978	336	7.2444
332	7.9883	338	8.0632	338	7.3877
334	8.1096	340	8.1882	340	7.5031
336	8.1876	342	8.2713	342	7.5908
338	8.2231	344	8.3095	344	7.6490
339	8.2157	346	8.2993	346	7.6753
341	8.1638	347	8.2369	348	7.6670
343	8.0638	349	8.1189	350	7.6215
345	7.9114	351	7.9425	352	7.5372
347	7.7012	353	7.7053	354	7.4127
349	7.4278	355	7.4064	356	7.2467
351	7.0865	357	7.0442	358	7.0371
353	6.6739	359	6.6190	360	6.7806
355	6.1883	362	6.1303	363	6.4726
358	5.6305	364	5.5775	365	6.1077
361	5.0030	367	4.9613	367	5.6794
364	4.3097	370	4.2816	370	5.1824
368	3.5561	374	3.5398	373	4.6137
373	2.7466	379	2.7386	377	3.9741
379	1.8847	386	1.8810	381	3.2702
390	0.9707	396	0.9692	386	2.5145
399	0.0422	399	0.0642	393	1.7236
NA	NA	NA	NA	399	0.9036
NA	NA	NA	NA	399	0.1224

TIF for ELA, Grade Four

[Figure 11.A.3](#) plots TIF by theta level for grade four ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.3](#).

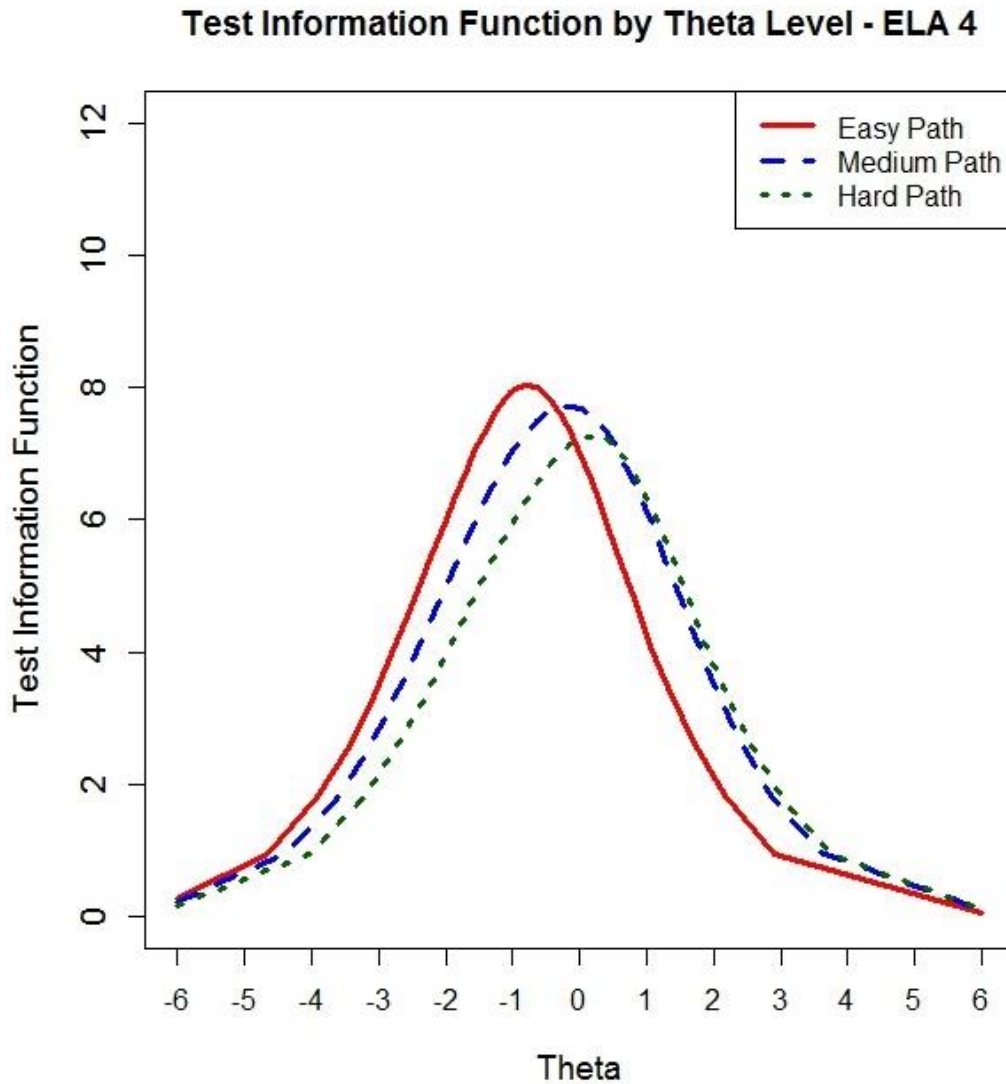


Figure 11.A.3 TIF by Theta—ELA, Grade Four

Table 11.A.3 ELA, Grade Four Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.2701	-6.0000	0.2077	-6.0000	0.1454
-4.6653	0.9488	-4.3899	0.9400	-4.0188	0.9321
-3.9169	1.8010	-3.6322	1.7731	-3.2523	1.7470
-3.4555	2.5695	-3.1625	2.5193	-2.7745	2.4697
-3.1115	3.2651	-2.8112	3.1925	-2.4154	3.1171
-2.8317	3.8977	-2.5247	3.8032	-2.1215	3.7001
-2.5925	4.4757	-2.2794	4.3580	-1.8689	4.2253
-2.3814	5.0056	-2.0623	4.8619	-1.6446	4.6972
-2.1907	5.4930	-1.8657	5.3183	-1.4407	5.1198
-2.0157	5.9409	-1.6845	5.7296	-1.2522	5.4964
-1.8528	6.3514	-1.5153	6.0974	-1.0756	5.8306
-1.6998	6.7235	-1.3555	6.4236	-0.9082	6.1266
-1.5546	7.0560	-1.2032	6.7098	-0.7483	6.3875
-1.4157	7.3458	-1.0568	6.9579	-0.5944	6.6160
-1.2817	7.5896	-0.9152	7.1693	-0.4455	6.8135
-1.1516	7.7835	-0.7773	7.3454	-0.3004	6.9799
-1.0242	7.9244	-0.6424	7.4872	-0.1584	7.1128
-0.8987	8.0097	-0.5098	7.5950	-0.0187	7.2083
-0.7740	8.0380	-0.3787	7.6686	0.1195	7.2612
-0.6494	8.0087	-0.2485	7.7069	0.2572	7.2657
-0.5238	7.9217	-0.1188	7.7083	0.3954	7.2158
-0.3964	7.7778	0.0113	7.6707	0.5350	7.1066
-0.2661	7.5776	0.1424	7.5917	0.6775	6.9341
-0.1318	7.3217	0.2753	7.4690	0.8242	6.6966
0.0078	7.0107	0.4107	7.3003	0.9770	6.3937
0.1543	6.6454	0.5498	7.0833	1.1381	6.0265
0.3097	6.2261	0.6937	6.8159	1.3102	5.5976
0.4767	5.7537	0.8440	6.4960	1.4971	5.1096
0.6590	5.2287	1.0026	6.1216	1.7040	4.5650
0.8616	4.6525	1.1720	5.6908	1.9388	3.9649
1.0924	4.0252	1.3557	5.2019	2.2143	3.3086
1.3644	3.3459	1.5588	4.6531	2.5546	2.5923
1.7016	2.6117	1.7890	4.0433	3.0130	1.8096
2.1574	1.8170	2.0593	3.3711	3.7592	0.9503
2.9017	0.9517	2.3937	2.6347	6.0000	0.1109
6.0000	0.0473	2.8456	1.8317	NA	NA
NA	NA	3.5851	0.9565	NA	NA
NA	NA	6.0000	0.0929	NA	NA

[Figure 11.A.4](#) plots TIF by scale score for grade four ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.4](#).

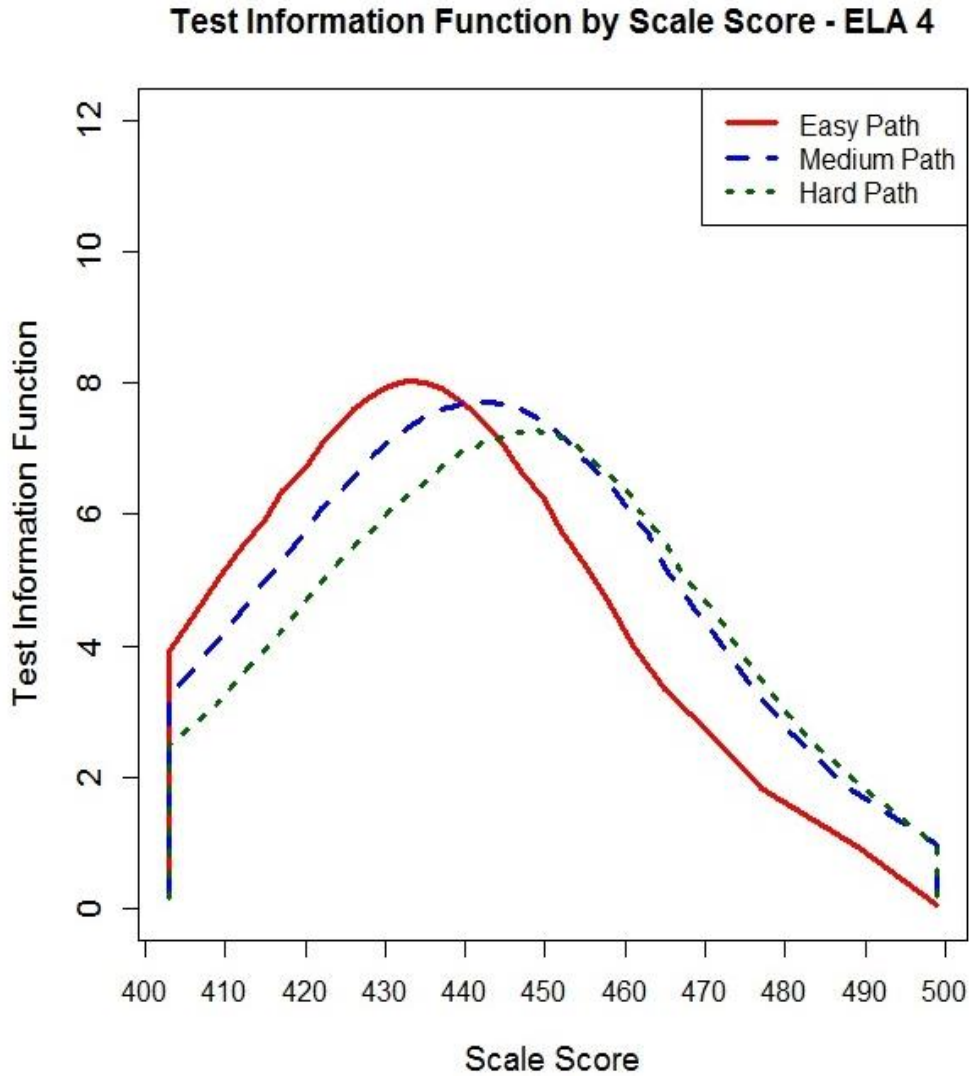


Figure 11.A.4 TIF by Scale Score—ELA, Grade Four

Table 11.A.4 ELA, Grade Four Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
403	0.2701	403	0.2077	403	0.1454
403	0.9488	403	0.9400	403	0.9321
403	1.8010	403	1.7731	403	1.7470
403	2.5695	403	2.5193	403	2.4697
403	3.2651	403	3.1925	409	3.1171
403	3.8977	407	3.8032	413	3.7001
406	4.4757	411	4.3580	417	4.2253
409	5.0056	414	4.8619	420	4.6972
412	5.4930	417	5.3183	423	5.1198
415	5.9409	420	5.7296	426	5.4964
417	6.3514	422	6.0974	429	5.8306
420	6.7235	425	6.4236	431	6.1266
422	7.0560	427	6.7098	434	6.3875
424	7.3458	429	6.9579	436	6.6160
426	7.5896	431	7.1693	438	6.8135
428	7.7835	433	7.3454	440	6.9799
430	7.9244	435	7.4872	443	7.1128
432	8.0097	437	7.5950	445	7.2083
433	8.0380	439	7.6686	447	7.2612
435	8.0087	441	7.7069	449	7.2657
437	7.9217	443	7.7083	451	7.2158
439	7.7778	445	7.6707	453	7.1066
441	7.5776	447	7.5917	455	6.9341
443	7.3217	449	7.4690	457	6.6966
445	7.0107	451	7.3003	460	6.3937
447	6.6454	453	7.0833	462	6.0265
450	6.2261	455	6.8159	465	5.5976
452	5.7537	458	6.4960	467	5.1096
455	5.2287	460	6.1216	471	4.5650
458	4.6525	463	5.6908	474	3.9649
461	4.0252	465	5.2019	478	3.3086
465	3.3459	468	4.6531	483	2.5923
471	2.6117	472	4.0433	490	1.8096
477	1.8170	476	3.3711	499	0.9503
489	0.9517	481	2.6347	499	0.1109
499	0.0473	488	1.8317	NA	NA
NA	NA	499	0.9565	NA	NA
NA	NA	499	0.0929	NA	NA

TIF for ELA, Grade Five

Figure 11.A.5 plots TIF by theta level for grade five ELA. The data used to create this graph is found in the table that immediately follows, Table 11.A.5.

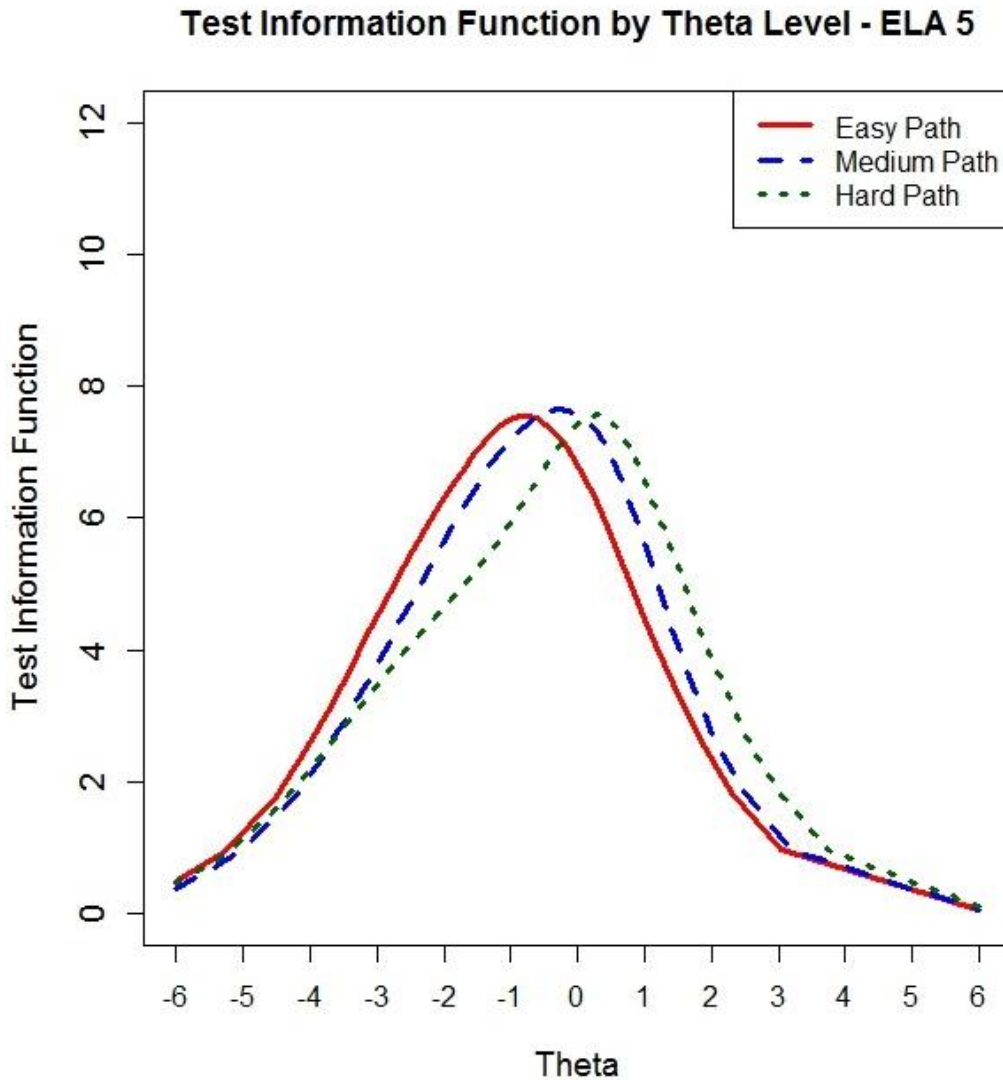


Figure 11.A.5 TIF by Theta—ELA, Grade Five

Table 11.A.5 ELA, Grade Five Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.4824	-6.0000	0.3847	-6.0000	0.4594
-5.2690	0.9424	-5.0274	0.9305	-5.2161	0.9072
-4.5128	1.7747	-4.2579	1.7342	-4.4192	1.6560
-4.0426	2.5082	-3.7748	2.4323	-3.9088	2.2796
-3.6884	3.1541	-3.4086	3.0434	-3.5146	2.8012
-3.3972	3.7224	-3.1064	3.5835	-3.1834	3.2392
-3.1453	4.2233	-2.8447	4.0665	-2.8913	3.6104
-2.9201	4.6662	-2.6111	4.5037	-2.6260	3.9301

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-2.7144	5.0594	-2.3984	4.9033	-2.3802	4.2128
-2.5233	5.4113	-2.2017	5.2718	-2.1497	4.4710
-2.3436	5.7291	-2.0178	5.6128	-1.9318	4.7156
-2.1733	6.0183	-1.8444	5.9281	-1.7248	4.9553
-2.0106	6.2835	-1.6796	6.2180	-1.5276	5.1961
-1.8544	6.5274	-1.5220	6.4821	-1.3394	5.4423
-1.7037	6.7511	-1.3705	6.7192	-1.1597	5.6951
-1.5577	6.9538	-1.2238	6.9292	-0.9878	5.9542
-1.4156	7.1336	-1.0813	7.1113	-0.8233	6.2165
-1.2769	7.2867	-0.9422	7.2659	-0.6656	6.4771
-1.1407	7.4092	-0.8057	7.3937	-0.5141	6.7290
-1.0065	7.4967	-0.6713	7.4955	-0.3679	6.9644
-0.8735	7.5451	-0.5385	7.5717	-0.2264	7.1737
-0.7410	7.5510	-0.4068	7.6217	-0.0886	7.3473
-0.6081	7.5119	-0.2757	7.6438	0.0464	7.4758
-0.4742	7.4265	-0.1447	7.6342	0.1795	7.5501
-0.3383	7.2942	-0.0133	7.5874	0.3118	7.5626
-0.1995	7.1151	0.1193	7.4960	0.4445	7.5073
-0.0566	6.8893	0.2541	7.3511	0.5789	7.3801
0.0915	6.6175	0.3921	7.1438	0.7162	7.1794
0.2464	6.2992	0.5348	6.8655	0.8582	6.9059
0.4100	5.9337	0.6844	6.5089	1.0068	6.5624
0.5847	5.5195	0.8434	6.0702	1.1641	6.1543
0.7739	5.0543	1.0156	5.5482	1.3331	5.6871
0.9827	4.5343	1.2063	4.9458	1.5175	5.1664
1.2185	3.9560	1.4236	4.2688	1.7226	4.5960
1.4941	3.3145	1.6808	3.5255	1.9562	3.9775
1.8332	2.6045	2.0024	2.7241	2.2314	3.3088
2.2891	1.8200	2.4423	1.8708	2.5721	2.5859
3.0315	0.9544	3.1711	0.9657	3.0320	1.8019
6.0000	0.0536	6.0000	0.0611	3.7817	0.9462
NA	NA	NA	NA	6.0000	0.1139

[Figure 11.A.6](#) plots TIF by scale score for grade five ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.6](#).

