

APPENDIX G

HISTORY  
SOCIAL SCIENCE  
FRAMEWORK

FOR CALIFORNIA PUBLIC SCHOOLS  
*Kindergarten Through Grade Twelve*

**Adopted by the California State Board of Education  
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## APPENDIX G

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# California Education and the Environment Initiative

### **Environmental Principles and Concepts – December 12, 2004**

Assembly Bill 1548 (Pavley, Chapter 665, Statutes of 2003)

Assembly Bill 1721 (Pavley, Chapter 581, Statutes of 2005)

Environmental Principles and Concepts developed by the California Environmental Protection Agency and adopted by the State Board of Education (*Public Resources Code* Section 71301)

The environmental principles examine the interactions and interdependence of human societies and natural systems. The nature of these interactions is summarized in the Environmental Principles and Concepts (EP&Cs) that are presented below.

### **Principle I. People Depend on Natural Systems**

The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services. As a basis for understanding this principle:

**Concept a.** Students need to know that the goods produced by natural systems are essential to human life and to the functioning of our economies and cultures.

**Concept b.** Students need to know that the ecosystem services provided by natural systems are essential to human life and to the functioning of our economies and cultures.

**Concept c.** Students need to know that the quality, quantity and reliability of the goods and ecosystem services provided by natural systems are directly affected by the health of those systems.

### **Principle II. People Influence Natural Systems**

The long-term functioning and health of terrestrial, freshwater, coastal and marine ecosystems are influenced by their relationships with human societies. As a basis for understanding this principle:

**Concept a.** Students need to know that direct and indirect changes to natural systems due to the growth of human populations and their consumption rates influence the geographic extent, composition, biological diversity, and viability of natural systems.

**Concept b.** Students need to know that methods used to extract, harvest, transport, and consume natural resources influence the geographic extent, composition, biological diversity, and viability of natural systems.

**Concept c.** Students need to know that the expansion and operation of human communities influences the geographic extent, composition, biological diversity, and viability of natural systems.

**Concept d.** Students need to know that the legal, economic, and political systems that govern the use and management of natural systems directly influence the geographic extent, composition, biological diversity, and viability of natural systems.

### **Principle III. Natural Systems Change in Ways That People Benefit from and Can Influence**

Natural systems proceed through cycles that humans depend upon, benefit from and can alter. As a basis for understanding this principle:

**Concept a.** Students need to know that natural systems proceed through cycles and processes that are required for their functioning.

**Concept b.** Students need to know that human practices depend upon and benefit from the cycles and processes that operate within natural systems.

**Concept c.** Students need to know that human practices can alter the cycles and processes that operate within natural systems.

#### **Principle IV. There Are No Permanent or Impermeable Boundaries That Prevent Matter from Flowing Between Systems**

The exchange of matter between natural systems and human societies affects the long-term functioning of both. As a basis for understanding this principle:

**Concept a.** Students need to know that the effects of human activities on natural systems are directly related to the quantities of resources consumed and to the quantity and characteristics of the resulting byproducts.

**Concept b.** Students need to know that the byproducts of human activity are not readily prevented from entering natural systems and may be beneficial, neutral, or detrimental in their effect.

**Concept c.** Students need to know that the capacity of natural systems to adjust to human-caused alterations depends on the nature of the system as well as the scope, scale, and duration of the activity and the nature of its byproducts.

#### **Principle V. Decisions Affecting Resources and Natural Systems Are Complex and Involve Many Factors**

Decisions affecting resources and natural systems are based on a wide range of considerations and decision-making processes. As a basis for understanding this principle:

**Concept a.** Students need to know the spectrum of what is considered in making decisions about resources and natural systems and how those factors influence decisions.

**Concept b.** Students need to know the process of making decisions about resources and natural systems, and how the assessment of social, economic, political, and environmental factors has changed over time.

## **Education and the Environment Curriculum Units**

The following supplemental instructional materials are available from the Education and the Environment Initiative, at the California Department of Resources Recycling and Recovery (CalRecycle) Environmental Protection Agency

Web site at <http://www.californiaeei.org>. Each unit was approved by the State Board of Education in 2010 to provide coverage of the identified history–social science standard(s). Units are also available for specific science content standards.

## **KINDERGARTEN**

**Standards K.4.5.** Demonstrate familiarity with the school’s layout, environs, and the jobs people do there.

**K.6.3.** Understand how people lived in earlier times and how their lives would be different today (e.g., getting water from a well, growing food, making clothing, having fun, forming organizations, living by rules and laws).

