The World Around Me

Students discover that Earth is made up of land, air, and water. It is also where mountains, forests, rivers, lakes, oceans, coasts, valleys, and deserts are found—all of which exist within California. Students explore the characteristics of each ecosystem and relate those characteristics to what they see in their local environment. The eight ecosystems are illustrated in a set of “alphabet cards.” Students record their knowledge about each ecosystem they study—as well as the human uses of each ecosystem—in the E is for Earth workbook, also provided with the unit.

A Day In My Life

This unit begins with students reciting a poem about the water they use every day and what the source of that water is. Students consider how water, along with soil, air, plant, and animal resources, are fundamentally important for life. They learn the concept of a “resource,” where specific resources come from, and that the resources they use are linked to natural systems. Students identify resources from Earth that are used every day and the ways in which resources can be conserved.

Some Things Change and Some Things Stay the Same
History-Social Science Standard: K.4.5. and K.6.3.

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.
Surviving and Thriving
Supports NGSS: 1-LS1, 2-LS4.

This unit explores the ability of living things to meet their basic needs. Activities in this unit include a shared reading of a book about beavers, close observation of photographs that show the external features of animals and plants, and a survey of the schoolyard. Students discover that there must be a good fit between the physical features of plants and animals and the characteristics of the different environments in which they live. Students gain the understanding that healthy ecosystems offer benefits to humans as well as to the plants and animals that live there.

Finding Shelter
Supports NGSS: 1-LS1, 1-LS3.

In this unit, students explore three main ideas: a) animals, including humans, need shelter and food to survive; b) resources provided by natural systems, including other animals and plants, meet these needs; c) human activities can influence the availability of resources and shelter. A grade level reader reinforces these ideas by describing the shelter needs of an endangered California bird. Students discover that humans find (and build) shelter in the same natural systems as other living organisms. They consider how healthy ecosystems benefit humans, as well as the plants and animals living there, and that people can and have helped animals meet their needs for shelter in a variety of ways.

Open Wide! Look Inside!

This unit brings a unique approach to how students can determine what animals eat from the shapes of their teeth. A big book is included that provides three separate stories and striking photographs to capture students’ interest and attention. Students discover that animals meet their needs for food within their habitat in different ways; that different types of teeth are used for a different function, some for chewing and others for ripping and cutting. Students also study ways human activities influence habitats and affect animals’ ability to find food, and that human activities can influence animals’ food supplies.
People and Places
History-Social Science Standard: 1.2.4.

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.

On the Move
History-Social Science Standard: 1.4.2.

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.
Cycle of Life
Supports NGSS: 2-LS2, 3-LS1.

In this unit, students explore an engaging reader about animal life cycles. They consider why these cycles are, in fact, vital to the survival of all species. By introducing this subject matter in the context of humans’ dependence on healthy natural systems, students see that plant and animal reproduction helps feed them, keep them warm, and shelter them. Furthermore, they understand humans’ place in the system.

Alike and Different
Supports NGSS: 2-LS4, 3-LS3.

Three woodland species—the ermine, mule deer, and cowbird—introduce students to the ideas of adaptation and variation. Spotlighting adaptation as the big idea of this unit, the grade-level reader reinforces the lessons. Students discover that some inherited characteristics are essential to survival; an animal’s environment can influence some characteristics; and that variations exist among individuals of a population. Students also consider that many characteristics of an organism are inherited from its parents, and they identify some of these characteristics.

Flowering Plants in Our Changing Environment
Supports NGSS: 2-LS2, 3-LS1, 3-LS3.

This unit allows students to explore the environmental factors that affect the ability of flowering plants to grow and reproduce. The leveled reader shows students how a familiar fruit from an historic California tree has been affected by environmental changes over its long life span. Students also discover how human-triggered changes to the environment can help or hurt the growth and development of flowering plants.
The Earth Rocks
Supports NGSS: 2-PS1, 2-ESS1.

Students examine the properties of rocks and minerals, how rock types and mineral content may change, and how they influence the ways rocks and minerals function in natural and human systems. They also identify several properties of rocks and minerals, describe ways those properties change, and show the influence these properties have on the use of a rock or mineral. Students also discuss ways that people depend on rocks and minerals.

California's Lands: Then and Now
History-Social Science Standard: 2.2.4.

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.

From Field to Table
History-Social Science Standard: 2.4.1.

Accompanied by a mini-newspaper 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.
The Dollars and Sense of Food Production

History-Social Science Standards: 2.4.2 and 2.4.3.

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.
Structures for Survival in a Healthy Ecosystem

Supports NGSS: 3-LS4, 4-LS1.

A healthy natural system is essential to help plants and animals survive the process of growth and reproduction. In this unit students discover that adaptations are only made in the context of the natural system of the species. These adaptations only lead to survival if the needs of the plant or animal are met by its ecosystem. Plants and animals must be able to grow and reproduce to survive as a species. Each species has developed structures that help individuals in a population to grow, survive to reproductive age, and reproduce. This applies not only to plants and animals, but to humans and human communities.

Living Things in Changing Environments

Supports NGSS: 3-LS4, 4-ESS3.

This unit is focused on how living things (including humans) can cause changes in the environments in which they live. Students consider how changes to the environment, caused by living things, can have beneficial, detrimental, or neutral effects on other organisms. The lessons explore examples of animals or plants that have not survived as the result of a change to their environment. Habitat restoration is described as a process that can sometimes be used to make it possible for plants and animals to survive and reproduce in areas where they once could not.