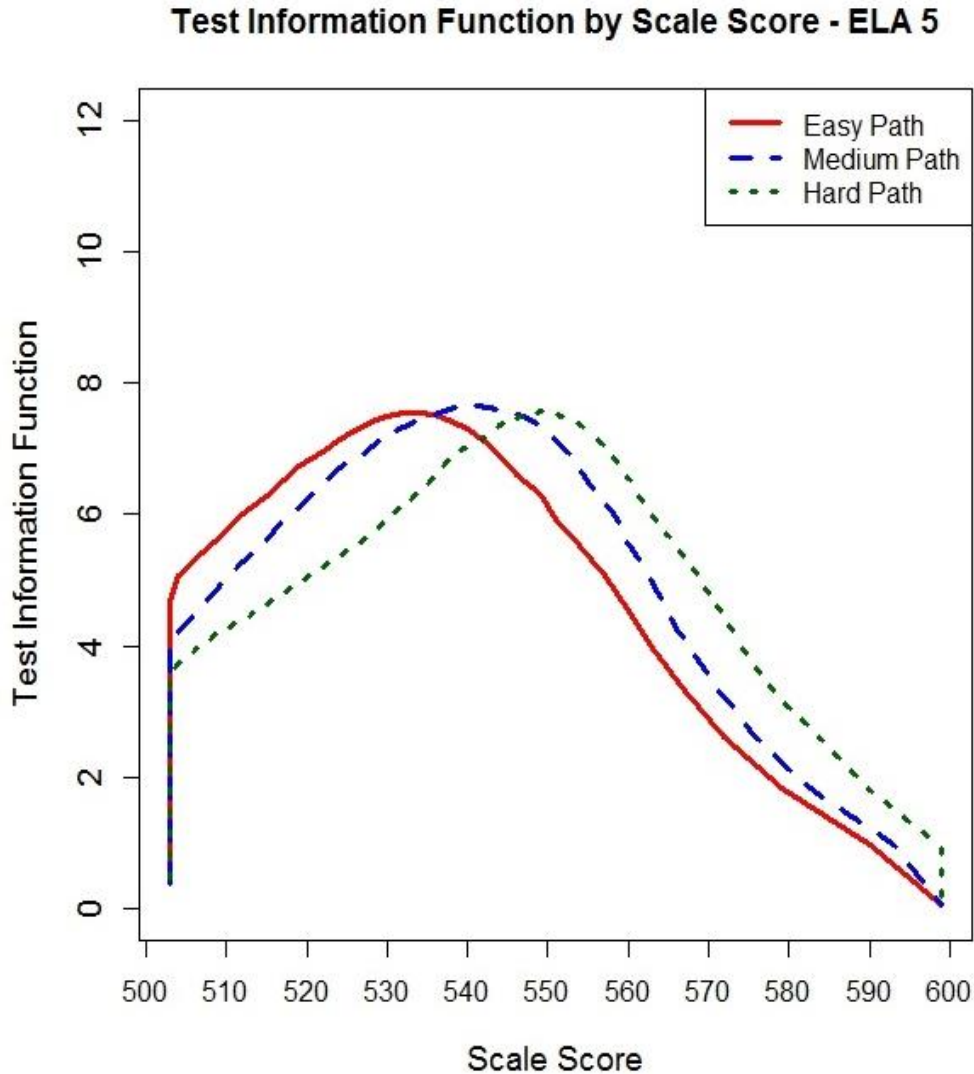


Figure 11.A.6 TIF by Scale Score—ELA, Grade Five

Table 11.A.6 ELA, Grade Five Scale Score TIF Data

Scale Score Easy	TIF- Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
503	0.4824	503	0.3847	503	0.4594
503	0.9424	503	0.9305	503	0.9072
503	1.7747	503	1.7342	503	1.6560
503	2.5082	503	2.4323	503	2.2796
503	3.1541	503	3.0434	503	2.8012
503	3.7224	503	3.5835	503	3.2392
503	4.2233	503	4.0665	503	3.6104
503	4.6662	506	4.5037	506	3.9301
504	5.0594	509	4.9033	509	4.2128

Scale Score Easy	TIF- Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
507	5.4113	512	5.2718	513	4.4710
510	5.7291	515	5.6128	516	4.7156
512	6.0183	517	5.9281	519	4.9553
515	6.2835	520	6.2180	522	5.1961
517	6.5274	522	6.4821	525	5.4423
519	6.7511	524	6.7192	528	5.6951
522	6.9538	527	6.9292	530	5.9542
524	7.1336	529	7.1113	533	6.2165
526	7.2867	531	7.2659	535	6.4771
528	7.4092	533	7.3937	537	6.7290
530	7.4967	535	7.4955	539	6.9644
532	7.5451	537	7.5717	542	7.1737
534	7.5510	539	7.6217	544	7.3473
536	7.5119	541	7.6438	546	7.4758
538	7.4265	543	7.6342	548	7.5501
540	7.2942	545	7.5874	550	7.5626
542	7.1151	547	7.4960	552	7.5073
544	6.8893	549	7.3511	554	7.3801
546	6.6175	551	7.1438	556	7.1794
549	6.2992	553	6.8655	558	6.9059
551	5.9337	555	6.5089	560	6.5624
554	5.5195	558	6.0702	562	6.1543
557	5.0543	560	5.5482	565	5.6871
560	4.5343	563	4.9458	568	5.1664
563	3.9560	566	4.2688	571	4.5960
567	3.3145	570	3.5255	574	3.9775
572	2.6045	575	2.7241	578	3.3088
579	1.8200	582	1.8708	584	2.5859
590	0.9544	593	0.9657	590	1.8019
599	0.0536	599	0.0611	599	0.9462
NA	NA	NA	NA	599	0.1139

TIF for ELA, Grade Six

[Figure 11.A.7](#) plots TIF by theta level for grade six ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.7](#).

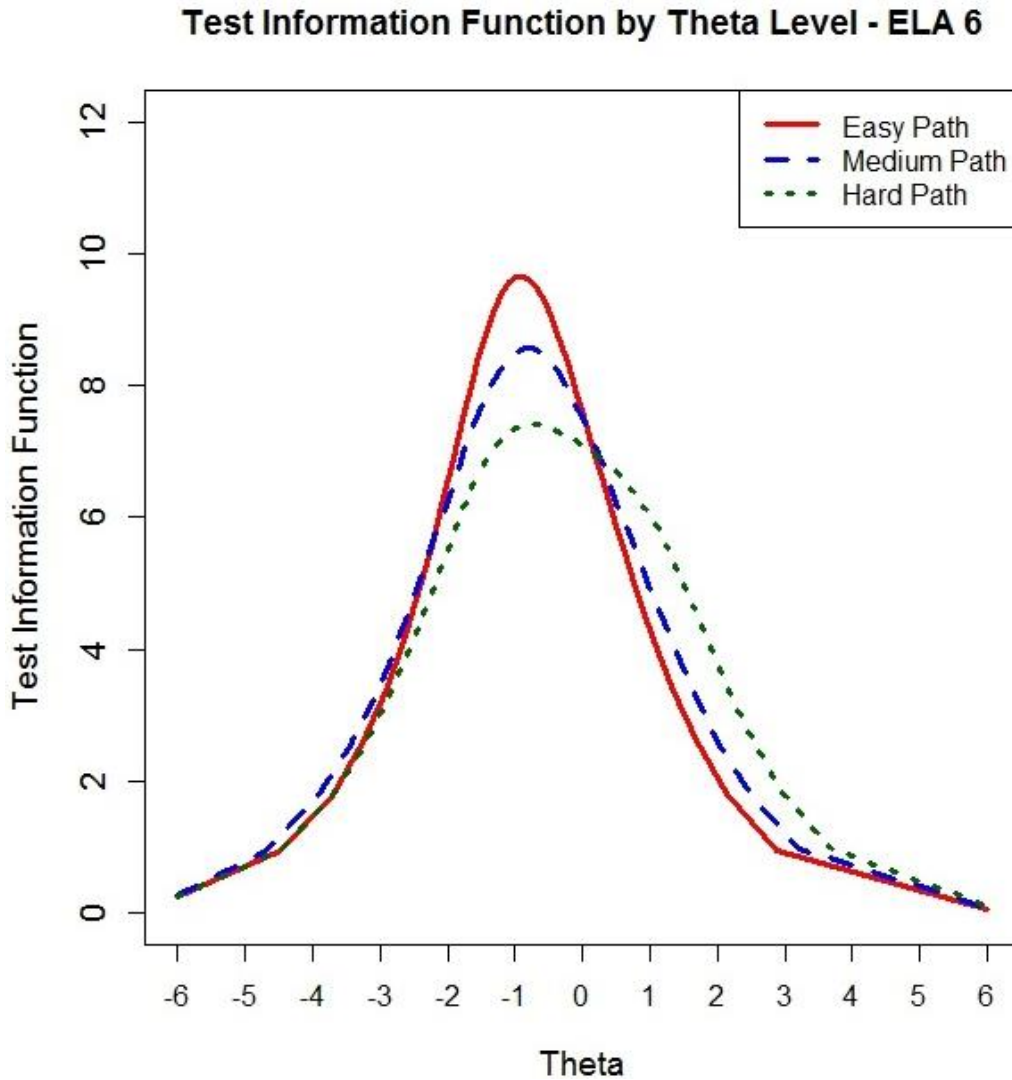


Figure 11.A.7 TIF by Theta—ELA, Grade Six

Table 11.A.7 ELA, Grade Six Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.2267	-6.0000	0.2771	-6.0000	0.2253
-4.4782	0.9382	-4.6862	0.9376	-4.4689	0.9334
-3.7215	1.7861	-3.9266	1.7700	-3.7055	1.7618
-3.2590	2.5856	-3.4570	2.5257	-3.2342	2.5197
-2.9207	3.3603	-3.1078	3.2269	-2.8846	3.2280
-2.6522	4.1204	-2.8259	3.8879	-2.6030	3.8949
-2.4290	4.8638	-2.5874	4.5165	-2.3649	4.5194
-2.2372	5.5830	-2.3794	5.1137	-2.1567	5.0952
-2.0682	6.2678	-2.1939	5.6765	-1.9698	5.6140
-1.9163	6.9073	-2.0253	6.2001	-1.7986	6.0679
-1.7773	7.4926	-1.8699	6.6781	-1.6388	6.4526
-1.6483	8.0159	-1.7248	7.1057	-1.4875	6.7663
-1.5269	8.4719	-1.5876	7.4798	-1.3423	7.0115
-1.4115	8.8560	-1.4566	7.7987	-1.2015	7.1923
-1.3005	9.1661	-1.3305	8.0617	-1.0636	7.3152
-1.1928	9.4006	-1.2080	8.2697	-0.9275	7.3874
-1.0873	9.5595	-1.0882	8.4232	-0.7924	7.4162
-0.9831	9.6433	-0.9701	8.5232	-0.6574	7.4094
-0.8794	9.6538	-0.8531	8.5703	-0.5221	7.3743
-0.7755	9.5934	-0.7363	8.5653	-0.3859	7.3179
-0.6705	9.4654	-0.6192	8.5089	-0.2485	7.2459
-0.5638	9.2739	-0.5009	8.4023	-0.1096	7.1627
-0.4545	9.0234	-0.3807	8.2472	0.0310	7.0707
-0.3417	8.7182	-0.2579	8.0460	0.1736	6.9696
-0.2245	8.3631	-0.1316	7.8015	0.3183	6.8572
-0.1020	7.9630	-0.0010	7.5170	0.4656	6.7279
0.0273	7.5207	0.1350	7.1953	0.6160	6.5743
0.1647	7.0398	0.2776	6.8388	0.7704	6.3870
0.3123	6.5214	0.4282	6.4490	0.9299	6.1555
0.4726	5.9664	0.5886	6.0259	1.0962	5.8694
0.6492	5.3743	0.7613	5.5677	1.2719	5.5187
0.8472	4.7442	0.9494	5.0717	1.4603	5.0963
1.0744	4.0750	1.1579	4.5327	1.6667	4.5968
1.3440	3.3646	1.3941	3.9451	1.8990	4.0188
1.6803	2.6105	1.6707	3.3014	2.1704	3.3633
2.1375	1.8077	2.0112	2.5939	2.5052	2.6332
2.8866	0.9455	2.4687	1.8141	2.9573	1.8310
6.0000	0.0470	3.2130	0.9526	3.6971	0.9560
NA	NA	6.0000	0.0644	6.0000	0.1038

[Figure 11.A.8](#) plots TIF by scale score for grade six ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.8](#).

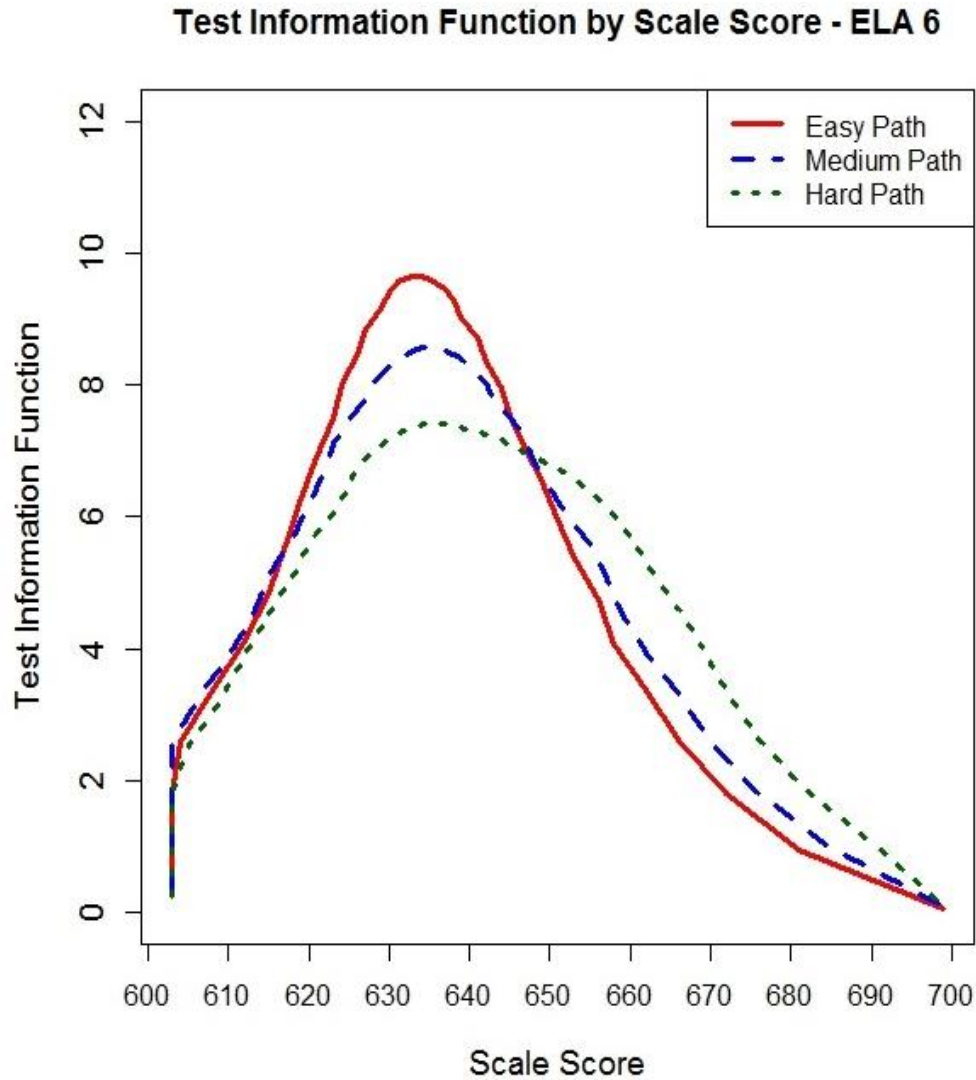


Figure 11.A.8 TIF by Scale Score—ELA, Grade Six

Table 11.A.8 ELA, Grade Six Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
603	0.2267	603	0.2771	603	0.2253
603	0.9382	603	0.9376	603	0.9334
603	1.7861	603	1.7700	603	1.7618
604	2.5856	603	2.5257	605	2.5197
608	3.3603	606	3.2269	609	3.2280
612	4.1204	610	3.8879	612	3.8949
615	4.8638	613	4.5165	615	4.5194
617	5.5830	615	5.1137	618	5.0952
619	6.2678	618	5.6765	620	5.6140
621	6.9073	620	6.2001	623	6.0679
623	7.4926	622	6.6781	625	6.4526
624	8.0159	623	7.1057	626	6.7663
626	8.4719	625	7.4798	628	7.0115
627	8.8560	627	7.7987	630	7.1923
629	9.1661	628	8.0617	632	7.3152
630	9.4006	630	8.2697	633	7.3874
631	9.5595	631	8.4232	635	7.4162
633	9.6433	633	8.5232	637	7.4094
634	9.6538	634	8.5703	638	7.3743
635	9.5934	636	8.5653	640	7.3179
637	9.4654	637	8.5089	642	7.2459
638	9.2739	639	8.4023	644	7.1627
639	9.0234	640	8.2472	645	7.0707
641	8.7182	642	8.0460	647	6.9696
642	8.3631	643	7.8015	649	6.8572
644	7.9630	645	7.5170	651	6.7279
645	7.5207	647	7.1953	653	6.5743
647	7.0398	648	6.8388	655	6.3870
649	6.5214	650	6.4490	657	6.1555
651	5.9664	652	6.0259	659	5.8694
653	5.3743	655	5.5677	661	5.5187
656	4.7442	657	5.0717	663	5.0963
658	4.0750	659	4.5327	666	4.5968
662	3.3646	662	3.9451	669	4.0188
666	2.6105	666	3.3014	672	3.3633
672	1.8077	670	2.5939	676	2.6332
681	0.9455	676	1.8141	682	1.8310
699	0.0470	685	0.9526	691	0.9560
NA	NA	699	0.0644	699	0.1038

TIF for ELA, Grade Seven

[Figure 11.A.9](#) plots TIF by theta level for grade seven ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.9](#).