### **CURRICULUM UNIT: *Some Things Change and Some Things Stay the Same***

Students see that the places we live in change over time, by first looking at their school and pictures of a school like theirs 100 years ago. Students compare and contrast the school, its surroundings, and the people of a “typical” California town 100 years ago to their modern community. They become familiar with the idea that history relates to events, people, and places of other times. They also learn that the way history unfolds involves an ongoing interaction between people, their needs, and the resources that they use from their natural and physical environment.

## **FIRST GRADE**

**Standard 1.2.4.** Describe how location, weather, and physical environment affect the way people live, including the effects on their food, clothing, shelter, transportation, and recreation.

### **CURRICULUM UNIT: *People and Places***

All lessons in this unit relate locations in California to the physical and human characteristics of those places. Students learn human activities can change natural systems and how these changes can affect how people live. Information about two cities contrasts how people live in those places (looking at architecture, recreation, and jobs, for example). The unit provides an understanding of humans’ dependence on goods and services provided by natural systems.

**Standard 1.4.2.** Study transportation methods of earlier days.

### **CURRICULUM UNIT: *On the Move***

This unit focuses on transportation changes over time and how this brought

about changes to communities. Students study photos and compare past and present transportation methods. Each lesson addresses differences in past and present transportation methods to help students learn how the methods of the past and present rely on ecosystem goods and ecosystem services provided by natural systems.

## SECOND GRADE

**Standard 2.2.4.** Compare and contrast basic land use in urban, suburban, and rural environments in California.

### **CURRICULUM UNIT: *California Land Use—Then and Now***

This unit focuses on land use patterns in California and how these patterns have changed over time. Also presented are basic concepts relating to the different types of land use in urban, suburban, and rural environments in California. Human influence on natural systems is addressed via community development and how the land is used for housing, transportation, agriculture, and recreation.

**Standard 2.4.1.** Describe food production and consumption long ago and today, including the roles of farmers, processors, distributors, weather, and land and water resources.

### **CURRICULUM UNIT: *From Field to Table***

Accompanied by a mininewspaper and two grade-level readers, this unit teaches students about food production and consumption, both long ago and today. The roles of farmers, processors, distributors, weather, and land and water resources are introduced. Students also learn to recognize the relationship between human needs, components of the food production system, and the ecosystem goods and ecosystem services made available by natural systems. They study the ways that people have learned to use knowledge of natural systems to improve the quality, quantity, and reliability of food production.

**Standards 2.4.2.** Understand the role and interdependence of buyers (consumers) and sellers (producers) of goods and services.

**2.4.3.** Understand how limits on resources affect production and consumption (what to produce and what to consume).

### **CURRICULUM UNIT: *The Dollars and Sense of Food Production***

Students apply what they know about natural systems, plant growth, and food

production to solve a mystery about missing strawberries. As students work to solve the mystery, they review ways in which food production depends on the availability of natural resources and how such resources are limited. Students provide examples of how decisions about what to produce and what to consume can be affected by the quality, quantity, and reliability of the resources provided by natural systems. Students also develop a clearer understanding of the interdependence of consumers and producers.

### THIRD GRADE

**Standards 3.1.1.** Identify geographical features in their local region (e.g., deserts, mountains, valleys, hills, coastal areas, oceans, lakes).

**3.1.2.** Trace the ways in which people have used the resources of the local region and modified the physical environment (e.g., a dam constructed upstream changed a river or coastline).

#### **CURRICULUM UNIT: *The Geography of Where We Live***

This unit uses a series of wall maps to help students learn about their local region: the deserts, mountains, valleys, hills, coastal areas, oceans, and lakes. They identify the ecosystems (natural systems) that are found in their local region. The unit also explores the resources (ecosystem goods and ecosystem services) that are provided by the natural systems in their local region and their uses. Students learn about the ways that people use the resources provided by the ecosystems where they live. Finally, they look at the ways humans have changed the natural systems in their local region.

**Standard 3.2.2.** Discuss the ways in which physical geography, including climate, influenced how the local Indian nations adapted to their natural environment (e.g., how they obtained food, clothing, tools).

#### **CURRICULUM UNIT: *California Indian People—Exploring Tribal Regions***

This unit gives students and teachers tools to explore the interactions between the California Indian nations (peoples) and the components and processes of the natural system(s) in their local region. Using a series of wall maps and a grade-level reader, students identify their local region, the California Indians that lived in and around their local region (and perhaps still do), and characteristics of the natural regions in which they lived. Then, students study the ecosystem goods and ecosystem services available to the local California Indians, the resources they

came to depend upon from the natural system(s), methods they used to acquire such resources, and how they influenced the components and processes of the natural system(s) with which they interacted.

**Standards 3.5.1.** Describe the ways in which local producers have used and are using natural resources, human resources, and capital resources to produce goods and services in the past and the present.

**3.5.2.** Understand that some goods are made locally, some elsewhere in the United States, and some abroad.

**3.5.3.** Understand that individual economic choices involve tradeoffs and the evaluation of benefits and costs.

**CURRICULUM UNIT: *California’s Economy—Natural Choices***

This unit discusses the ways (past and present) in which local producers have used and are using natural resources, human resources, and capital resources to produce goods and services. Students study examples of the natural resources (ecosystem goods and ecosystem services) used by local producers. In addition, they learn to compare the costs and benefits of methods used by local producers to extract, harvest, transport, and consume natural resources. Students compare costs and benefits of producing goods—including food and other items—locally, as opposed to transporting them long distances.

**FOURTH GRADE**

**Standards 4.1.3.** Identify the state capital and describe the various regions of California, including how their characteristics and physical environments (e.g., water, landforms, vegetation, climate) affect human activity.

**4.1.5.** Use maps, charts, and pictures to describe how communities in California vary in land use, vegetation, wildlife, climate, population density, architecture, services, and transportation.

**CURRICULUM UNIT: *Reflections of Where We Live***

Lessons in this unit are tied together by the theme of “reflections”—that different aspects of human activity reflect the physical features of the environment in which they live. Students learn how human activities and structures reflect various aspects of the physical environment (water, landforms, vegetation, and climate), and that characteristics of regions in California are tied to human population density.



Activities involve the study of maps, charts, and pictures to gather information about different geographic regions and related human population density, activities (including transportation), and structures (i.e., buildings). All lessons reinforce the concept that humans have learned to live in many locations and that how they live is shaped (or influenced), in part, by the environment.

**Standard 4.2.1.** Discuss the major nations of California Indians, including their geographic distribution, economic activities, legends, and religious beliefs; and describe how they depended on, adapted to, and modified the physical environment by cultivation of land and use of sea resources.

**CURRICULUM UNIT: *California Indian Peoples and Management of Natural Resources***

This unit emphasizes modern-day California’s natural diversity. At the time of European contact, California Indian nations managed this landscape to produce a myriad of resources. Intense land management sustained communities that varied from seasonally moving extended families to permanent settlements of several thousand. The physical and social practices of California Indians emphasized productivity, sustainability, and renewal. Today, California Indians continue many of these traditions. In this unit, students compare the ecosystem goods and ecosystem services available to California Indian people of the past, their worldviews, how they used and managed resources, and examine how they established trade networks to access goods from far-off regions. Students learn how some of these practices continue to the present day.

**Standard 4.2.6.** Discuss the role of the Franciscans in changing the economy of California from a hunter-gatherer economy to an agricultural economy.

**CURRICULUM UNIT: *Cultivating California***

This unit provides an environmental framework for discussing the role of the Franciscan missionaries in changing the economy of California. Students consider how people use land and resources as they discern the far-reaching influences of the state’s economic transition from hunter-gatherer societies to agriculture. Students begin the unit by reading a story about Anaheim’s transformation from farmland to amusement parks. They then turn their attention to the economic interplay between the California Indians and the Franciscan missionaries in pre-California.

**Standard 4.3.3.** Analyze the effects of the Gold Rush on settlements, daily life, politics, and the physical environment (e.g., using biographies of John Sutter, Mariano Guadalupe Vallejo, Louise Clapp).

**CURRICULUM UNIT: *Witnessing the Gold Rush***

This unit provides a new perspective to what is often a favorite subject for teachers and students alike: the California Gold Rush. Students learn how the search for gold and the influx of settlers influenced the natural environment (rivers, forests, mountains, valleys), and placed great demands upon the state’s natural and social resources. It also addresses how individuals, government, business, and industry responded to many of the continuing, and often unanticipated, effects of the Gold Rush on California’s social, economic, political, and legal systems.

**FIFTH GRADE**

**Standard 5.4.1.** Understand the influence of location and physical setting on the founding of the original 13 colonies, and identify on a map the locations of the colonies and of the American Indian nations already inhabiting these areas.

**CURRICULUM UNIT: *Human Settlement and the Natural Regions of the Eastern Seaboard***

Students explore the human settlement and natural features of the eastern seaboard, including the physical locations of the American Indian nations and the 13 colonies from the 1600s to 1763. Students act as “naturalists,” recording examples of flora and fauna native to the eastern seaboard through excerpts from primary sources. Knowledge of the plants, animals, and the ocean services in the “New World” helps students understand what made the region attractive to Europeans and American Indians alike, and what made permanent settlement possible. The development of early economic systems in the Americas, particularly the staple crop economies, are discussed, and the increased likelihood of European encroachment into lands occupied by American Indian nations is introduced.