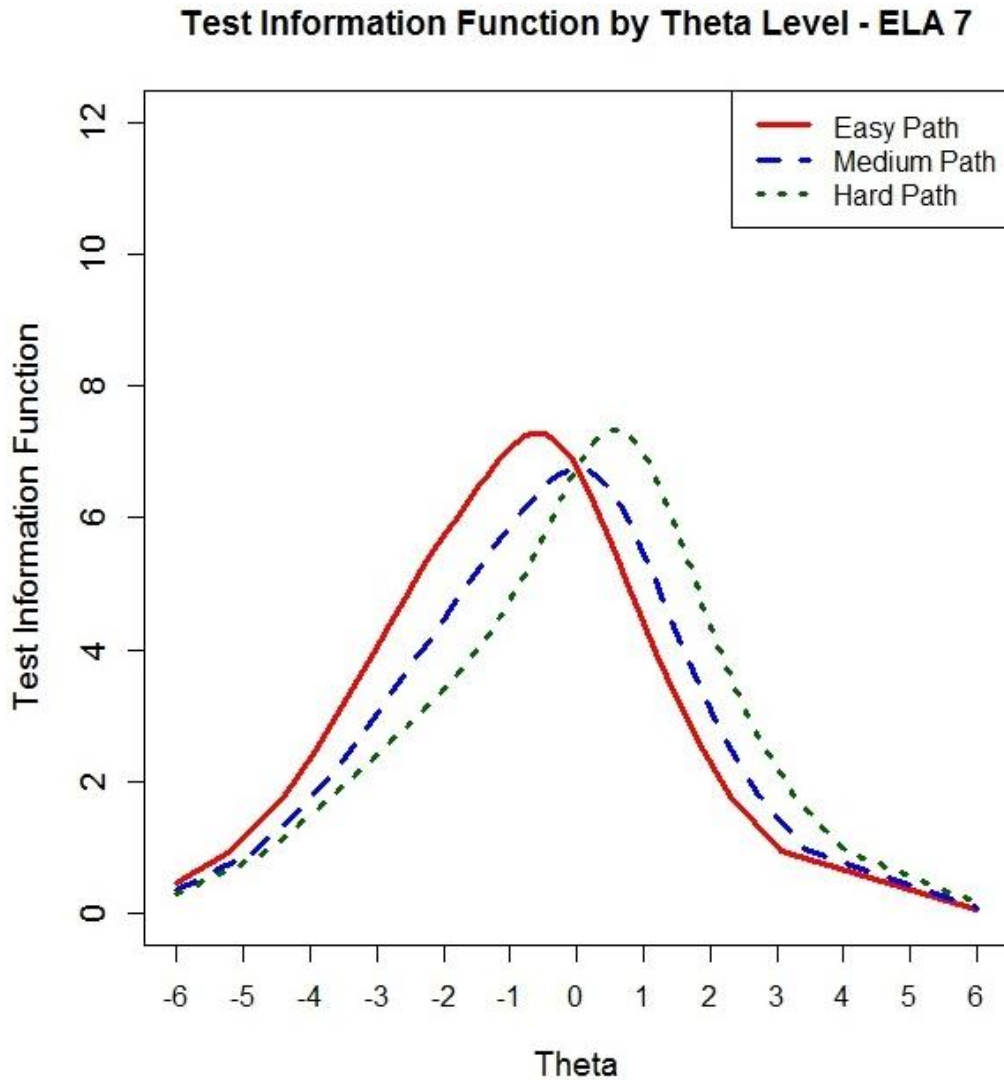


Figure 11.A.9 TIF by Theta—ELA, Grade Seven

Table 11.A.9 ELA, Grade Seven Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.4470	-6.0000	0.3354	-6.0000	0.2949
-5.1874	0.9297	-4.8725	0.9020	-4.7227	0.8766
-4.4173	1.7333	-4.0698	1.6422	-3.8857	1.5497
-3.9341	2.4322	-3.5552	2.2638	-3.3329	2.0760
-3.5679	3.0425	-3.1593	2.7971	-2.8956	2.5011
-3.2654	3.5772	-2.8289	3.2638	-2.5224	2.8619
-3.0029	4.0472	-2.5406	3.6791	-2.1915	3.1886
-2.7677	4.4624	-2.2818	4.0541	-1.8922	3.5043
-2.5524	4.8312	-2.0449	4.3971	-1.6189	3.8247
-2.3521	5.1620	-1.8252	4.7138	-1.3679	4.1592
-2.1638	5.4617	-1.6194	5.0084	-1.1369	4.5104
-1.9850	5.7371	-1.4249	5.2840	-0.9235	4.8770
-1.8144	5.9930	-1.2400	5.5421	-0.7258	5.2530
-1.6507	6.2331	-1.0633	5.7833	-0.5418	5.6300
-1.4930	6.4585	-0.8936	6.0066	-0.3697	5.9967
-1.3406	6.6679	-0.7298	6.2099	-0.2075	6.3414
-1.1926	6.8579	-0.5710	6.3895	-0.0535	6.6515
-1.0485	7.0222	-0.4162	6.5404	0.0940	6.9151
-0.9073	7.1537	-0.2646	6.6559	0.2365	7.1218
-0.7684	7.2441	-0.1152	6.7287	0.3755	7.2634
-0.6307	7.2859	0.0332	6.7509	0.5125	7.3336
-0.4933	7.2728	0.1818	6.7152	0.6489	7.3283
-0.3551	7.2001	0.3318	6.6150	0.7862	7.2452
-0.2149	7.0651	0.4849	6.4458	0.9257	7.0835
-0.0713	6.8671	0.6430	6.2050	1.0693	6.8434
0.0771	6.6073	0.8083	5.8923	1.2189	6.5262
0.2323	6.2872	0.9838	5.5088	1.3769	6.1347
0.3963	5.9103	1.1731	5.0574	1.5463	5.6731
0.5720	5.4793	1.3816	4.5403	1.7313	5.1464
0.7630	4.9970	1.6172	3.9590	1.9375	4.5616
0.9746	4.4645	1.8927	3.3135	2.1736	3.9255
1.2145	3.8818	2.2321	2.6011	2.4533	3.2446
1.4957	3.2459	2.6887	1.8168	2.8018	2.5222
1.8420	2.5512	3.4324	0.9530	3.2740	1.7551
2.3068	1.7882	6.0000	0.0800	4.0414	0.9278
3.0599	0.9440	NA	NA	6.0000	0.1495
6.0000	0.0558	NA	NA	NA	NA

[Figure 11.A.10](#) plots TIF by scale score for grade seven ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.10](#).

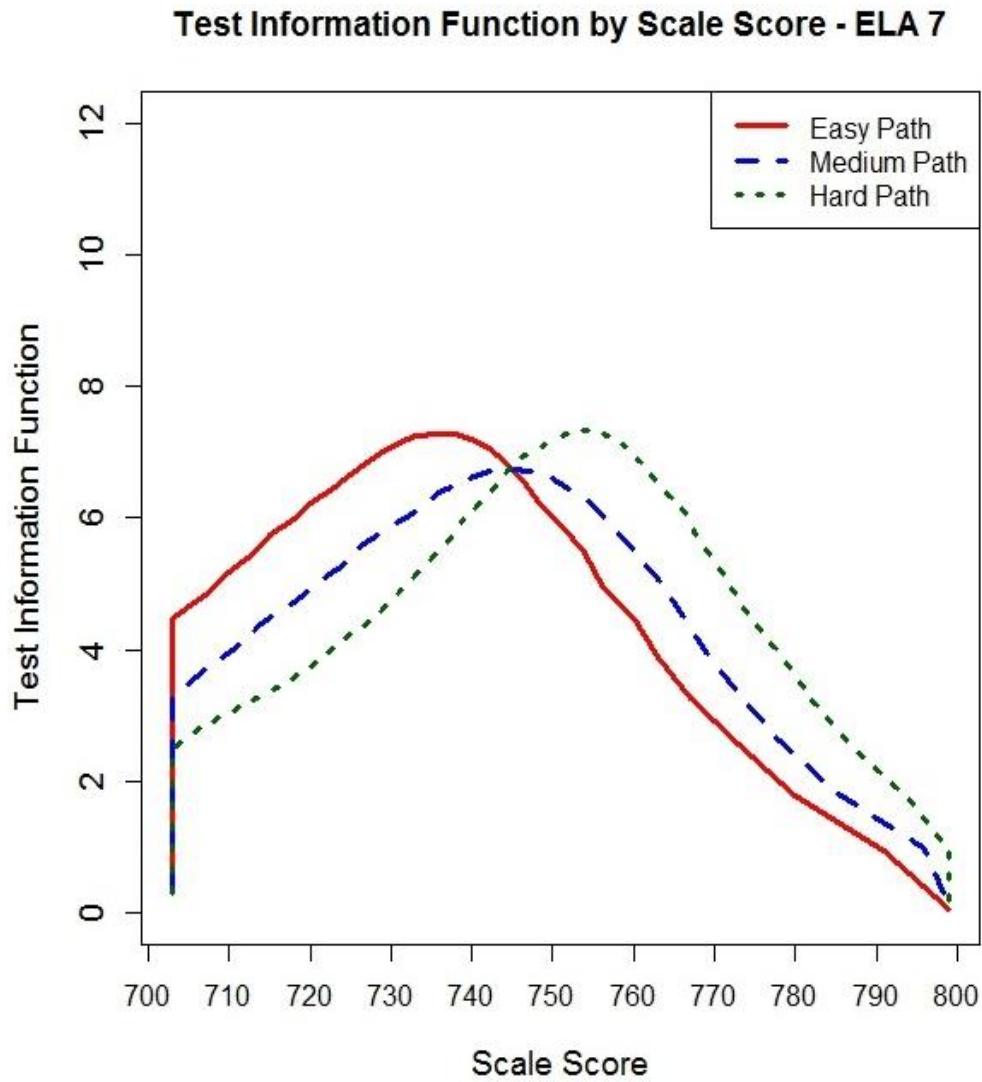


Figure 11.A.10 TIF by Scale Score—ELA, Grade Seven

Table 11.A.10 ELA, Grade Seven Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
703	0.4470	703	0.3354	703	0.2949
703	0.9297	703	0.9020	703	0.8766
703	1.7333	703	1.6422	703	1.5497
703	2.4322	703	2.2638	703	2.0760
703	3.0425	703	2.7971	703	2.5011
703	3.5772	703	3.2638	707	2.8619
703	4.0472	707	3.6791	712	3.1886
703	4.4624	711	4.0541	717	3.5043
707	4.8312	714	4.3971	721	3.8247
710	5.1620	718	4.7138	724	4.1592
713	5.4617	721	5.0084	728	4.5104
715	5.7371	724	5.2840	731	4.8770
718	5.9930	726	5.5421	734	5.2530
720	6.2331	729	5.7833	737	5.6300
723	6.4585	732	6.0066	739	5.9967
725	6.6679	734	6.2099	742	6.3414
727	6.8579	736	6.3895	744	6.6515
729	7.0222	739	6.5404	746	6.9151
731	7.1537	741	6.6559	749	7.1218
733	7.2441	743	6.7287	751	7.2634
736	7.2859	745	6.7509	753	7.3336
738	7.2728	748	6.7152	755	7.3283
740	7.2001	750	6.6150	757	7.2452
742	7.0651	752	6.4458	759	7.0835
744	6.8671	755	6.2050	761	6.8434
746	6.6073	757	5.8923	763	6.5262
748	6.2872	760	5.5088	766	6.1347
751	5.9103	763	5.0574	768	5.6731
754	5.4793	766	4.5403	771	5.1464
756	4.9970	769	3.9590	774	4.5616
760	4.4645	773	3.3135	778	3.9255
763	3.8818	778	2.6011	782	3.2446
767	3.2459	785	1.8168	787	2.5222
773	2.5512	796	0.9530	794	1.7551
780	1.7882	799	0.0800	799	0.9278
791	0.9440	NA	NA	799	0.1495
799	0.0558	NA	NA	NA	NA

TIF for ELA, Grade Eight

[Figure 11.A.11](#) plots TIF by theta level for grade eight ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.11](#).

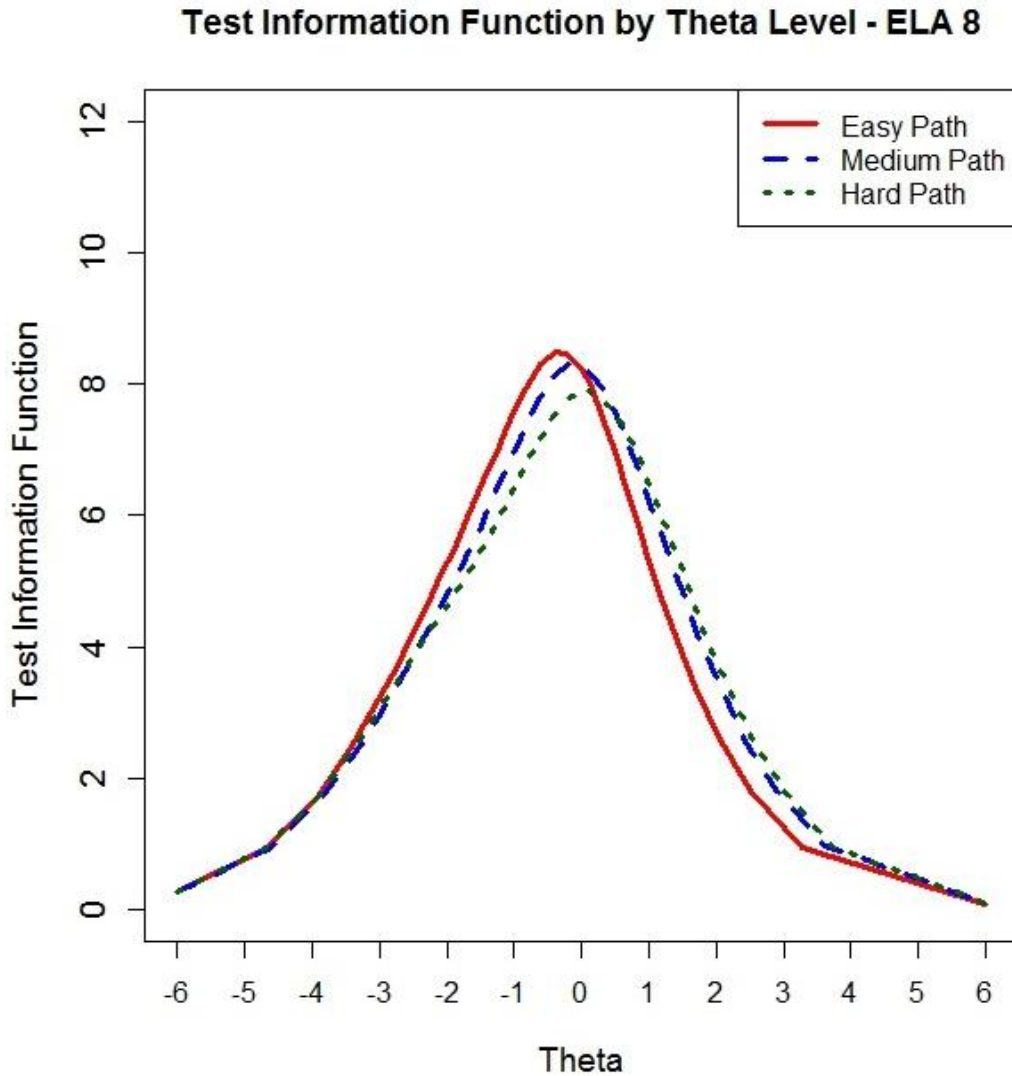


Figure 11.A.11 TIF by Theta—ELA, Grade Eight

Table 11.A.11 ELA, Grade Eight Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.2716	-6.0000	0.2565	-6.0000	0.2761
-4.6641	0.9354	-4.6008	0.9278	-4.6778	0.9284
-3.9004	1.7525	-3.8280	1.7239	-3.9050	1.7221
-3.4235	2.4704	-3.3414	2.4112	-3.4170	2.3983
-3.0638	3.1059	-2.9716	3.0103	-3.0441	2.9742
-2.7683	3.6739	-2.6658	3.5405	-2.7333	3.4672
-2.5136	4.1874	-2.4009	4.0189	-2.4615	3.8949
-2.2873	4.6581	-2.1648	4.4605	-2.2165	4.2750
-2.0820	5.0961	-1.9504	4.8778	-1.9916	4.6241
-1.8933	5.5089	-1.7533	5.2797	-1.7826	4.9571
-1.7178	5.9030	-1.5705	5.6716	-1.5871	5.2846
-1.5536	6.2812	-1.3998	6.0554	-1.4034	5.6131
-1.3987	6.6451	-1.2394	6.4292	-1.2302	5.9438
-1.2519	6.9928	-1.0880	6.7883	-1.0663	6.2733
-1.1121	7.3203	-0.9441	7.1263	-0.9107	6.5942
-0.9782	7.6220	-0.8067	7.4350	-0.7624	6.8972
-0.8492	7.8910	-0.6746	7.7067	-0.6202	7.1727
-0.7242	8.1192	-0.5467	7.9339	-0.4830	7.4119
-0.6024	8.2985	-0.4220	8.1102	-0.3498	7.6075
-0.4827	8.4217	-0.2996	8.2304	-0.2196	7.7543
-0.3644	8.4817	-0.1785	8.2912	-0.0914	7.8486
-0.2464	8.4733	-0.0578	8.2905	0.0358	7.8881
-0.1278	8.3926	0.0633	8.2278	0.1627	7.8712
-0.0076	8.2378	0.1857	8.1039	0.2904	7.7970
0.1155	8.0085	0.3106	7.9201	0.4197	7.6647
0.2428	7.7065	0.4388	7.6791	0.5519	7.4736
0.3758	7.3356	0.5716	7.3834	0.6880	7.2239
0.5164	6.9008	0.7104	7.0359	0.8295	6.9161
0.6667	6.4093	0.8567	6.6400	0.9780	6.5522
0.8297	5.8678	1.0126	6.1982	1.1357	6.1342
1.0093	5.2831	1.1806	5.7128	1.3053	5.6652
1.2107	4.6613	1.3643	5.1847	1.4904	5.1478
1.4420	4.0052	1.5687	4.6133	1.6962	4.5835
1.7160	3.3145	1.8013	3.9967	1.9303	3.9722
2.0567	2.5831	2.0750	3.3298	2.2056	3.3107
2.5173	1.7995	2.4132	2.6067	2.5457	2.5931
3.2674	0.9462	2.8693	1.8178	3.0039	1.8103
6.0000	0.0684	3.6128	0.9530	3.7498	0.9507
NA	NA	6.0000	0.0957	6.0000	0.1099

[Figure 11.A.12](#) plots TIF by scale score for grade eight ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.12](#).