**Standard 5.8.4.** Discuss the experiences of settlers on the overland trails to the West (e.g., location of the routes; purpose of the journeys; the influence of the terrain, rivers, vegetation, and climate; life in the territories at the end of these trails).

**CURRICULUM UNIT: *Nature and Newcomers***

Through the perspective of the overland trail settlers in early American history, this unit teaches students to uncover connections between the natural environment (natural systems and resources) and the built environment (the ways that human beings attempt to influence the natural world). Students learn about the experiences of settlers on the trails and the factors that influence human beings when making decisions about natural resources, natural cycles, and natural processes. While investigating the physical landscape, vegetation, and climate of the major western overland trails, as well as the effects of natural cycles and processes upon the settlers, students understand the settlers' motivations for moving west.

**SIXTH GRADE**

**Standard 6.1.1.** Describe the hunter-gatherer societies, including the development of tools and the use of fire.

**CURRICULUM UNIT: *Paleolithic People: Tools, Tasks, and Fire***

In this unit, students explore the essential characteristics of scavenger/hunter-gatherer societies, including the development of tools and the use of fire. Students read a story that sets the stage for exploration of ways in which humans, dating back to their earliest ancestors, have used and influenced the environment. The unit brings to light the prehistory of humans and introduces the interaction between human culture and the natural environment. This unique perspective provides students with a broader understanding of where humans have come from and where they may be headed.

**Standard 6.1.2.** Identify the locations of human communities that populated the major regions of the world and describe how humans adapted to a variety of environments.

**CURRICULUM UNIT: *Paleolithic People: Adapting to Change***

By identifying the locations of prehistoric human communities and providing examples of factors that influenced their settlements, students learn to compare the lifestyles of different Paleolithic cultures and the ecosystem goods and services upon which they depended. The unit highlights climate change as one of the factors influencing human migration within and out of Africa. In addition, students consider how their own behaviors and activities depend on the ecosystem goods and services available to them today.

**Standard 6.2.1.** Locate and describe the major river systems and discuss the physical settings that supported permanent settlement and early civilizations.

**CURRICULUM UNIT: *Rivers Systems and Ancient Peoples***

This unit teaches students that the physical geography of certain areas positioned them to become the locations of the world's first cities. Further lessons detail the rise of agriculture and civilization. Students learn to connect cycles, flow, and the role of rivers in ecosystems to the rise of the world's oldest cities in ancient Mesopotamia and Egypt.

**Standard 6.2.2.** Trace the development of agricultural techniques that permitted the production of economic surplus and the emergence of cities as centers of culture and power.

**CURRICULUM UNIT: *Agricultural Advances in Ancient Civilizations***

This unit takes students on a journey from the earliest subsistence farms through the rise of ancient civilizations. By focusing on the effects of agricultural advancements, students learn about the importance of nature and natural cycles to the development of political, economic, religious, and social structures of the early civilizations of Mesopotamia, Egypt, and Kush. Students draw parallels between ancient and modern times by looking at the critical role of water. Although the unit focuses on ancient people, the problem-solving and critical thinking skills practiced throughout the unit are transferable skills that help students understand human reliance on natural resources in the present day.

**Standards 6.2.6.** Describe the role of Egyptian trade in the eastern Mediterranean and Nile valley.

**6.2.8.** Identify the location of the Kush civilization and describe its political, commercial, and cultural relations with Egypt.

**CURRICULUM UNIT: *Egypt and Kush: A Tale of Two Kingdoms***

Students learn about the complicated and interwoven histories of two ancient superpowers: Egypt and Kush. The unit begins with a present-day conflict that highlights the positive aspects and perils of resource competition and consumption. Students learn about the unique geography of the Nile Valley region and its myriad of natural resources that supported extensive cultures and a vast network of trade. Students also explore the ways in which civilizations throughout time have sought to control the natural environment and how those efforts have influenced their natural world.

**Standards 6.5.1.** Locate and describe the major river system and discuss the physical setting that supported the rise of this civilization.

**6.6.1.** Locate and describe the origins of Chinese civilization in the Huang-He Valley during the Shang Dynasty.

**CURRICULUM UNIT: *The Rivers and the Ancient Empires of China and India***

Students apply what they know about river systems—their processes, characteristics, and their importance to human settlement—to an exploration of the civilizations that arose in ancient India and China. By studying the physical and natural environment, students learn about geographic and climatic factors that contributed to the rise of great dynasties in both areas, and they discover the dependence of the people on the ecosystem goods and services provided by the rivers. The lessons reinforce how physical characteristics of the regions fostered the beginning of settled life and the growth of sophisticated cultures and civilizations.

**SEVENTH GRADE**

**Standard 7.2.5.** Describe the growth of cities and the establishment of trade routes among Asia, Africa, and Europe, the products and inventions that traveled along these routes (e.g., spices, textiles, paper, steel, new crops), and the role of merchants in Arab society.

**CURRICULUM UNIT: *Arabic Trade Networks: Growth and Expansions in the Middle Ages***

Beginning with a look at the unique geographical features of the Arabian Peninsula, students explore the relationships between components of the natural system and the social systems of Arabia—specifically those related to trade and commerce. Students see that the growth and expansion of Arabic trade led to the growth and expansion of human populations and Medieval cities and towns along the trade routes. They learn about the diffusion of popular goods over this vast trade network and the devastating effect of the plague on Afroeurasia’s natural and social systems.

**Standard 7.3.5.** Trace the historic influence of such discoveries as tea, the manufacture of paper, woodblock printing, the compass, and gunpowder.

**CURRICULUM UNIT: *Genius Across the Centuries***

This unit explores the influence of selected Chinese inventions and discoveries on the natural and human systems of medieval China and traces the influence of

those discoveries on the modern world. Students study about early Chinese experimentation with things found in the world around them, which produced useful goods and services. Students also discover how continued investigation led to innovations that influenced both society and natural systems. They learn how Chinese inventions have been disseminated into the modern world, influencing production methods and consumption patterns.

**Standard 7.6.3.** Understand the development of feudalism, its role in the medieval European economy, the way in which it was influenced by physical geography (the role of the manor and the growth of towns), and how feudal relationships provided the foundation of political order.

**CURRICULUM UNIT: *Managing Nature’s Bounty: Feudalism in Medieval Europe***

The direct connection between feudal relationships and the environment is examined by demonstrating how feudalism served as a mechanism for controlling access to and the use of ecosystem goods and services in medieval Europe. Using a modern example, the formation of the California Department of Fish and Game, students learn about the complexities of managing natural resources in California today, before turning their attention to the foundations of resource management that arose in feudal Europe.

Students explore life on feudal manors and at feudal markets, analyzing the connections between the ecosystem goods and service available and the placement of towns. In the final lesson, students explore feudal law for access to and the use of natural resources and what it meant to be an “outlaw” in medieval times.

**Standard 7.7.1.** Study the locations, landforms, and climates of Mexico, Central America, and South America and their effects on Mayan, Aztec, and Incan economies, trade, and development of urban societies.

**CURRICULUM UNIT: *Sun Gods and Jaguar Kings***

This unit teaches students that the diverse geography and natural resources of Central and South America set the stage for the rise of the first urban societies in this part of the world—those of the Maya, Aztec, and Inca civilizations. Students learn how the distribution of resources affected the location, land-use patterns, and settlement of locations within these landscapes. The development of social and political systems to control the production and flow of resources is discussed. These human systems and their interaction with the landscape set the stage for not

only the growth of great civilizations, but for their eventual decline. Students recognize ways in which early Meso-American societies depended on goods and ecosystem services provided by natural systems.

**Standard 7.7.3.** Explain how and where each empire arose and how the Aztec and Incan empires were defeated by the Spanish.

**CURRICULUM UNIT: *Broken Jade and Tarnished Gold***

Building on students' understanding of the diverse and resource-rich regions of Central and South America, this unit explores the rise and fall of the Aztec and Inca empires. The lessons highlight how cultural values created the empires the Spanish witnessed, as well as the ways that Spanish values and history shaped their decisions in the Americas. Students begin the unit by learning how empires manage both human and natural resources in order to concentrate wealth and power. The perspectives of each of the three empires on resource use is examined, and the role of disease on the Spanish conquest explored. Through this unit, students learn more than the facts related to the conquest; they understand how multiple factors, particularly decisions regarding the use of natural resources, shaped this critical era.

**EIGHTH GRADE**

**Standard 8.4.1.** Describe the country's physical landscapes, political divisions, and territorial expansion during the terms of the first four presidents.

**CURRICULUM UNIT: *Land, Politics, and Expansion in the Early Republic***

This unit teaches students about the physical landscape of the United States, political divisions, and territorial expansion during the terms of the first four U.S. presidents. Students also learn about factors associated with the use of natural resources, especially land, which led to expansion. Students deepen their understanding of what the promise those resources held meant to American Indians and citizens of the new republic during that time. Students also learn about the development of federal land policy and how the political concerns that existed during this time influenced the development of land ordinances. The influence of expansion on the country's physical landscapes and natural systems is also examined.