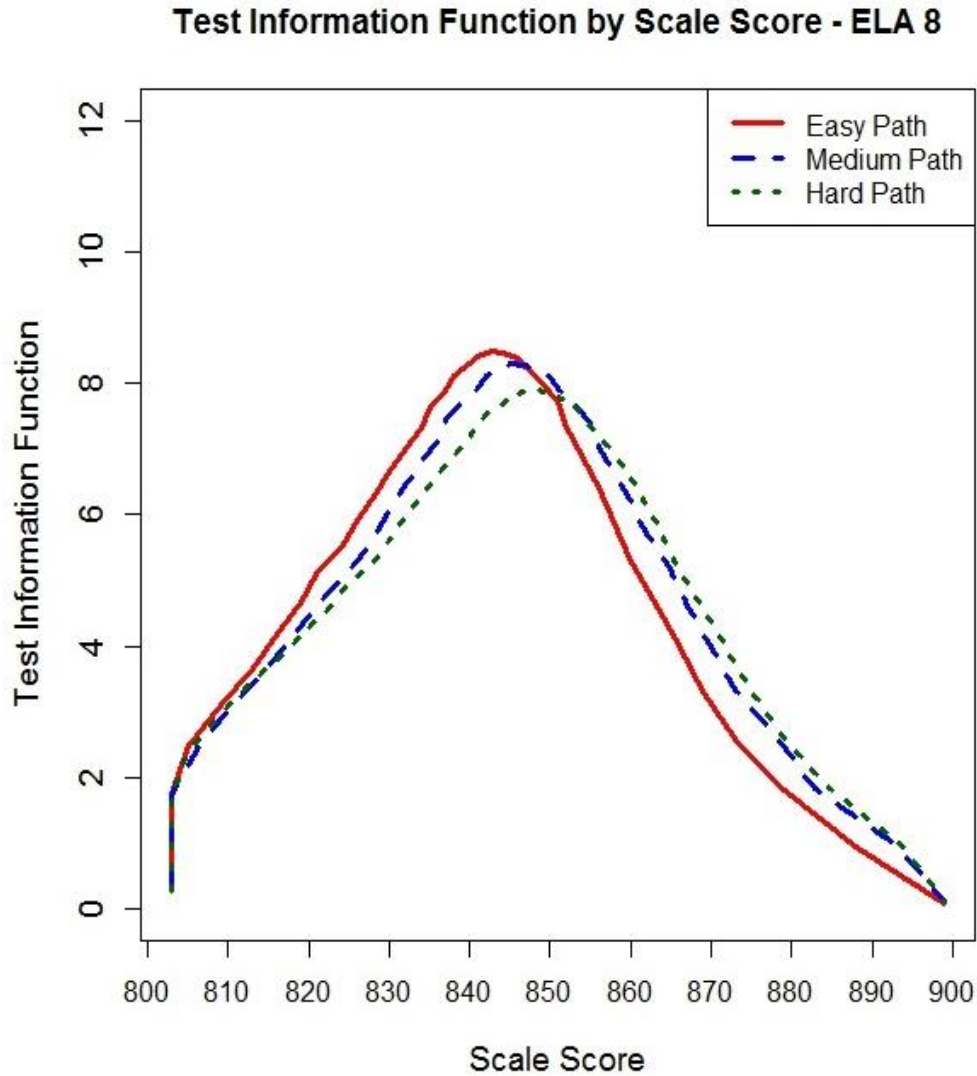


Figure 11.A.12 TIF by Scale Score—ELA, Grade Eight

Table 11.A.12 ELA, Grade Eight Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
803	0.2716	803	0.2565	803	0.2761
803	0.9354	803	0.9278	803	0.9284
803	1.7525	803	1.7239	803	1.7221
805	2.4704	806	2.4112	805	2.3983
809	3.1059	810	3.0103	809	2.9742
813	3.6739	814	3.5405	813	3.4672
816	4.1874	817	4.0189	817	3.8949
819	4.6581	820	4.4605	820	4.2750
821	5.0961	823	4.8778	823	4.6241
824	5.5089	826	5.2797	825	4.9571
826	5.9030	828	5.6716	828	5.2846
828	6.2812	830	6.0554	830	5.6131
830	6.6451	832	6.4292	832	5.9438
832	6.9928	834	6.7883	834	6.2733
834	7.3203	836	7.1263	836	6.5942
835	7.6220	837	7.4350	838	6.8972
837	7.8910	839	7.7067	840	7.1727
838	8.1192	841	7.9339	841	7.4119
840	8.2985	842	8.1102	843	7.6075
841	8.4217	844	8.2304	845	7.7543
843	8.4817	845	8.2912	846	7.8486
844	8.4733	847	8.2905	848	7.8881
846	8.3926	848	8.2278	850	7.8712
847	8.2378	850	8.1039	851	7.7970
849	8.0085	851	7.9201	853	7.6647
851	7.7065	853	7.6791	854	7.4736
852	7.3356	855	7.3834	856	7.2239
854	6.9008	856	7.0359	858	6.9161
856	6.4093	858	6.6400	860	6.5522
858	5.8678	860	6.1982	862	6.1342
860	5.2831	862	5.7128	864	5.6652
863	4.6613	865	5.1847	866	5.1478
866	4.0052	867	4.6133	869	4.5835
869	3.3145	870	3.9967	872	3.9722
873	2.5831	873	3.3298	875	3.3107
879	1.7995	878	2.6067	879	2.5931
888	0.9462	883	1.8178	885	1.8103
899	0.0684	893	0.9530	894	0.9507
NA	NA	899	0.0957	899	0.1099

TIF for ELA, Grade Eleven

[Figure 11.A.13](#) plots TIF by theta level for grade eleven ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.13](#).

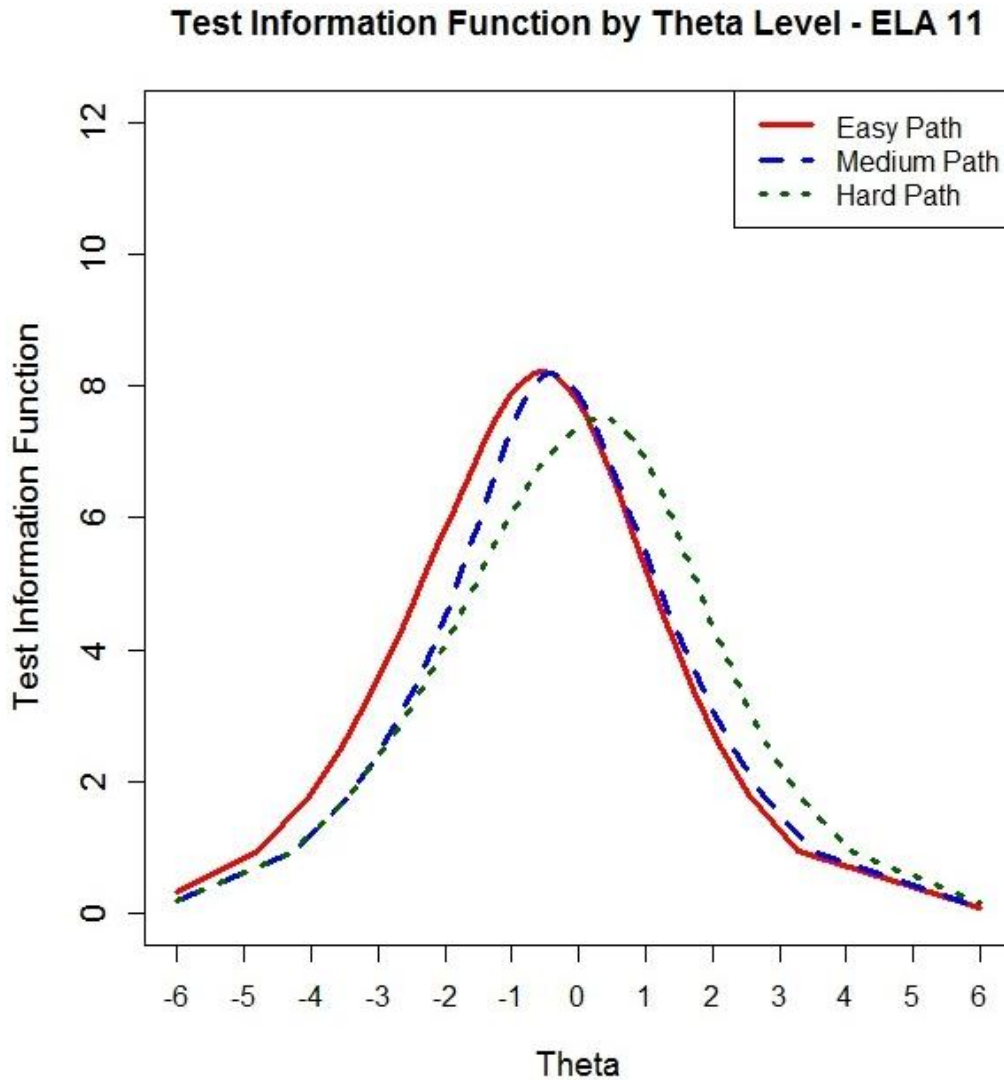


Figure 11.A.13 TIF by Theta—ELA, Grade Eleven

Table 11.A.13 ELA, Grade Eleven Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.3047	-6.0000	0.1854	-6.0000	0.1923
-4.7857	0.9395	-4.2587	0.9202	-4.2935	0.9156
-4.0268	1.7678	-3.4796	1.7133	-3.5073	1.6880
-3.5550	2.5024	-2.9922	2.4225	-3.0095	2.3549
-3.2006	3.1591	-2.6270	3.0786	-2.6311	2.9460
-2.9106	3.7513	-2.3312	3.7005	-2.3194	3.4840
-2.6616	4.2904	-2.0806	4.2989	-2.0512	3.9832
-2.4410	4.7861	-1.8622	4.8763	-1.8138	4.4516
-2.2415	5.2455	-1.6679	5.4300	-1.5995	4.8905
-2.0582	5.6738	-1.4921	5.9540	-1.4030	5.2974
-1.8878	6.0742	-1.3306	6.4407	-1.2205	5.6684
-1.7280	6.4472	-1.1804	6.8816	-1.0491	6.0003
-1.5768	6.7923	-1.0390	7.2687	-0.8863	6.2929
-1.4328	7.1071	-0.9044	7.5951	-0.7305	6.5477
-1.2948	7.3885	-0.7749	7.8550	-0.5802	6.7684
-1.1616	7.6335	-0.6491	8.0444	-0.4344	6.9591
-1.0323	7.8386	-0.5257	8.1609	-0.2924	7.1230
-0.9060	8.0011	-0.4035	8.2040	-0.1532	7.2620
-0.7819	8.1187	-0.2814	8.1750	-0.0165	7.3748
-0.6592	8.1894	-0.1583	8.0769	0.1184	7.4583
-0.5372	8.2118	-0.0332	7.9144	0.2520	7.5071
-0.4152	8.1849	0.0949	7.6935	0.3852	7.5147
-0.2924	8.1077	0.2273	7.4206	0.5187	7.4741
-0.1681	7.9797	0.3651	7.1023	0.6534	7.3789
-0.0413	7.8002	0.5096	6.7450	0.7903	7.2244
0.0889	7.5691	0.6624	6.3529	0.9309	7.0072
0.2236	7.2870	0.8254	5.9287	1.0765	6.7269
0.3641	6.9546	1.0009	5.4731	1.2291	6.3848
0.5120	6.5735	1.1924	4.9831	1.3908	5.9845
0.6693	6.1451	1.4045	4.4548	1.5646	5.5298
0.8387	5.6709	1.6448	3.8810	1.7543	5.0251
1.0236	5.1519	1.9257	3.2536	1.9651	4.4738
1.2292	4.5876	2.2707	2.5631	2.2049	3.8772
1.4631	3.9764	2.7330	1.7984	2.4869	3.2331
1.7380	3.3146	3.4821	0.9482	2.8349	2.5366
2.0778	2.5958	6.0000	0.0844	3.3024	1.7776
2.5356	1.8116	NA	NA	4.0595	0.9399
3.2811	0.9511	NA	NA	6.0000	0.1504
6.0000	0.0690	NA	NA	NA	NA

[Figure 11.A.14](#) plots TIF by scale score for grade eleven ELA. The data used to create this graph is found in the table that immediately follows, [Table 11.A.14](#).

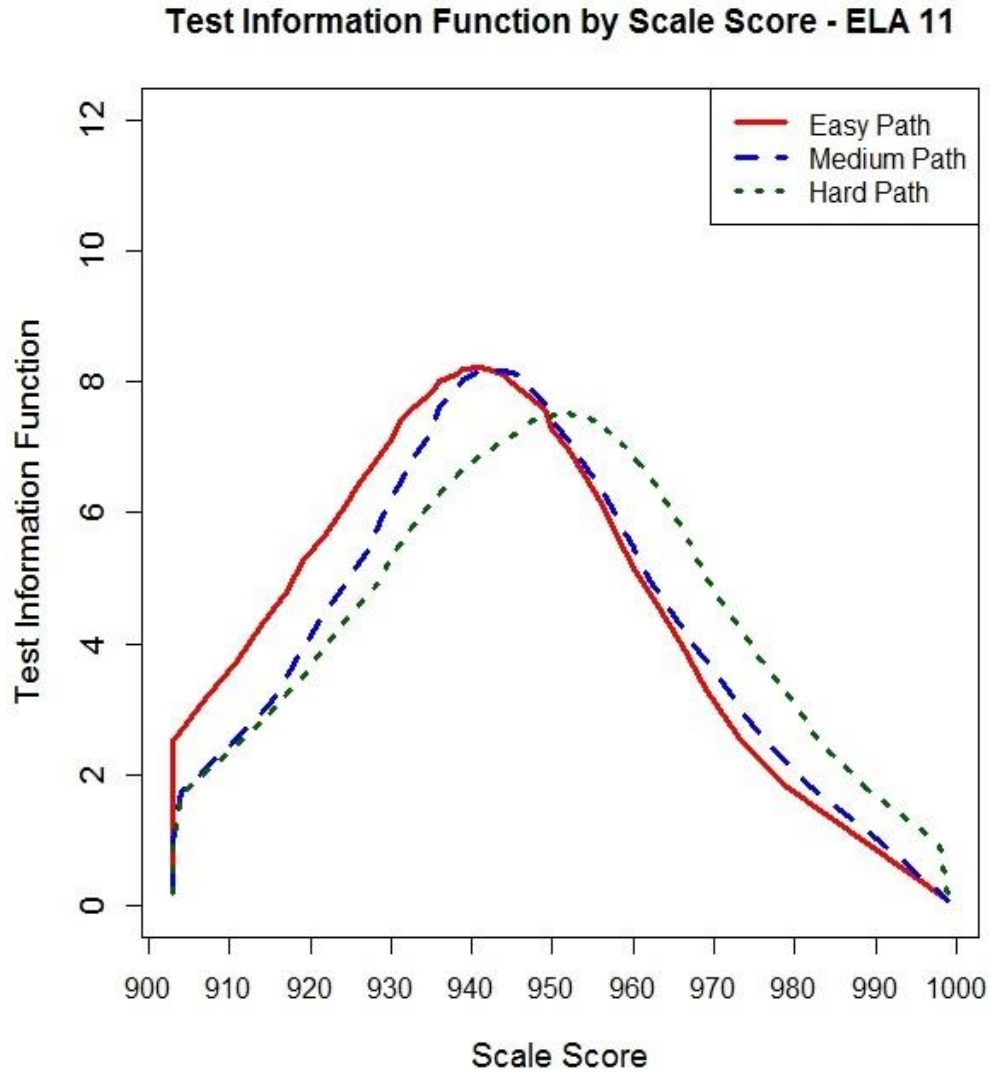


Figure 11.A.14 TIF by Scale Score—ELA, Grade Eleven

Table 11.A.14 ELA, Grade Eleven Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
903	0.3047	903	0.1854	903	0.1923
903	0.9395	903	0.9202	903	0.9156
903	1.7678	904	1.7133	904	1.6880
903	2.5024	910	2.4225	910	2.3549
907	3.1591	915	3.0786	915	2.9460
911	3.7513	918	3.7005	919	3.4840
914	4.2904	921	4.2989	922	3.9832
917	4.7861	924	4.8763	925	4.4516
919	5.2455	927	5.4300	928	4.8905
922	5.6738	929	5.9540	930	5.2974
924	6.0742	931	6.4407	932	5.6684
926	6.4472	933	6.8816	934	6.0003
928	6.7923	935	7.2687	936	6.2929
930	7.1071	936	7.5951	938	6.5477
931	7.3885	938	7.8550	940	6.7684
933	7.6335	939	8.0444	942	6.9591
935	7.8386	941	8.1609	944	7.1230
936	8.0011	942	8.2040	946	7.2620
938	8.1187	944	8.1750	947	7.3748
939	8.1894	946	8.0769	949	7.4583
941	8.2118	947	7.9144	951	7.5071
942	8.1849	949	7.6935	952	7.5147
944	8.1077	950	7.4206	954	7.4741
945	7.9797	952	7.1023	956	7.3789
947	7.8002	954	6.7450	957	7.2244
949	7.5691	956	6.3529	959	7.0072
950	7.2870	958	5.9287	961	6.7269
952	6.9546	960	5.4731	963	6.3848
954	6.5735	962	4.9831	965	5.9845
956	6.1451	965	4.4548	967	5.5298
958	5.6709	968	3.8810	969	5.0251
960	5.1519	972	3.2536	972	4.4738
963	4.5876	976	2.5631	975	3.8772
966	3.9764	982	1.7984	979	3.2331
969	3.3146	991	0.9482	983	2.5366
973	2.5958	999	0.0844	989	1.7776
979	1.8116	NA	NA	998	0.9399
989	0.9511	NA	NA	999	0.1504
999	0.0690	NA	NA	NA	NA

TIF for Mathematics, Grade Three

[Figure 11.A.15](#) plots TIF by theta level for grade three mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.15](#).

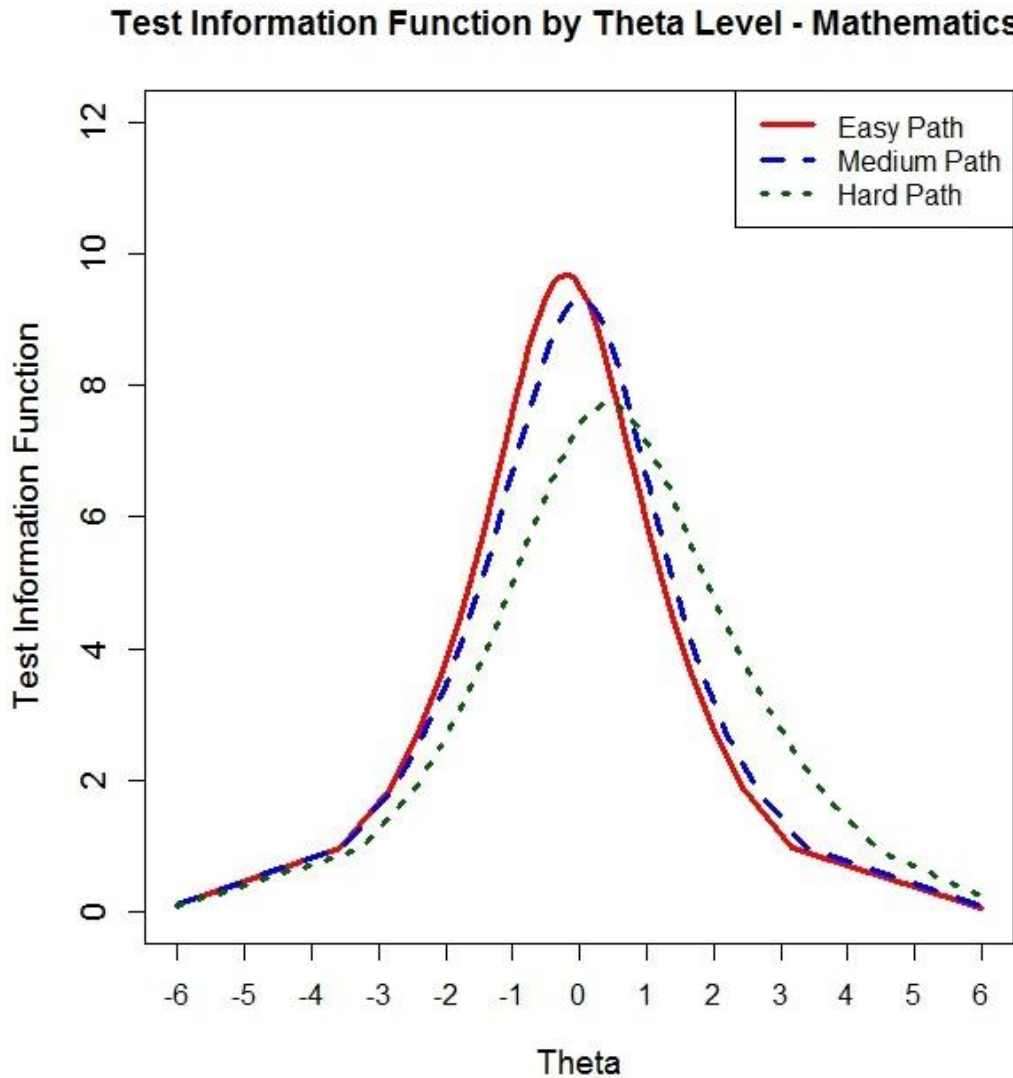


Figure 11.A.15 TIF by Theta—Mathematics, Grade Three

Table 11.A.15 Mathematics, Grade Three Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.0918	-6.0000	0.0889	-6.0000	0.0701
-3.5793	0.9635	-3.5404	0.9558	-3.2852	0.9397
-2.8481	1.8628	-2.8005	1.8317	-2.5273	1.7736
-2.4062	2.7129	-2.3492	2.6440	-2.0583	2.5269
-2.0838	3.5247	-2.0170	3.4058	-1.7089	3.2201
-1.8275	4.3047	-1.7507	4.1273	-1.4260	3.8674
-1.6133	5.0549	-1.5266	4.8146	-1.1858	4.4753
-1.4283	5.7729	-1.3318	5.4707	-0.9754	5.0436
-1.2645	6.4537	-1.1587	6.0938	-0.7868	5.5678
-1.1167	7.0897	-1.0019	6.6812	-0.6144	6.0424
-0.9811	7.6731	-0.8580	7.2263	-0.4544	6.4616
-0.8550	8.1951	-0.7242	7.7224	-0.3038	6.8220
-0.7362	8.6483	-0.5982	8.1631	-0.1604	7.1219
-0.6231	9.0255	-0.4784	8.5414	-0.0222	7.3614
-0.5140	9.3221	-0.3634	8.8511	0.1120	7.5405
-0.4080	9.5334	-0.2519	9.0873	0.2436	7.6596
-0.3037	9.6574	-0.1428	9.2460	0.3737	7.7182
-0.2004	9.6929	-0.0351	9.3242	0.5033	7.7154
-0.0969	9.6404	0.0722	9.3198	0.6334	7.6502
0.0076	9.5016	0.1800	9.2319	0.7653	7.5217
0.1141	9.2795	0.2893	9.0605	0.8999	7.3307
0.2236	8.9781	0.4013	8.8062	1.0388	7.0789
0.3374	8.6019	0.5170	8.4715	1.1832	6.7709
0.4568	8.1564	0.6380	8.0591	1.3350	6.4124
0.5834	7.6473	0.7660	7.5731	1.4961	6.0111
0.7193	7.0805	0.9032	7.0192	1.6688	5.5751
0.8671	6.4617	1.0523	6.4046	1.8562	5.1109
1.0305	5.7960	1.2172	5.7371	2.0619	4.6238
1.2145	5.0884	1.4033	5.0250	2.2911	4.1146
1.4271	4.3413	1.6188	4.2761	2.5515	3.5799
1.6811	3.5572	1.8771	3.4959	2.8556	3.0110
2.0007	2.7354	2.2024	2.6871	3.2269	2.3933
2.4394	1.8737	2.6486	1.8449	3.7182	1.7057
3.1677	0.9659	3.3860	0.9568	4.4987	0.9201
6.0000	0.0609	6.0000	0.0763	6.0000	0.2336

[Figure 11.A.16](#) plots TIF by scale score for grade three mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.16](#).