**Standard 8.6.3.** List the reasons for the wave of immigration from Northern Europe to the United States and describe the growth in the number, size, and spatial arrangements of cities (e.g., Irish immigrants and the Great Irish Famine).

**CURRICULUM UNIT: *America Grows***

Focusing on immigration from Northern Europe to the United States during the first half of the nineteenth century, this unit explores human dependence upon ecosystem goods and ecosystem services provided by natural systems. Students gain an understanding of the interrelatedness of natural and human social systems—how changes in one set of systems trigger changes in the other. Specifically, students learn how natural systems influence human social systems and how their interactions forced large numbers of Irish and Germans to emigrate to America. The lessons also explore whether the nation’s new citizens chose to settle in areas that replicated the natural systems, or the human social systems, that the immigrants had left behind in Europe.

**Standard 8.8.4.** Examine the importance of the great rivers and the struggle over water rights.

**CURRICULUM UNIT: *Struggles Over Water***

This unit teaches students about the role that the great rivers and other freshwater resources played in the United States in the early 1800s (for example, the location of towns, farming, and ranching). The lessons describe the role of scientific and technological knowledge in the establishment of water rights and provide examples of the economic, political, legal, and cultural factors that influenced decisions about water. Students also learn how the great river systems and water rights influenced the development of the West. Students see that water use and management in the West, and other parts of the United States, continues to influence the economy, politics, and legal system today.

**Standard 8.12.1.** Trace patterns of agricultural and industrial development as they relate to climate, use of natural resources, markets, and trade and locate such development on a map.

**CURRICULUM UNIT: *Agricultural and Industrial Development in the United States (1877-1914)***

This unit examines the influence of urbanization and renewed industrialization at the turn of the century on natural systems and in defining the course of the United States into the twentieth century. Students begin the unit by “visiting” the 1893 World’s Fair in Chicago, “touring” the California building, and the new technologies on display. Students look carefully at the patterns of agricultural and industrial development in the East and West as they related to climate, natural



resources, and availability of markets. They come to understand that technological advances influenced the growth of human populations and the establishment of commercial centers. Students also learn about political, economic, cultural, and environmental factors that affected technological advances in agriculture and industry during this time.

**Standard 8.12.5.** Examine the location and effects of urbanization, renewed immigration, and industrialization (e.g., the effects on social fabric of cities, wealth and economic opportunity, the conservation movement).

**CURRICULUM UNIT: *Industrialization, Urbanization, and the Conservation Movement***

Students look closely at global economic imperative of the late nineteenth and early twentieth century and its influence on the natural world through the development of the San Francisco Bay Area during this time. This examination unveils the connections between technological advances in the construction and planning of urban centers, the growth of population of those centers, and the eventual rise of a “conservation” movement. Key players in the American conservation movement—those who helped propel both public and political awareness of America’s need to preserve its natural systems—are highlighted, including John Muir.

**TENTH GRADE**

**Standards 10.3.1.** Analyze why England was the first country to industrialize.

**10.3.5.** Understand the connections among natural resources, entrepreneurship, labor, and capital in an industrial economy.

**CURRICULUM UNIT: *Britain Solves a Problem and Creates an Industrial Revolution***

In this unit, students analyze ways that natural resources, entrepreneurship, labor, and capital combined to produce key events and processes in the Industrial Revolution. Students examine England’s transition from a subsistence agricultural economy through preindustrial cottage industries and to finally industrial system. They explore the inventions that marked the development of the steam power, coal and iron, and cotton textile industries. Students discover how advancing mechanization improved the methods used to extract, harvest, transport, and produce material goods from natural resources.

**Standard 10.3.3.** Describe the growth of population, rural to urban migration, and growth of cities associated with the Industrial Revolution.

**CURRICULUM UNIT: *Growth of Population, Cities, and Demands***

This unit teaches students about the relationship between the Industrial Revolution and the growth of urban centers around the world. They study the concept of urban growth: depopulation of rural areas and migration to urban areas; the shift from an agrarian-based society to a manufacturing-based society; and they explore a change in demands for natural resources. Students examine problems that arose with the growth of the first “industrial” cities—particularly changes to natural systems—and analyze business and government solutions to these problems. They discover that the American standard of living is rooted in the Industrial Revolution, when consumerism emerged in the middle class and manufacturing replaced cottage industries and agrarian society.

**Standard 10.4.1.** Describe the rise of industrial economies and their link to imperialism and colonialism (e.g., the role played by national security and strategic advantage; moral issues raised by the search for national hegemony, Social Darwinism, and the missionary impulse; material issues such as land, resources, and technology).