Test Information Function by Scale Score - Mathematics 3

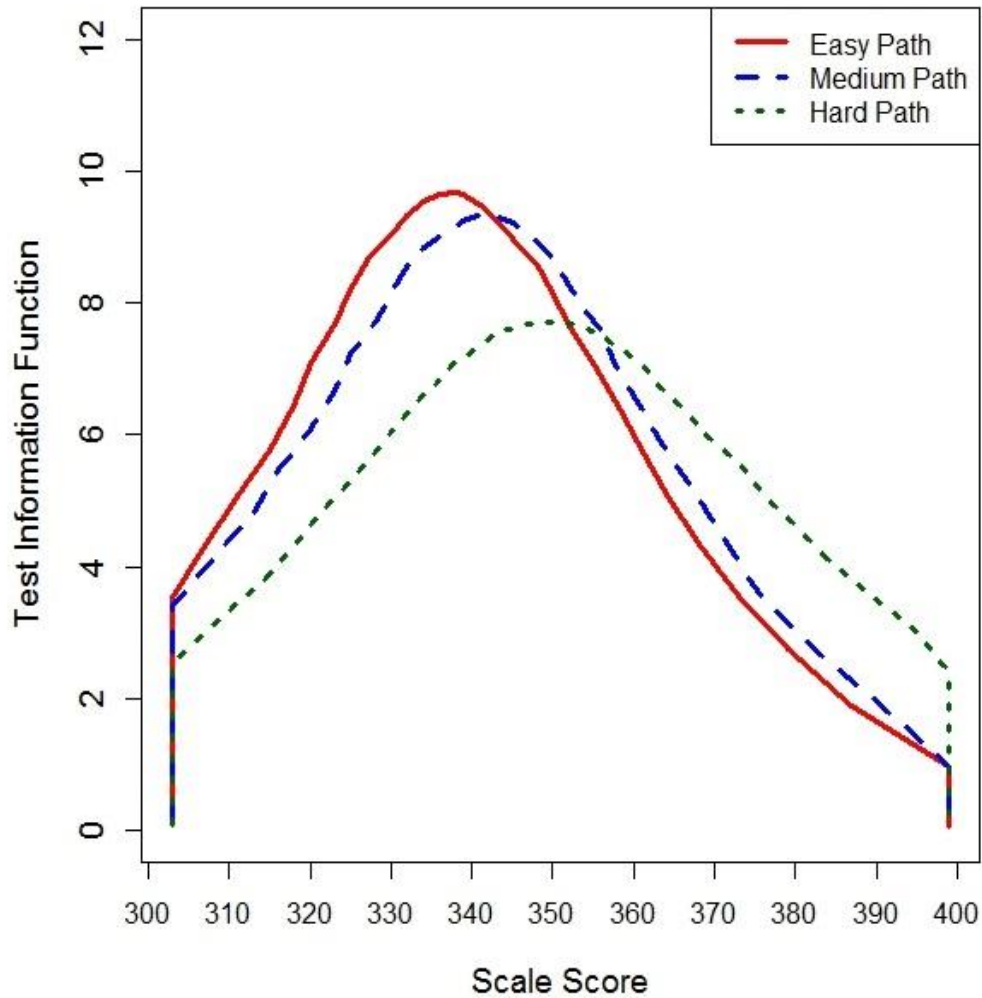


Figure 11.A.16 TIF by Scale Score—Mathematics, Grade Three

Table 11.A.16 Mathematics, Grade Three Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
303	0.0918	303	0.0889	303	0.0701
303	0.9635	303	0.9558	303	0.9397
303	1.8628	303	1.8317	303	1.7736
303	2.7129	303	2.6440	303	2.5269
303	3.5247	303	3.4058	309	3.2201
307	4.3047	308	4.1273	315	3.8674
311	5.0549	313	4.8146	319	4.4753
315	5.7729	316	5.4707	323	5.0436
318	6.4537	320	6.0938	327	5.5678
320	7.0897	323	6.6812	330	6.0424
323	7.6731	325	7.2263	333	6.4616
325	8.1951	328	7.7224	336	6.8220
327	8.6483	330	8.1631	338	7.1219
330	9.0255	332	8.5414	341	7.3614
332	9.3221	334	8.8511	343	7.5405
334	9.5334	337	9.0873	346	7.6596
336	9.6574	339	9.2460	348	7.7182
338	9.6929	341	9.3242	351	7.7154
339	9.6404	343	9.3198	353	7.6502
341	9.5016	345	9.2319	356	7.5217
343	9.2795	347	9.0605	358	7.3307
345	8.9781	349	8.8062	361	7.0789
348	8.6019	351	8.4715	363	6.7709
350	8.1564	353	8.0591	366	6.4124
352	7.6473	356	7.5731	369	6.0111
355	7.0805	358	7.0192	373	5.5751
358	6.4617	361	6.4046	376	5.1109
361	5.7960	364	5.7371	380	4.6238
364	5.0884	368	5.0250	384	4.1146
368	4.3413	372	4.2761	389	3.5799
373	3.5572	376	3.4959	395	3.0110
379	2.7354	383	2.6871	399	2.3933
387	1.8737	391	1.8449	399	1.7057
399	0.9659	399	0.9568	399	0.9201
399	0.0609	399	0.0763	399	0.2336

TIF for Mathematics, Grade Four

[Figure 11.A.17](#) plots TIF by theta level for grade four mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.17](#).

Test Information Function by Theta Level - Mathematics 4

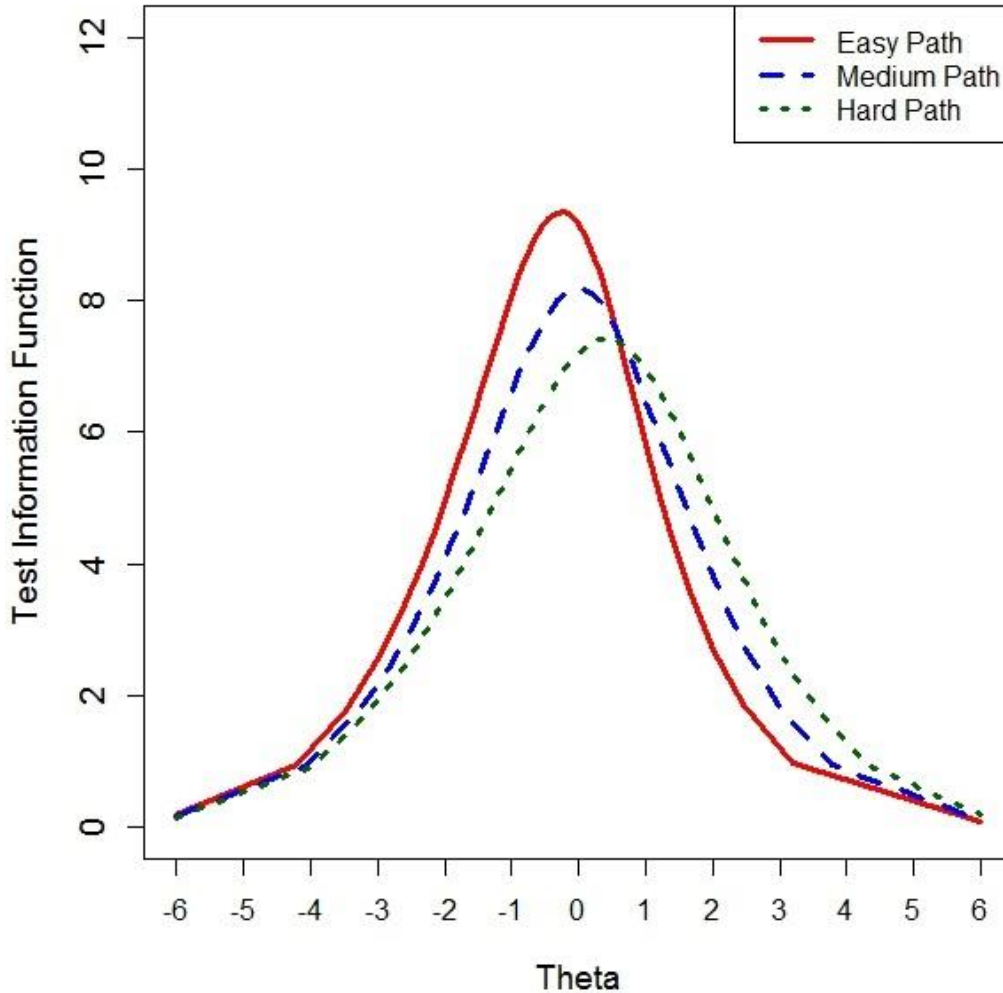


Figure 11.A.17 TIF by Theta—Mathematics, Grade Four

Table 11.A.17 Mathematics, Grade Four Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.1753	-6.0000	0.1518	-6.0000	0.1410
-4.2167	0.9412	-4.0587	0.9271	-3.9712	0.9133
-3.4612	1.7829	-3.2873	1.7350	-3.1829	1.6835
-2.9955	2.5504	-2.8065	2.4572	-2.6840	2.3507
-2.6499	3.2606	-2.4463	3.1169	-2.3051	2.9437
-2.3708	3.9259	-2.1534	3.7285	-1.9933	3.4828
-2.1345	4.5531	-1.9039	4.3005	-1.7249	3.9813
-1.9280	5.1468	-1.6848	4.8376	-1.4874	4.4473
-1.7435	5.7093	-1.4881	5.3418	-1.2728	4.8856
-1.5760	6.2405	-1.3086	5.8131	-1.0762	5.2970
-1.4218	6.7399	-1.1427	6.2500	-0.8939	5.6805
-1.2783	7.2057	-0.9876	6.6504	-0.7231	6.0339
-1.1434	7.6355	-0.8411	7.0119	-0.5615	6.3541
-1.0157	8.0257	-0.7016	7.3311	-0.4075	6.6372
-0.8936	8.3737	-0.5677	7.6045	-0.2595	6.8801
-0.7763	8.6749	-0.4380	7.8292	-0.1162	7.0800
-0.6626	8.9260	-0.3117	8.0015	0.0235	7.2347
-0.5518	9.1227	-0.1876	8.1188	0.1608	7.3427
-0.4430	9.2615	-0.0648	8.1788	0.2964	7.4029
-0.3354	9.3387	0.0575	8.1796	0.4315	7.4149
-0.2284	9.3512	0.1802	8.1206	0.5667	7.3785
-0.1211	9.2963	0.3042	8.0017	0.7030	7.2936
-0.0128	9.1720	0.4306	7.8238	0.8414	7.1601
0.0974	8.9771	0.5604	7.5885	0.9829	6.9780
0.2105	8.7110	0.6948	7.2981	1.1287	6.7475
0.3276	8.3744	0.8352	6.9555	1.2801	6.4688
0.4500	7.9687	0.9832	6.5638	1.4387	6.1425
0.5794	7.4963	1.1409	6.1259	1.6067	5.7688
0.7178	6.9608	1.3110	5.6442	1.7867	5.3482
0.8680	6.3664	1.4969	5.1206	1.9824	4.8806
1.0336	5.7186	1.7039	4.5547	2.1989	4.3654
1.2201	5.0225	1.9395	3.9455	2.4441	3.8008
1.4355	4.2839	2.2167	3.2884	2.7311	3.1832
1.6930	3.5081	2.5590	2.5771	3.0838	2.5071
2.0172	2.6971	3.0198	1.8013	3.5560	1.7629
2.4619	1.8500	3.7687	0.9479	4.3179	0.9355
3.1979	0.9578	6.0000	0.1122	6.0000	0.1943

[Figure 11.A.18](#) plots TIF by scale score for grade four mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.18](#).

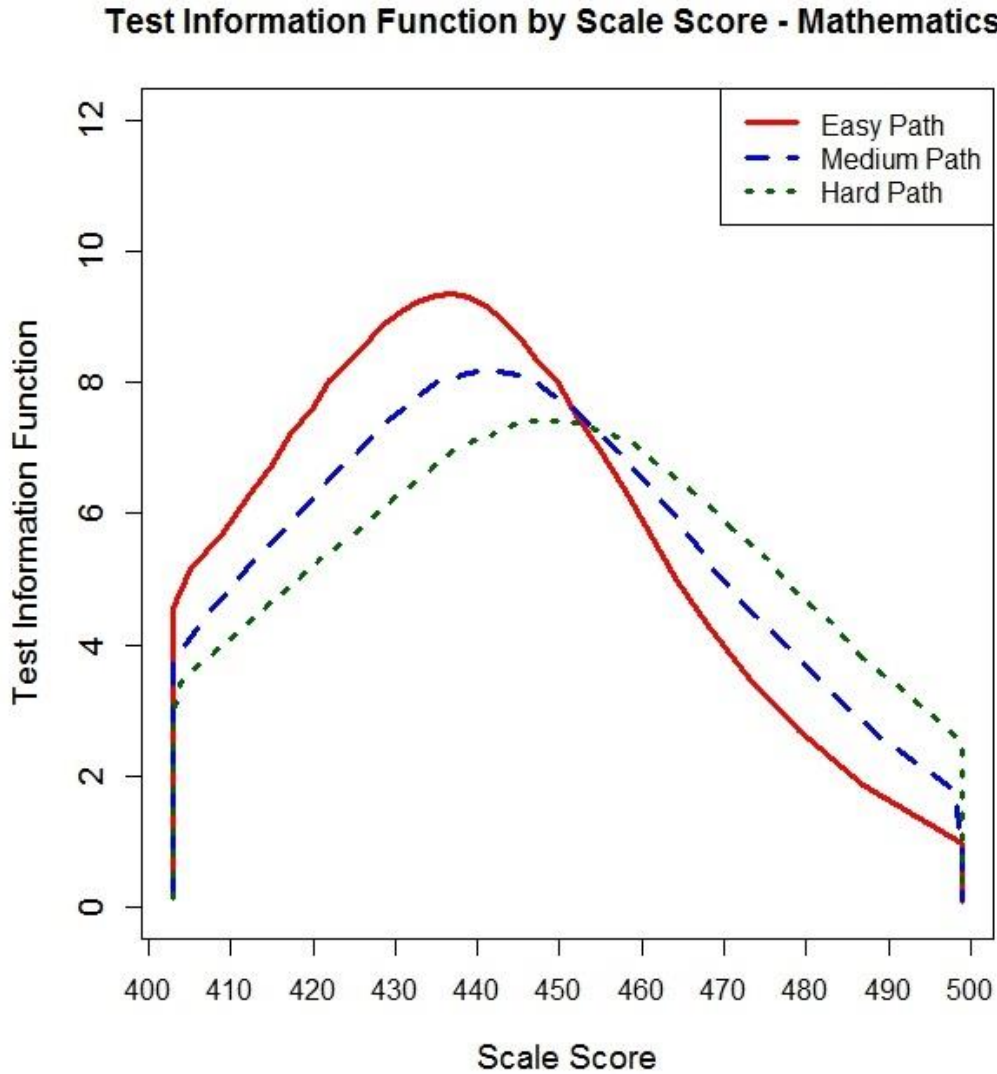


Figure 11.A.18 TIF by Scale Score—Mathematics, Grade Four

Table 11.A.18 Mathematics, Grade Four Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
403	0.1753	403	0.1518	403	0.1410
403	0.9412	403	0.9271	403	0.9133
403	1.7829	403	1.7350	403	1.6835
403	2.5504	403	2.4572	403	2.3507
403	3.2606	403	3.1169	403	2.9437
403	3.9259	403	3.7285	404	3.4828
403	4.5531	406	4.3005	409	3.9813
405	5.1468	410	4.8376	413	4.4473
409	5.7093	413	5.3418	417	4.8856
412	6.2405	417	5.8131	421	5.2970
415	6.7399	420	6.2500	425	5.6805
417	7.2057	423	6.6504	428	6.0339
420	7.6355	426	7.0119	431	6.3541
422	8.0257	428	7.3311	434	6.6372
425	8.3737	431	7.6045	436	6.8801
427	8.6749	433	7.8292	439	7.0800
429	8.9260	435	8.0015	442	7.2347
431	9.1227	438	8.1188	444	7.3427
433	9.2615	440	8.1788	447	7.4029
435	9.3387	442	8.1796	449	7.4149
437	9.3512	445	8.1206	452	7.3785
439	9.2963	447	8.0017	454	7.2936
441	9.1720	449	7.8238	457	7.1601
443	8.9771	452	7.5885	460	6.9780
445	8.7110	454	7.2981	462	6.7475
447	8.3744	457	6.9555	465	6.4688
450	7.9687	460	6.5638	468	6.1425
452	7.4963	463	6.1259	471	5.7688
455	6.9608	466	5.6442	475	5.3482
458	6.3664	469	5.1206	478	4.8806
461	5.7186	473	4.5547	483	4.3654
464	5.0225	478	3.9455	487	3.8008
468	4.2839	483	3.2884	493	3.1832
473	3.5081	489	2.5771	499	2.5071
479	2.6971	498	1.8013	499	1.7629
487	1.8500	499	0.9479	499	0.9355
499	0.9578	499	0.1122	499	0.1943

TIF for Mathematics, Grade Five

[Figure 11.A.19](#) plots TIF by theta level for grade five mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.19](#).

Test Information Function by Theta Level - Mathematics 5

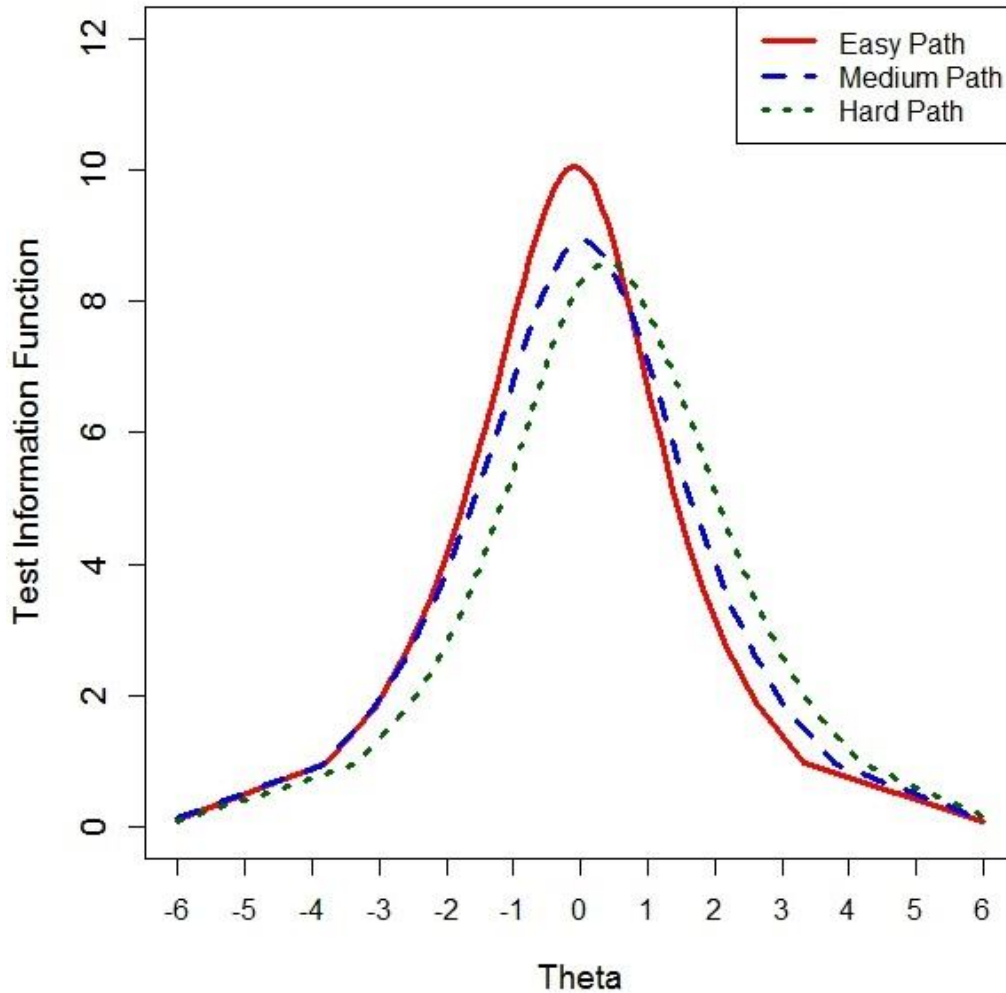


Figure 11.A.19 TIF by Theta—Mathematics, Grade Five

Table 11.A.19 Mathematics, Grade Five Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.1127	-6.0000	0.1220	-6.0000	0.0760
-3.7810	0.9574	-3.8480	0.9416	-3.3625	0.9358
-3.0428	1.8376	-3.0926	1.7818	-2.6016	1.7685
-2.5932	2.6551	-2.6262	2.5436	-2.1323	2.5329
-2.2625	3.4214	-2.2792	3.2447	-1.7849	3.2535
-1.9974	4.1459	-1.9985	3.8982	-1.5061	3.9429
-1.7742	4.8350	-1.7603	4.5138	-1.2716	4.6047
-1.5803	5.4921	-1.5519	5.0976	-1.0680	5.2354
-1.4078	6.1195	-1.3656	5.6522	-0.8871	5.8269
-1.2518	6.7160	-1.1964	6.1774	-0.7230	6.3718
-1.1088	7.2792	-1.0406	6.6709	-0.5718	6.8624
-0.9761	7.8053	-0.8956	7.1281	-0.4304	7.2937
-0.8517	8.2896	-0.7592	7.5442	-0.2967	7.6625
-0.7341	8.7261	-0.6297	7.9138	-0.1687	7.9682
-0.6220	9.1093	-0.5058	8.2315	-0.0451	8.2112
-0.5141	9.4343	-0.3862	8.4933	0.0754	8.3929
-0.4095	9.6959	-0.2698	8.6960	0.1937	8.5147
-0.3074	9.8896	-0.1557	8.8372	0.3108	8.5782
-0.2068	10.0122	-0.0431	8.9155	0.4273	8.5846
-0.1072	10.0606	0.0690	8.9305	0.5442	8.5351
-0.0076	10.0332	0.1813	8.8821	0.6621	8.4308
0.0926	9.9291	0.2947	8.7708	0.7819	8.2727
0.1942	9.7485	0.4098	8.5983	0.9043	8.0621
0.2982	9.4922	0.5278	8.3658	1.0305	7.8002
0.4054	9.1624	0.6494	8.0763	1.1613	7.4891
0.5170	8.7619	0.7760	7.7320	1.2982	7.1301
0.6343	8.2943	0.9088	7.3367	1.4426	6.7252
0.7589	7.7643	1.0494	6.8939	1.5965	6.2758
0.8929	7.1766	1.1999	6.4067	1.7625	5.7826
1.0389	6.5372	1.3628	5.8785	1.9440	5.2459
1.2005	5.8518	1.5417	5.3107	2.1461	4.6646
1.3830	5.1253	1.7417	4.7038	2.3763	4.0366
1.5943	4.3625	1.9704	4.0565	2.6474	3.3581
1.8474	3.5663	2.2407	3.3648	2.9831	2.6237
2.1665	2.7374	2.5761	2.6235	3.4368	1.8256
2.6052	1.8730	3.0301	1.8234	4.1780	0.9550
3.3338	0.9654	3.7723	0.9538	6.0000	0.1671
6.0000	0.0718	6.0000	0.1121	NA	NA

[Figure 11.A.20](#) plots TIF by scale score for grade five mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.20](#).

Test Information Function by Scale Score - Mathematics 5

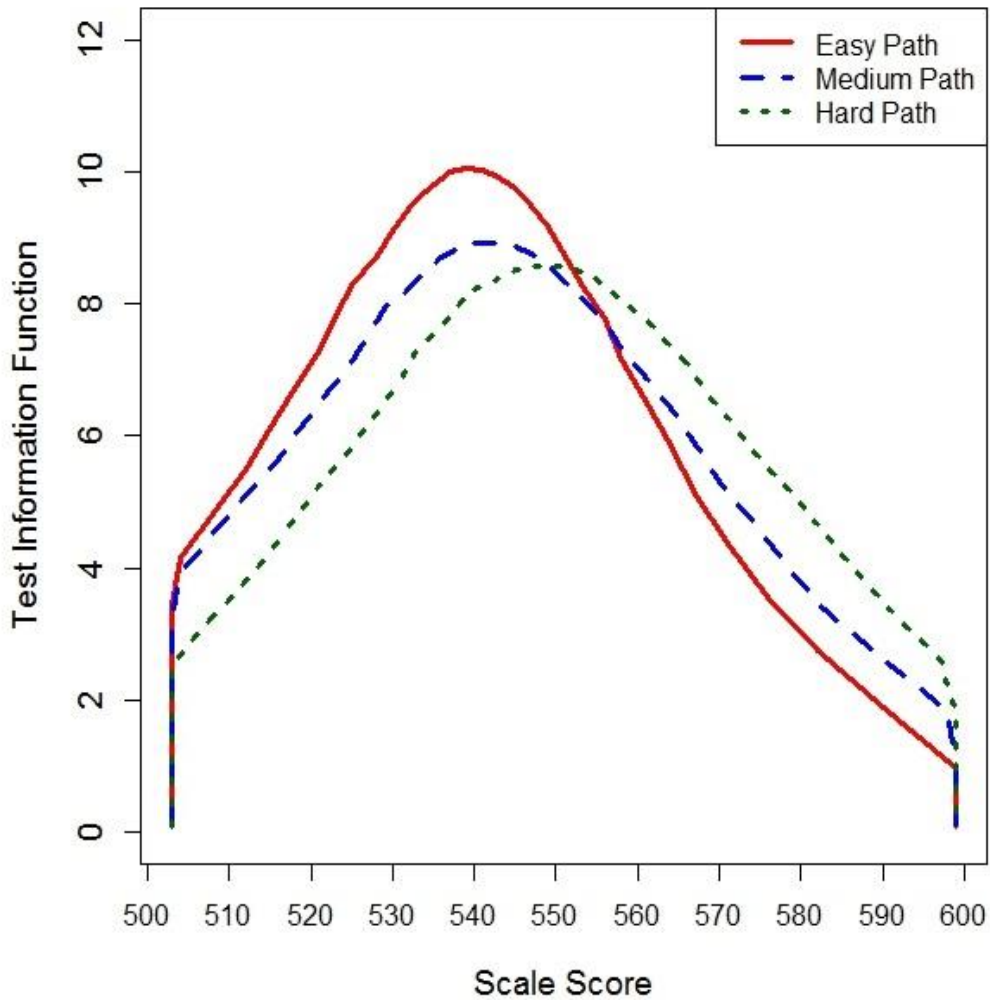


Figure 11.A.20 TIF by Scale Score—Mathematics, Grade Five

Table 11.A.20 Mathematics, Grade Five Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
503	0.1127	503	0.1220	503	0.0760
503	0.9574	503	0.9416	503	0.9358
503	1.8376	503	1.7818	503	1.7685
503	2.6551	503	2.5436	503	2.5329
503	3.4214	503	3.2447	508	3.2535
504	4.1459	504	3.8982	513	3.9429
508	4.8350	508	4.5138	517	4.6047
512	5.4921	512	5.0976	521	5.2354
515	6.1195	516	5.6522	525	5.8269
518	6.7160	519	6.1774	528	6.3718
521	7.2792	522	6.6709	531	6.8624
523	7.8053	525	7.1281	533	7.2937
525	8.2896	527	7.5442	536	7.6625
528	8.7261	529	7.9138	538	7.9682
530	9.1093	532	8.2315	540	8.2112
532	9.4343	534	8.4933	543	8.3929
534	9.6959	536	8.6960	545	8.5147
536	9.8896	538	8.8372	547	8.5782
537	10.0122	540	8.9155	549	8.5846
539	10.0606	543	8.9305	552	8.5351
541	10.0332	545	8.8821	554	8.4308
543	9.9291	547	8.7708	556	8.2727
545	9.7485	549	8.5983	558	8.0621
547	9.4922	551	8.3658	561	7.8002
549	9.1624	553	8.0763	563	7.4891
551	8.7619	556	7.7320	566	7.1301
553	8.2943	558	7.3367	568	6.7252
556	7.7643	561	6.8939	571	6.2758
558	7.1766	564	6.4067	574	5.7826
561	6.5372	567	5.8785	578	5.2459
564	5.8518	570	5.3107	582	4.6646
567	5.1253	574	4.7038	586	4.0366
571	4.3625	578	4.0565	591	3.3581
576	3.5663	583	3.3648	597	2.6237
582	2.7374	590	2.6235	599	1.8256
590	1.8730	598	1.8234	599	0.9550
599	0.9654	599	0.9538	599	0.1671
599	0.0718	599	0.1121	NA	NA

TIF for Mathematics, Grade Six

[Figure 11.A.21](#) plots TIF by theta level for grade six mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.21](#).

Test Information Function by Theta Level - Mathematics 6

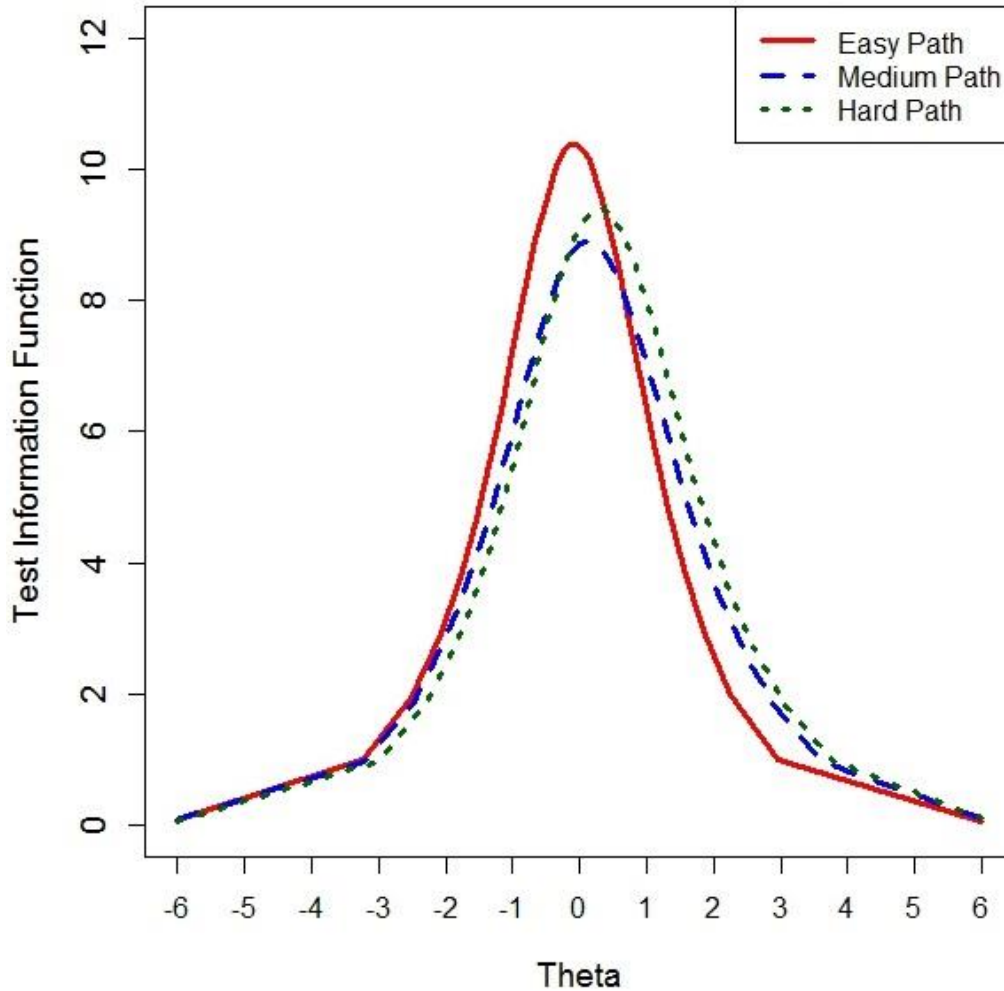


Figure 11.A.21 TIF by Theta—Mathematics, Grade Six

Table 11.A.21 Mathematics, Grade Six Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.0632	-6.0000	0.0624	-6.0000	0.0508
-3.2213	0.9824	-3.1971	0.9686	-2.9906	0.9703
-2.5102	1.9350	-2.4710	1.8794	-2.2672	1.8918
-2.0882	2.8648	-2.0334	2.7415	-1.8338	2.7767
-1.7849	3.7727	-1.7144	3.5597	-1.5197	3.6295
-1.5466	4.6542	-1.4603	4.3359	-1.2712	4.4467
-1.3492	5.5017	-1.2472	5.0679	-1.0639	5.2219
-1.1796	6.3063	-1.0621	5.7513	-0.8846	5.9472
-1.0298	7.0594	-0.8971	6.3806	-0.7253	6.6148
-0.8946	7.7521	-0.7470	6.9498	-0.5806	7.2189
-0.7705	8.3760	-0.6080	7.4540	-0.4470	7.7539
-0.6549	8.9241	-0.4776	7.8877	-0.3217	8.2169
-0.5457	9.3912	-0.3537	8.2471	-0.2028	8.6051
-0.4413	9.7728	-0.2345	8.5302	-0.0886	8.9176
-0.3405	10.0653	-0.1186	8.7350	0.0221	9.1533
-0.2421	10.2663	-0.0049	8.8607	0.1304	9.3122
-0.1452	10.3743	0.1076	8.9075	0.2373	9.3946
-0.0489	10.3884	0.2201	8.8764	0.3437	9.4011
0.0478	10.3087	0.3335	8.7690	0.4505	9.3324
0.1456	10.1358	0.4487	8.5880	0.5585	9.1897
0.2456	9.8710	0.5669	8.3362	0.6686	8.9743
0.3487	9.5165	0.6892	8.0171	0.7819	8.6879
0.4563	9.0744	0.8170	7.6345	0.8994	8.3330
0.5699	8.5478	0.9520	7.1920	1.0226	7.9119
0.6912	7.9416	1.0961	6.6939	1.1530	7.4284
0.8229	7.2596	1.2520	6.1437	1.2928	6.8863
0.9683	6.5083	1.4233	5.5444	1.4447	6.2901
1.1324	5.6945	1.6151	4.8984	1.6125	5.6448
1.3229	4.8260	1.8351	4.2073	1.8014	4.9561
1.5527	3.9115	2.0963	3.4708	2.0196	4.2286
1.8455	2.9620	2.4227	2.6874	2.2804	3.4659
2.2550	1.9874	2.8677	1.8532	2.6082	2.6694
2.9514	0.9979	3.6014	0.9613	3.0570	1.8356
6.0000	0.0475	6.0000	0.0940	3.7975	0.9536
NA	NA	NA	NA	6.0000	0.1151

[Figure 11.A.22](#) plots TIF by scale score for grade six mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.22](#).