**CURRICULUM UNIT: *New Imperialism: The Search for Natural Resources***

In this unit, students investigate the decision-making processes used by industrializing nations in the mid-1800s, seeking raw materials and new markets for their growing economies. They compare disparate European beliefs about the use of natural resources and examine the government regulation that resulted from the management practices of the colonizers. Students consider how nature, once changed, presented new challenges to colonial administrators, forcing them to reshape their imperial projects more generally. Throughout the unit, students are engaged in thinking critically about human reliance on natural resources and the increasing global interdependence of the era of New Imperialism.

**Standard 10.4.3.** Explain imperialism from the perspective of the colonizers and the colonized and the varied immediate and long-term responses by the people under colonial rule.

**CURRICULUM UNIT: *New Imperialism: The Control of India’s and South Africa’s Resources***

This unit focuses on colonial experiences in India and South Africa during British hegemony. Students learn how British and local people’s decisions about natural resources changed as a result of the industrialization taking place in the Western

world. They analyze a case study about the use of Mount Shasta’s resources by local residents and outside interests. Students then examine colonial India, where they learn how British and local people’s decisions regarding natural resources changed over the period of colonization and directly influenced local responses to imperialism. They examine the complexities of colonial rule in South Africa, where the British competed with other Europeans for control of the region’s gold and diamond mines. Finally, they identify key stakeholders in South Africa’s development and learn the relationship between the control over natural resources and the emerging system of racial segregation.

### **ELEVENTH GRADE**

**Standard 11.5.7.** Discuss the rise of mass production techniques, the growth of cities, the impact of new technologies (e.g., the automobile, electricity), and the resulting prosperity and effect on the American landscape.

#### **CURRICULUM UNIT: *Mass Production, Marketing, and Consumption in the Roaring Twenties***

Students explore the “Roaring Twenties” to understand the dynamics of economic change and its social, political, and environmental consequences. They examine the environmental consequences of decisions made—and not made—by industry, government, and individuals to learn about “unintended consequences” related to disposal of the waste and byproducts generated by the automobiles and other technological advancements that followed World War I. The last lesson challenges students to apply their knowledge by evaluating the pros and cons associated with plastic grocery bags and ways to prevent or remedy detrimental environmental outcomes.

**Standard 11.8.6.** Discuss the diverse environmental regions of North America, their relationship to local economies, and the origins and prospects of environmental problems in those regions.

#### **CURRICULUM UNIT: *Postwar Industries and the Emerging Environmental Movement***

The unit examines the economic boom that followed World War II, especially in agriculture and energy industries, and it explores how technological changes after World War II resulted in increased demands for natural resources. Students explore some of the economic, social, and political consequences of growing resource demands and consider the effects on the environment across the United States.

Students read a chapter from Rachel Carson’s *Silent Spring* as the basis for examining the nation’s changing perceptions about the environment and the resulting policy changes that governments implemented to mitigate environmental problems.

**Standard 11.9.7.** Examine relations between the United States and Mexico in the twentieth century, including key economic, political, immigration, and environmental issues.

**CURRICULUM UNIT: *The United States and Mexico—Working Together***

This unit teaches students about treaties and agreements between the United States and Mexico related to environmental concerns. They examine the different ways the stakeholders balance decisions while analyzing cross-boundary environmental issues. Students consider how population growth and density influence an area’s natural resources and environmental health, how environmental factors permeate political boundaries, and how environmental issues influence the relationship between the countries. Students read about the Rio Grande and, in a simulated conference, present perspectives of stakeholders concerned about water quality in the region. The final lesson focuses on the Tijuana River watershed and includes a class discussion of how actions in the rest of the border region influence U.S.–Mexico relations.

**Standard 11.11.5.** Trace the impact of, need for, and controversies associated with environmental conservation, expansion of the national park system, and the development of environmental protection laws, with particular attention to the interaction between environmental protection advocates and property rights advocates.

**CURRICULUM UNIT: *Many Voices, Many Visions: Analyzing Contemporary Environmental Issues***

This unit uses a series of case studies to teach students about the wide range of considerations and decision-making processes affecting natural resources management policies. Students develop skill in analyzing complex and controversial issues as they review expansion of Redwood National and State Parks in 1978, winter use of snowmobiles in Yellowstone National Park, and oil drilling in the Arctic National Wildlife Refuge. Each lesson approaches the complex nature of natural resource issues from a different vantage point, giving students the chance to use several different analytical skills and methods. Overall, the unit

provides students with the knowledge and skills they need in order to evaluate future resource management issues.

#### **TWELFTH GRADE: PRINCIPLES OF AMERICAN DEMOCRACY**

##### **Standards 12.2.2.** Principles of American Democracy

Explain how economic rights are secured and their importance to the individual and to society (e.g., the right to acquire, use, transfer, and dispose of property; right to choose one’s work; right to join or not join labor unions; copyright and patent).

##### **12.2.5.** Principles of American Democracy

Describe the reciprocity between rights and obligations; that is, why enjoyment of one’s rights entails respect for the rights of others.

#### **CURRICULUM UNIT: *This Land Is Your Land***

Students explore case studies about California laws, regulations, policies, and decision-making processes related to environmental decisions and individual rights. Students consider the “balance” between an individual’s use and management of natural resources and the “common good.” They explore the reciprocity between rights and obligations to ensure public health and safety. Students learn that such decisions are influenced by a spectrum of factors, including laws, policies, financial incentives, risk analyses, knowledge, and rights and responsibilities. Analysis of the history of the Sunshine Canyon Landfill is the basis for examining conflicts over environmental issues that result from competing perspectives.

##### **Standard 12.3.2.** Principles of American Democracy

Explain how civil society makes it possible for people, individually or in association with others, to bring their influence to bear on government in ways other than voting and elections.

#### **CURRICULUM UNIT: *Active Voices: Civil Society and the Natural Environment***

Students examine case studies related to how citizens have influenced governmental decisions related to environmental issues in ways other than voting. Using a set of California specific case studies, students examine how citizens voice their needs for social and environmental justice. They build an understanding of the ways in which citizens make their voices heard, including methods that involve interaction with formal governmental processes and strategies that educate and

galvanize public opinion. Finally, students, analyze commonalities and differences among the unit’s environmental case studies, including differences in strategies that various stakeholders chose to implement.

**Standard 12.7.6.** Principles of American Democracy

Compare the processes of lawmaking at each of the three levels of government, including the role of lobbying and the media.

**CURRICULUM UNIT: *Making and Implementing Environmental Laws***

This unit examines lawmaking processes and roles of federal, state, and local governments related to environmental and public health. Students read about federal and state Superfund laws and Superfund sites in California as a means of comparing different levels of government. They explore the complex relationship between state, federal, and local governments in resolving environmental issues. The final lessons analyze California’s Brownfields Program and explore California’s Green Chemistry Initiative, and policy strategy for encouraging industry to use “green,” rather than potentially toxic, materials.

**TWELFTH GRADE: ECONOMICS**

**Standard 12.1.4.** Economics

Evaluate the role of private property as an incentive in conserving and improving scarce resources, including renewable and nonrenewable natural resources.

**CURRICULUM UNIT: *Private Property and Resource Conservation***

Students explore economic issues as they relate to resource conservation. Students examine how Californians have dealt with water ownership in the 150 years since statehood. The unit focuses on the possible consequences of common ownership of resources, including possible degradation and resource depletion. Students see how water in the state came to be defined as a public, not a private, good. They also learn about land trust and other incentives that encourage private property owners to care for their natural resources. At the end of the unit, students use what they have learned to research and analyze ownership and use of a resource in their community over time.

**Standards 12.2.2.** Economics

Discuss the effects of changes in supply and/or demand on the relative scarcity, price, and quantity of particular products.

### 12.2.7. Economics

Analyze how domestic and international competition in a market economy affects goods and services produced and the quality, quantity, and price of those products.

#### **CURRICULUM UNIT: *Sustaining Economies and the Earth's Resources***

Students study “sustainable economics,” an economic system with a focus of sustaining ecosystem goods and services over a long period of time. By examining a case study about the U.S. and international fishing industries, they learn about economic forces and our dependence on natural systems. They analyze the relationship among supply, demand, scarcity, and price to learn about making informed decisions as consumers. In subsequent lessons, students apply their knowledge about ecosystem dynamics to an investigation about industry practices on ocean resources and marine ecosystems. The final lesson examines the function of regulatory measures in sustaining both the natural systems and the fishing industry for future generations.

#### **Standard 12.3.1. Economics**

Understand how the role of government in a market economy often includes providing for national defense, addressing environmental concerns, defining and enforcing property rights, attempting to make markets more competitive, and protecting consumers' rights.

#### **CURRICULUM UNIT: *Government and the Economy: An Environmental Perspective***

This unit focuses on understanding the role of government in a free-market economy from the perspective of addressing environmental concerns. Students examine the fiscal policies, incentives, and market forces used by government to influence business activities that affect the natural environment. Students consider the pros and cons of a new approach toward environmental protection—one that uses market mechanisms. Emissions trading (for example, cap-and-trade) gives businesses incentives to comply with environmental standards while also allowing them flexibility in compliance.