Test Information Function by Scale Score - Mathematics 6

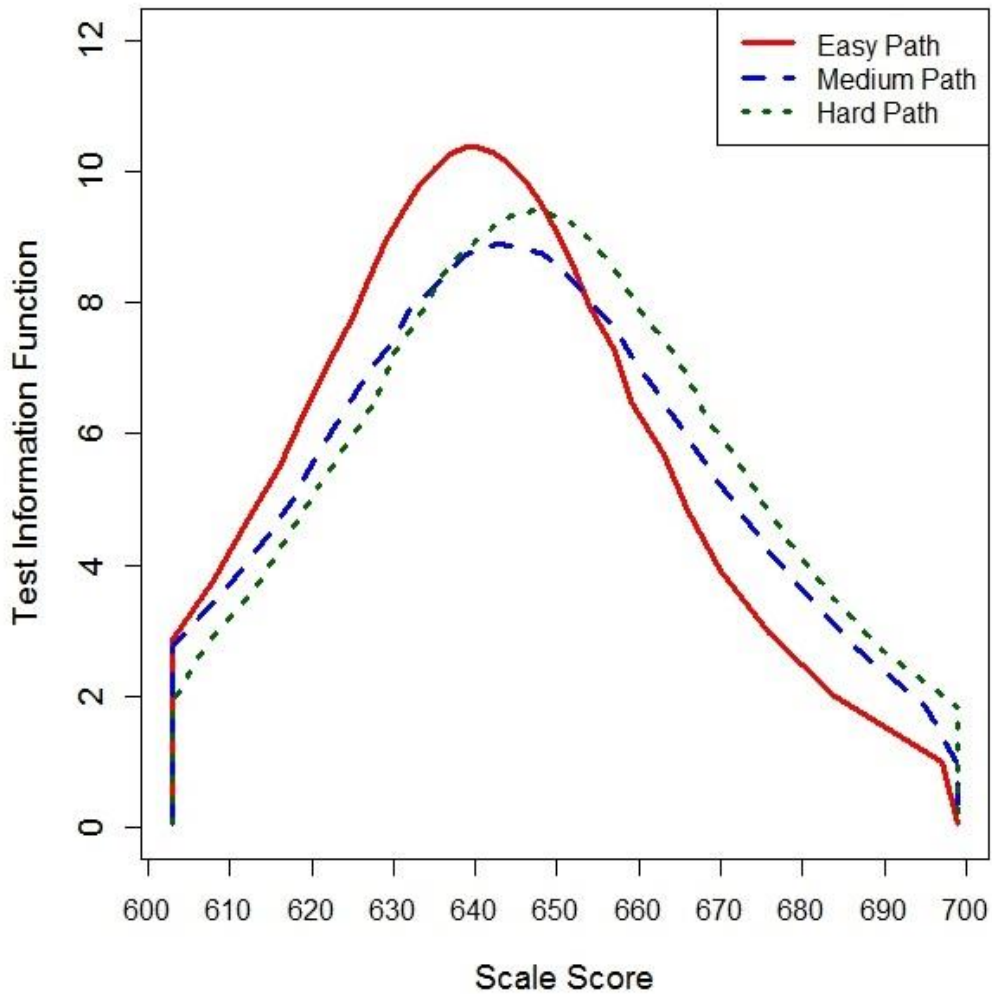


Figure 11.A.22 TIF by Scale Score—Mathematics, Grade Six

Table 11.A.22 Mathematics, Grade Six Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
603	0.0632	603	0.0624	603	0.0508
603	0.9824	603	0.9686	603	0.9703
603	1.9350	603	1.8794	603	1.8918
603	2.8648	603	2.7415	607	2.7767
608	3.7727	609	3.5597	613	3.6295
612	4.6542	614	4.3359	617	4.4467
616	5.5017	618	5.0679	621	5.2219
619	6.3063	621	5.7513	625	5.9472
622	7.0594	624	6.3806	628	6.6148
625	7.7521	627	6.9498	630	7.2189
627	8.3760	630	7.4540	633	7.7539
629	8.9241	632	7.8877	635	8.2169
631	9.3912	635	8.2471	637	8.6051
633	9.7728	637	8.5302	640	8.9176
635	10.0653	639	8.7350	642	9.1533
637	10.2663	641	8.8607	644	9.3122
639	10.3743	643	8.9075	646	9.3946
640	10.3884	645	8.8764	648	9.4011
642	10.3087	648	8.7690	650	9.3324
644	10.1358	650	8.5880	652	9.1897
646	9.8710	652	8.3362	654	8.9743
648	9.5165	654	8.0171	656	8.6879
650	9.0744	657	7.6345	658	8.3330
652	8.5478	659	7.1920	660	7.9119
654	7.9416	662	6.6939	663	7.4284
657	7.2596	665	6.1437	666	6.8863
659	6.5083	668	5.5444	668	6.2901
663	5.6945	672	4.8984	672	5.6448
666	4.8260	676	4.2073	675	4.9561
670	3.9115	681	3.4708	679	4.2286
676	2.9620	687	2.6874	684	3.4659
684	1.9874	695	1.8532	690	2.6694
697	0.9979	699	0.9613	699	1.8356
699	0.0475	699	0.0940	699	0.9536
NA	NA	NA	NA	699	0.1151

TIF for Mathematics, Grade Seven

[Figure 11.A.23](#) plots TIF by theta level for grade seven mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.23](#).

Test Information Function by Theta Level - Mathematics 7

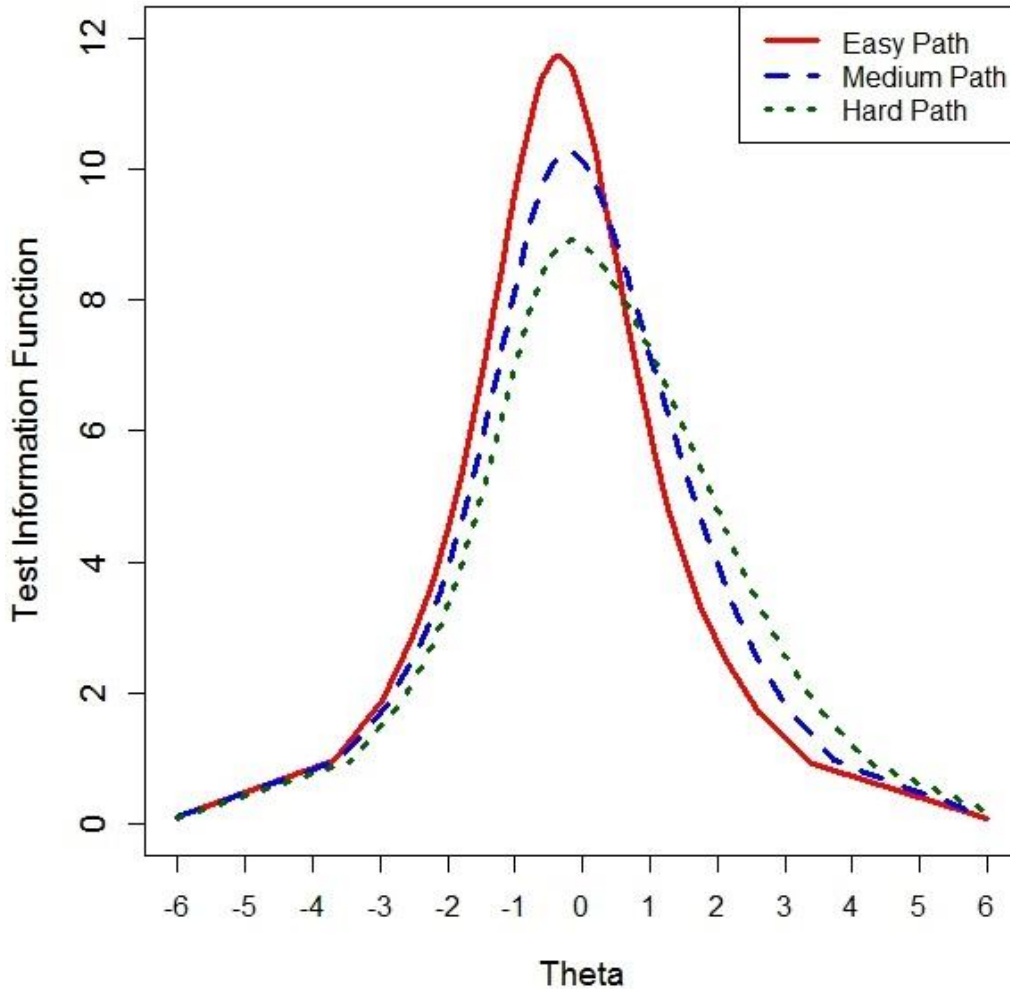


Figure 11.A.23 TIF by Theta—Mathematics, Grade Seven

Table 11.A.23 Mathematics, Grade Seven Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.1025	-6.0000	0.0934	-6.0000	0.0792
-3.6952	0.9696	-3.5930	0.9604	-3.4216	0.9557
-2.9715	1.8924	-2.8598	1.8603	-2.6841	1.8484
-2.5388	2.7878	-2.4184	2.7248	-2.2399	2.7078
-2.2269	3.6668	-2.0986	3.5676	-1.9181	3.5471
-1.9820	4.5332	-1.8463	4.3935	-1.6644	4.3642

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-1.7797	5.3853	-1.6373	5.1980	-1.4536	5.1490
-1.6070	6.2160	-1.4579	5.9736	-1.2721	5.8861
-1.4556	7.0178	-1.3000	6.7091	-1.1113	6.5605
-1.3203	7.7807	-1.1581	7.3934	-0.9655	7.1592
-1.1973	8.4959	-1.0282	8.0172	-0.8306	7.6733
-1.0839	9.1545	-0.9076	8.5718	-0.7038	8.0967
-0.9781	9.7487	-0.7941	9.0513	-0.5827	8.4285
-0.8781	10.2729	-0.6860	9.4521	-0.4658	8.6699
-0.7828	10.7211	-0.5819	9.7725	-0.3515	8.8266
-0.6911	11.0895	-0.4808	10.0125	-0.2387	8.9059
-0.6021	11.3753	-0.3817	10.1739	-0.1264	8.9171
-0.5149	11.5771	-0.2838	10.2600	-0.0140	8.8702
-0.4290	11.6936	-0.1864	10.2750	0.0994	8.7752
-0.3435	11.7251	-0.0888	10.2236	0.2143	8.6414
-0.2580	11.6723	0.0096	10.1111	0.3312	8.4765
-0.1719	11.5369	0.1093	9.9429	0.4506	8.2861
-0.0843	11.3206	0.2111	9.7236	0.5729	8.0739
0.0052	11.0265	0.3154	9.4582	0.6987	7.8411
0.0974	10.6581	0.4229	9.1506	0.8284	7.5873
0.1933	10.2184	0.5344	8.8037	0.9627	7.3102
0.2937	9.7125	0.6506	8.4204	1.1025	7.0069
0.3998	9.1452	0.7724	8.0024	1.2488	6.6739
0.5131	8.5220	0.9011	7.5503	1.4029	6.3078
0.6353	7.8498	1.0381	7.0643	1.5668	5.9050
0.7690	7.1346	1.1851	6.5449	1.7428	5.4627
0.9171	6.3861	1.3448	5.9904	1.9346	4.9777
1.0841	5.6127	1.5206	5.4001	2.1470	4.4475
1.2762	4.8249	1.7175	4.7723	2.3878	3.8686
1.5027	4.0338	1.9432	4.1051	2.6699	3.2365
1.7787	3.2489	2.2106	3.3955	3.0171	2.5450
2.1306	2.4758	2.5436	2.6390	3.4828	1.7849
2.6145	1.7071	2.9957	1.8287	4.2371	0.9429
3.4020	0.9079	3.7367	0.9545	6.0000	0.1786
6.0000	0.0815	6.0000	0.1081	NA	NA

[Figure 11.A.24](#) plots TIF by scale score for grade seven mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.24](#).

Test Information Function by Scale Score - Mathematics 7

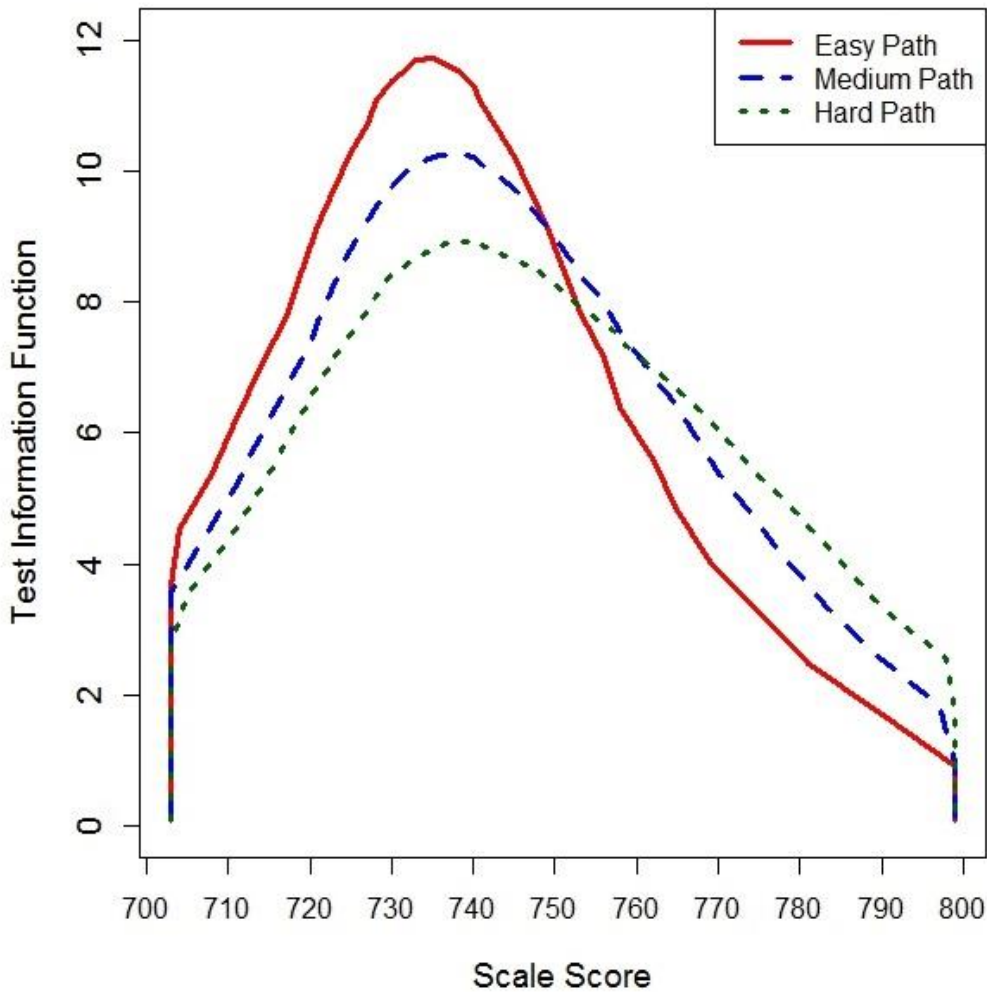


Figure 11.A.24 TIF by Scale Score—Mathematics, Grade Seven

Table 11.A.24 Mathematics, Grade Seven Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
703	0.1025	703	0.0934	703	0.0792
703	0.9696	703	0.9604	703	0.9557
703	1.8924	703	1.8603	703	1.8484
703	2.7878	703	2.7248	703	2.7078
703	3.6668	703	3.5676	705	3.5471
704	4.5332	707	4.3935	710	4.3642

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
708	5.3853	711	5.1980	714	5.1490
711	6.2160	714	5.9736	717	5.8861
714	7.0178	717	6.7091	720	6.5605
717	7.7807	720	7.3934	723	7.1592
719	8.4959	722	8.0172	726	7.6733
721	9.1545	724	8.5718	728	8.0967
723	9.7487	726	9.0513	730	8.4285
725	10.2729	728	9.4521	733	8.6699
727	10.7211	730	9.7725	735	8.8266
728	11.0895	732	10.0125	737	8.9059
730	11.3753	734	10.1739	739	8.9171
732	11.5771	736	10.2600	741	8.8702
733	11.6936	738	10.2750	743	8.7752
735	11.7251	740	10.2236	745	8.6414
736	11.6723	741	10.1111	748	8.4765
738	11.5369	743	9.9429	750	8.2861
740	11.3206	745	9.7236	752	8.0739
741	11.0265	747	9.4582	754	7.8411
743	10.6581	749	9.1506	757	7.5873
745	10.2184	751	8.8037	759	7.3102
747	9.7125	753	8.4204	762	7.0069
749	9.1452	756	8.0024	765	6.6739
751	8.5220	758	7.5503	768	6.3078
753	7.8498	761	7.0643	771	5.9050
756	7.1346	764	6.5449	774	5.4627
758	6.3861	767	5.9904	778	4.9777
762	5.6127	770	5.4001	782	4.4475
765	4.8249	774	4.7723	786	3.8686
769	4.0338	778	4.1051	791	3.2365
775	3.2489	783	3.3955	798	2.5450
781	2.4758	789	2.6390	799	1.7849
790	1.7071	797	1.8287	799	0.9429
799	0.9079	799	0.9545	799	0.1786
799	0.0815	799	0.1081	NA	NA

TIF for Mathematics, Grade Eight

Figure 11.A.25 plots TIF by theta level for grade eight mathematics. The data used to create this graph is found in the table that immediately follows, Table 11.A.25.

Test Information Function by Theta Level - Mathematics 8

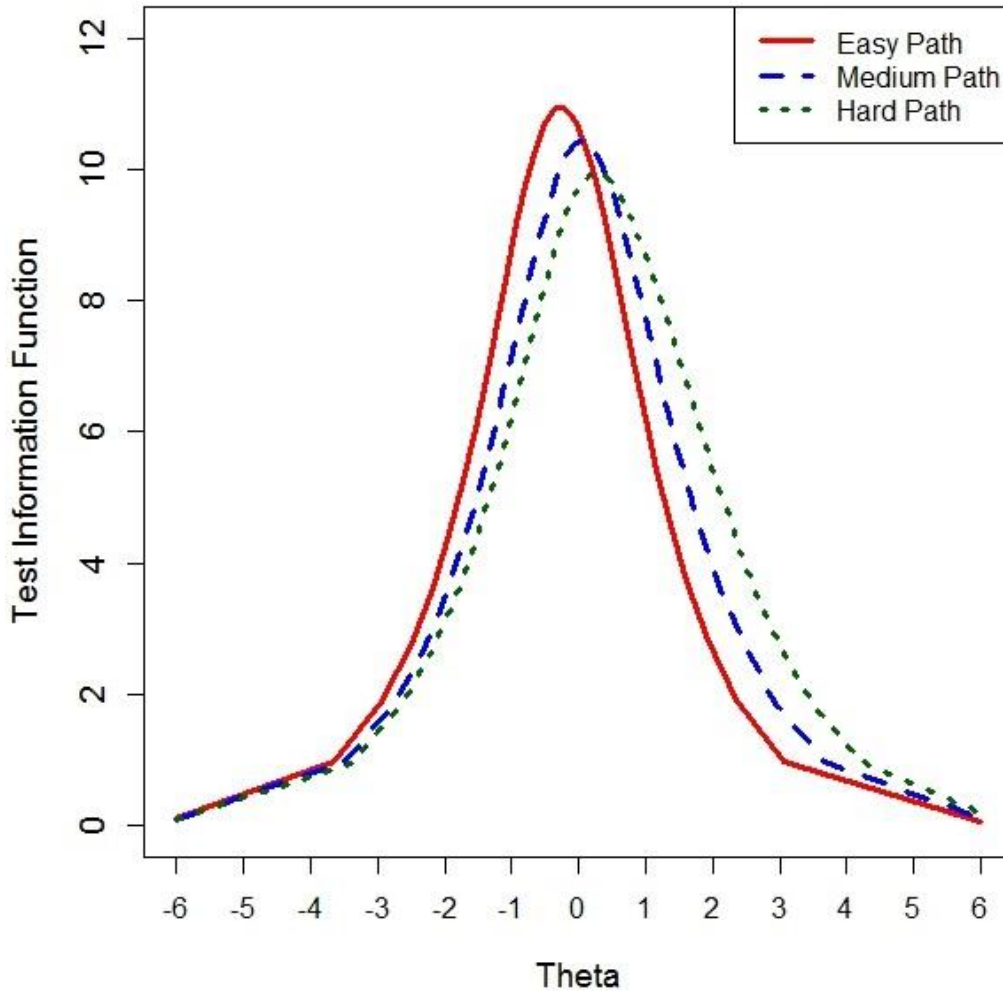


Figure 11.A.25 TIF by Theta—Mathematics, Grade Eight

Table 11.A.25 Mathematics, Grade Eight Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.0986	-6.0000	0.0842	-6.0000	0.0767
-3.6560	0.9688	-3.4885	0.9591	-3.3881	0.9520
-2.9310	1.8860	-2.7531	1.8497	-2.6450	1.8241
-2.4961	2.7672	-2.3079	2.6911	-2.1923	2.6393
-2.1811	3.6227	-1.9828	3.4964	-1.8601	3.4131
-1.9326	4.4560	-1.7245	4.2724	-1.5949	4.1547

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-1.7263	5.2668	-1.5088	5.0221	-1.3727	4.8679
-1.5493	6.0497	-1.3227	5.7442	-1.1805	5.5522
-1.3934	6.7987	-1.1582	6.4356	-1.0101	6.2055
-1.2534	7.5056	-1.0102	7.0903	-0.8564	6.8223
-1.1257	8.1617	-0.8749	7.7026	-0.7157	7.3968
-1.0074	8.7605	-0.7496	8.2662	-0.5851	7.9236
-0.8966	9.2948	-0.6321	8.7755	-0.4625	8.3973
-0.7916	9.7598	-0.5210	9.2238	-0.3462	8.8130
-0.6911	10.1512	-0.4147	9.6074	-0.2349	9.1667
-0.5941	10.4662	-0.3123	9.9212	-0.1275	9.4559
-0.4996	10.7032	-0.2127	10.1628	-0.0230	9.6790
-0.4068	10.8613	-0.1151	10.3297	0.0795	9.8360
-0.3151	10.9403	-0.0187	10.4208	0.1808	9.9276
-0.2237	10.9409	0.0772	10.4356	0.2814	9.9553
-0.1319	10.8637	0.1733	10.3749	0.3820	9.9219
-0.0392	10.7102	0.2704	10.2399	0.4833	9.8306
0.0552	10.4815	0.3691	10.0333	0.5858	9.6852
0.1520	10.1794	0.4701	9.7583	0.6902	9.4893
0.2521	9.8053	0.5745	9.4182	0.7970	9.2472
0.3565	9.3614	0.6830	9.0182	0.9069	8.9624
0.4664	8.8498	0.7968	8.5629	1.0205	8.6387
0.5833	8.2735	0.9172	8.0576	1.1388	8.2781
0.7090	7.6367	1.0458	7.5074	1.2627	7.8828
0.8464	6.9422	1.1846	6.9174	1.3932	7.4542
0.9988	6.1966	1.3362	6.2919	1.5317	6.9926
1.1714	5.4058	1.5041	5.6344	1.6801	6.4970
1.3723	4.5757	1.6934	4.9465	1.8407	5.9661
1.6145	3.7137	1.9119	4.2278	2.0169	5.3972
1.9223	2.8253	2.1724	3.4761	2.2135	4.7874
2.3497	1.9134	2.4986	2.6867	2.4381	4.1325
3.0673	0.9755	2.9438	1.8519	2.7033	3.4280
6.0000	0.0546	3.6779	0.9610	3.0328	2.6687
NA	NA	6.0000	0.1014	3.4798	1.8487
NA	NA	NA	NA	4.2140	0.9616
NA	NA	NA	NA	6.0000	0.1723

[Figure 11.A.26](#) plots TIF by scale score for grade eight mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.26](#).

Test Information Function by Scale Score - Mathematics 8

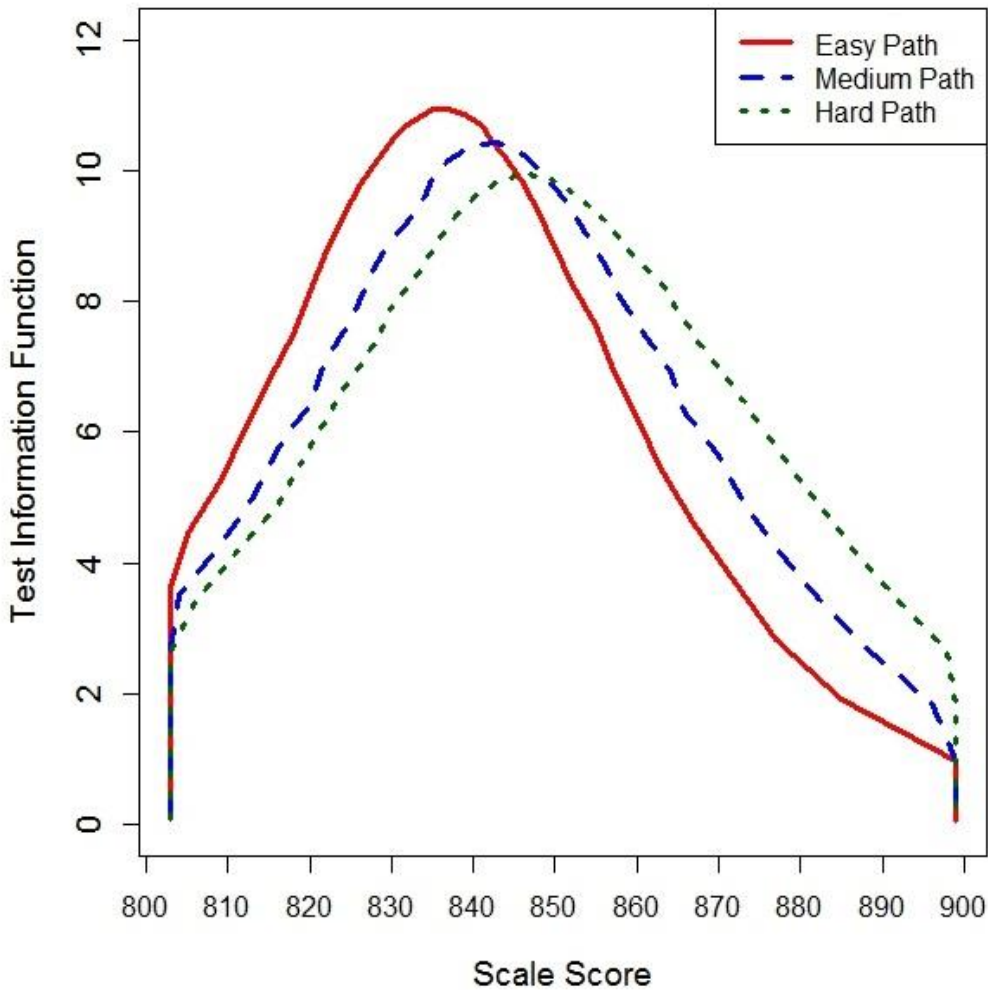


Figure 11.A.26 TIF by Scale Score—Mathematics, Grade Eight

Table 11.A.26 Mathematics, Grade Eight Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
803	0.0986	803	0.0842	803	0.0767
803	0.9688	803	0.9591	803	0.9520
803	1.8860	803	1.8497	803	1.8241
803	2.7672	803	2.6911	803	2.6393
803	3.6227	804	3.4964	806	3.4131
805	4.4560	809	4.2724	811	4.1547

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
809	5.2668	813	5.0221	816	4.8679
812	6.0497	816	5.7442	819	5.5522
815	6.7987	820	6.4356	822	6.2055
818	7.5056	822	7.0903	825	6.8223
820	8.1617	825	7.7026	828	7.3968
822	8.7605	827	8.2662	830	7.9236
824	9.2948	829	8.7755	833	8.3973
826	9.7598	832	9.2238	835	8.8130
828	10.1512	834	9.6074	837	9.1667
830	10.4662	835	9.9212	839	9.4559
832	10.7032	837	10.1628	841	9.6790
834	10.8613	839	10.3297	843	9.8360
835	10.9403	841	10.4208	845	9.9276
837	10.9409	843	10.4356	847	9.9553
839	10.8637	845	10.3749	848	9.9219
841	10.7102	846	10.2399	850	9.8306
842	10.4815	848	10.0333	852	9.6852
844	10.1794	850	9.7583	854	9.4893
846	9.8053	852	9.4182	856	9.2472
848	9.3614	854	9.0182	858	8.9624
850	8.8498	856	8.5629	860	8.6387
852	8.2735	858	8.0576	863	8.2781
855	7.6367	861	7.5074	865	7.8828
857	6.9422	864	6.9174	867	7.4542
860	6.1966	866	6.2919	870	6.9926
863	5.4058	870	5.6344	873	6.4970
867	4.5757	873	4.9465	876	5.9661
872	3.7137	877	4.2278	879	5.3972
877	2.8253	882	3.4761	883	4.7874
885	1.9134	888	2.6867	887	4.1325
899	0.9755	896	1.8519	892	3.4280
899	0.0546	899	0.9610	898	2.6687
NA	NA	899	0.1014	899	1.8487
NA	NA	NA	NA	899	0.9616
NA	NA	NA	NA	899	0.1723

TIF for Mathematics, Grade Eleven

[Figure 11.A.27](#) plots TIF by theta level for grade eleven mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.27](#).

Test Information Function by Theta Level - Mathematics 11

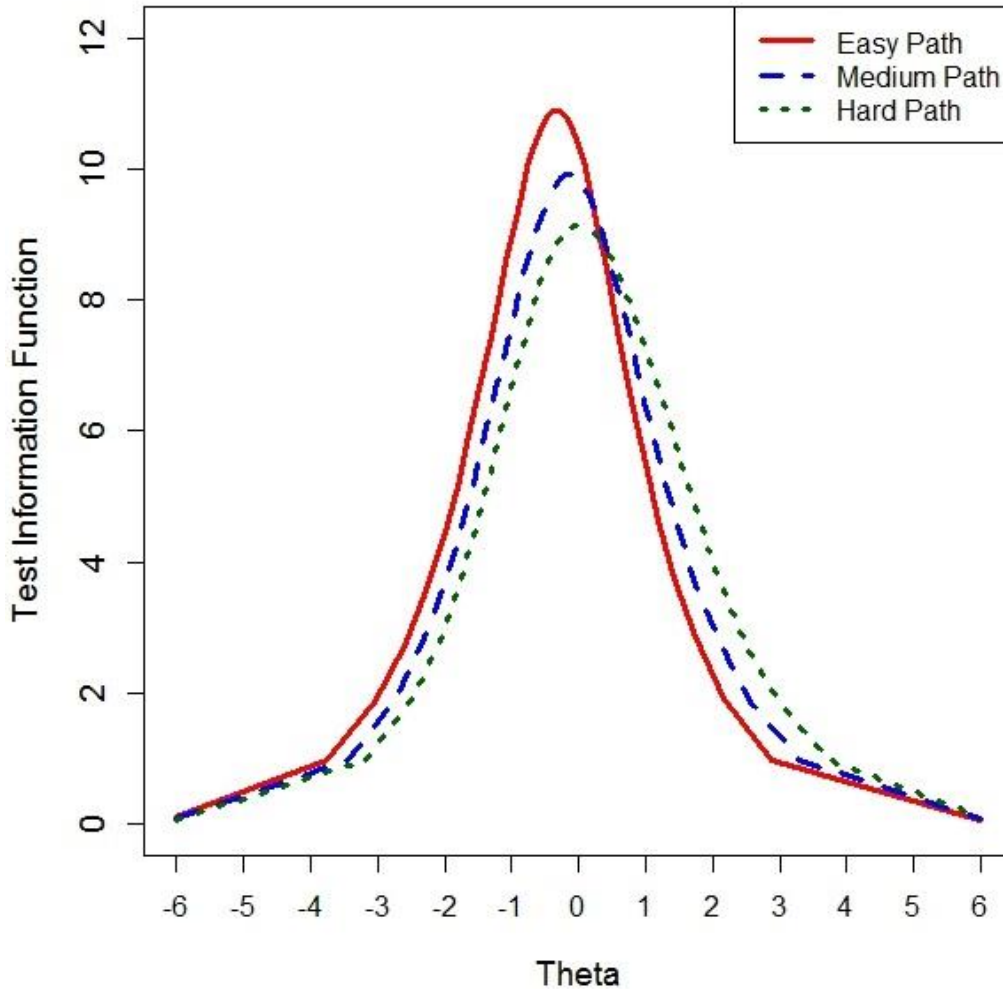


Figure 11.A.27 TIF by Theta—Mathematics, Grade Eleven

Table 11.A.27 Mathematics, Grade Eleven Theta TIF Data

Theta Easy	TIF Easy	Theta Medium	TIF Medium	Theta Hard	TIF Hard
-6.0000	0.1115	-6.0000	0.0794	-6.0000	0.0614
-3.7729	0.9619	-3.4456	0.9777	-3.1878	0.9788
-3.0409	1.8629	-2.7296	1.9167	-2.4740	1.9280
-2.5998	2.7242	-2.3025	2.8229	-2.0505	2.8539
-2.2795	3.5577	-1.9939	3.6952	-1.7457	3.7488
-2.0262	4.3689	-1.7499	4.5289	-1.5054	4.5992
-1.8157	5.1575	-1.5463	5.3179	-1.3049	5.3928
-1.6348	5.9201	-1.3702	6.0558	-1.1309	6.1198
-1.4755	6.6511	-1.2138	6.7375	-0.9757	6.7719
-1.3325	7.3441	-1.0718	7.3602	-0.8340	7.3451
-1.2019	7.9933	-0.9408	7.9207	-0.7022	7.8373
-1.0813	8.5909	-0.8184	8.4162	-0.5779	8.2475
-0.9684	9.1318	-0.7025	8.8459	-0.4590	8.5774
-0.8616	9.6101	-0.5917	9.2074	-0.3441	8.8290
-0.7597	10.0200	-0.4847	9.4991	-0.2319	9.0058
-0.6615	10.3571	-0.3806	9.7183	-0.1215	9.1117
-0.5661	10.6168	-0.2785	9.8629	-0.0120	9.1513
-0.4727	10.7952	-0.1774	9.9310	0.0975	9.1293
-0.3805	10.8893	-0.0767	9.9205	0.2075	9.0502
-0.2887	10.8967	0.0246	9.8303	0.3188	8.9182
-0.1965	10.8156	0.1272	9.6600	0.4322	8.7362
-0.1033	10.6453	0.2321	9.4101	0.5482	8.5065
-0.0082	10.3861	0.3403	9.0824	0.6678	8.2295
0.0897	10.0392	0.4529	8.6805	0.7918	7.9046
0.1915	9.6068	0.5714	8.2084	0.9214	7.5299
0.2985	9.0924	0.6974	7.6725	1.0581	7.1029
0.4123	8.5004	0.8331	7.0794	1.2039	6.6215
0.5347	7.8382	0.9812	6.4372	1.3615	6.0844
0.6686	7.1118	1.1455	5.7532	1.5344	5.4929
0.8176	6.3302	1.3312	5.0346	1.7280	4.8495
0.9870	5.5029	1.5463	4.2860	1.9504	4.1585
1.1847	4.6404	1.8037	3.5094	2.2150	3.4241
1.4239	3.7522	2.1275	2.7021	2.5460	2.6488
1.7292	2.8445	2.5710	1.8570	2.9973	1.8290
2.1543	1.9211	3.3039	0.9618	3.7389	0.9533
2.8698	0.9775	6.0000	0.0699	6.0000	0.1085
6.0000	0.0447	NA	NA	NA	NA

[Figure 11.A.28](#) plots TIF by scale score for grade eleven mathematics. The data used to create this graph is found in the table that immediately follows, [Table 11.A.28](#).

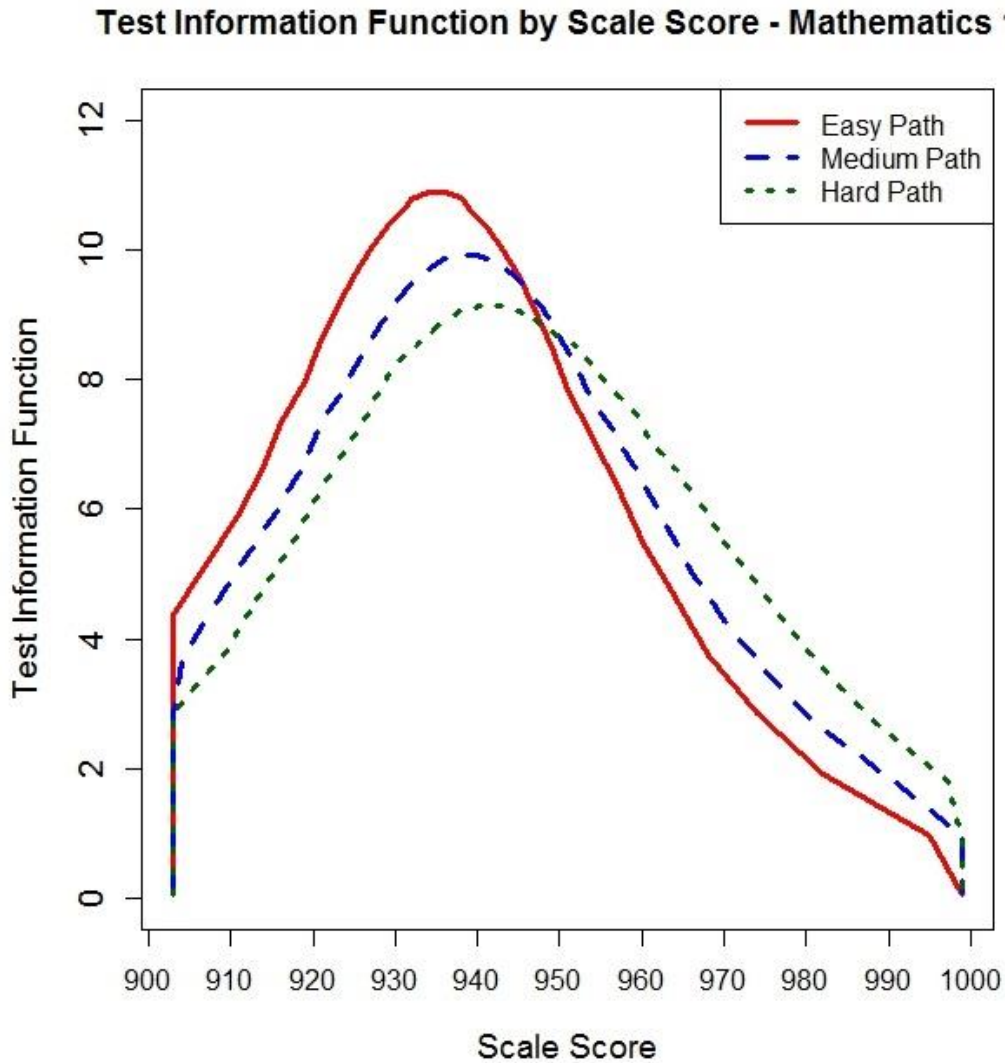


Figure 11.A.28 TIF by Scale Score—Mathematics, Grade Eleven

Table 11.A.28 Mathematics, Grade Eleven Scale Score TIF Data

Scale Score Easy	TIF Easy	Scale Score Medium	TIF Medium	Scale Score Hard	TIF Hard
903	0.1115	903	0.0794	903	0.0614
903	0.9619	903	0.9777	903	0.9788
903	1.8629	903	1.9167	903	1.9280
903	2.7242	903	2.8229	903	2.8539
903	3.5577	904	3.6952	909	3.7488
903	4.3689	908	4.5289	913	4.5992
907	5.1575	912	5.3179	917	5.3928
911	5.9201	916	6.0558	920	6.1198
914	6.6511	919	6.7375	923	6.7719
916	7.3441	921	7.3602	926	7.3451
919	7.9933	924	7.9207	928	7.8373
921	8.5909	926	8.4162	930	8.2475
923	9.1318	928	8.8459	933	8.5774
925	9.6101	930	9.2074	935	8.8290
927	10.0200	932	9.4991	937	9.0058
929	10.3571	934	9.7183	939	9.1117
931	10.6168	936	9.8629	941	9.1513
932	10.7952	938	9.9310	943	9.1293
934	10.8893	940	9.9205	945	9.0502
936	10.8967	942	9.8303	947	8.9182
938	10.8156	944	9.6600	949	8.7362
939	10.6453	946	9.4101	952	8.5065
941	10.3861	948	9.0824	954	8.2295
943	10.0392	950	8.6805	956	7.9046
945	9.6068	952	8.2084	959	7.5299
947	9.0924	954	7.6725	961	7.1029
949	8.5004	957	7.0794	964	6.6215
951	7.8382	960	6.4372	967	6.0844
954	7.1118	963	5.7532	970	5.4929
957	6.3302	966	5.0346	974	4.8495
960	5.5029	970	4.2860	978	4.1585
964	4.6404	975	3.5094	983	3.4241
968	3.7522	981	2.7021	989	2.6488
974	2.8445	990	1.8570	997	1.8290
982	1.9211	999	0.9618	999	0.9533
995	0.9775	999	0.0699	999	0.1085
999	0.0447	NA	NA	NA	NA