Unit Components

- Teacher’s Edition
- Teacher’s Masters
- Student Workbook
- Dictionary
- Word Wall Cards
- Readers
- Visual Aids
- Information Cards
- NGS Wall Map: Habitats
- Common Core Correlation Guide
The Geography of Where We Live
History-Social Science Standards: 3.1.1. and 3.1.2.

This unit uses a series of wall maps to help students explore 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 discover 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.

California Indian People: Exploring Tribal Regions
History-Social Science Standard: 3.2.2.

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.

California’s Economy: Natural Choices
History-Social Science Standards: 3.5.1., 3.5.2., and 3.5.3.

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.
Plants: The Ultimate Energy Resource
Supports NGSS: 5-LS2, 5-PS3.

Plants are the primary source of matter and energy entering most food chains. This unit explores and builds on this concept, looking at California’s agricultural industry, the role of plants in food chains, and the needs of living things. Students examine how all organisms, including people, consume energy and matter, and how natural systems are the ultimate source of those resources.

The Flow of Energy Through Ecosystems
Supports NGSS: 4-LS1, 5-LS2, 5-ESS3.

In this unit students explore ecosystems and how organisms get food to survive and grow. Students discover that living organisms depend on one another and on their environment for survival. They also observe that the components of an ecosystem, and the interactions among them, produce the resources required for living organisms within a natural system. How organisms compete with each other in food webs for their food is discussed, and students examine the role that humans can play in the health of an ecosystem.

Life and Death with Decomposers
Supports NGSS: 5-LS2, 5-ESS3, 3-5-ETS1.

This unit focuses on decomposers and their role in breaking down matter. Students explore the relationship between decomposers and humans through a story about Californians who generate compost from their food scraps and then use the compost in gardens to grow more food. Students use several models to study decomposition and connect the contributions of decomposers within natural systems to the health and continuation of those systems. Students identify several human practices that depend on decomposition and the work of decomposers, such as agriculture and waste management.
Microorganisms and the Human World
This unit examines microorganisms as a major component of many processes and cycles. Students read about San Francisco sourdough bread, which introduces the process of fermentation, an important ecosystem service that microorganisms provide. Students discover that while some microorganisms may be harmful, most do not cause disease and many are beneficial. Students also examine how microorganisms provide ecosystem services essential to human communities and societies, including food production, waste treatment, and the production of pharmaceuticals.

Reflections of Where We Live
History-Social Science Standards: 4.1.3. and 4.1.5.
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.

California Indian Peoples and Management of Natural Resources
History-Social Science Standard: 4.2.1.
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.
Cultivating California
History-Social Science Standard: 4.2.6.
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.

Witnessing the Gold Rush
History-Social Science Standard: 4.3.3.
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 our 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.
Earth’s Water
Supports NGSS: 5-ESS2, 5-ESS3, 3-5-ETS1.

Students read about Los Angeles and Southern California and the need to access increasing supplies of water from terrestrial sources despite their proximity to the vast Pacific Ocean and hundreds of miles of coastal estuaries, wetlands, and marshes. The unit also focuses on where water is located, whether that water is available for human use, what goods and services water ecosystems provide for people, and ways that people manage water for the present day and for the future. Students explore the water cycle, availability of fresh water, salinity and density of water, and the interaction of humans with freshwater, coastal, and marine ecosystems. They also examine how water management practices on land contribute to some of the changes occurring in marine ecosystems.

Changing States: Water, Natural Systems, and Human Communities
Supports NGSS: 5-PS1, MS-ESS2.

This unit provides students with the opportunity to explore two primary ways water moves through the water cycle—evaporation and condensation—and how this movement of water is connected to humans and human communities. Students use their experiences with the water cycle to build a real-world understanding that natural systems proceed through cycles that humans depend upon, benefit from, and can alter. In doing so, students consider the relevance of the water cycle to human communities and their own lives.

Precipitation, People, and the Natural World
Supports NGSS: 5-ESS2, MS-ESS3, MS-LS2.

This unit teaches students about precipitation and its importance in California. Students explore the many different natural precipitation patterns that exist in California and the rich variety of ecosystems that depend on these precipitation patterns for their proper functioning. For example, fresh water from precipitation is vital to California’s important agriculture industry. Residential centers such as Los Angeles, San Diego, Sacramento, and San Francisco would not have been possible without snowfall in the Sierra Nevada. Students also discover how human activities influence the quantity, distribution, and chemical characteristics of the precipitation.
Our Water: Sources and Uses
Supports NGSS: 5-ESS3, MS-ESS2.

Most people in California live in areas where precipitation is low. In this unit students identify sources of fresh water and describe the reservoirs of Earth’s water and the variations in the ten hydrological regions of California. They discover that water moves from one natural reservoir to another over time. Students brainstorm about ways in which humans use water and learn that the availability of fresh water is limited because some of it is trapped in ice at the poles, in glaciers, and in the atmosphere and that most of Earth’s water is comprised of ocean salt water. The lessons provide students with a broader perspective of fresh water resource management, in which natural systems and human communities interact.

Human Settlement and the Natural Regions of the Eastern Seaboard
History-Social Science Standard: 5.4.1.

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.

Nature and Newcomers
History-Social Science Standard: 5.8.4.

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.
The Dynamic Nature of Rivers
Supports NGSS: MS-ESS2, MS-ESS3, MS-ETS1.

This unit explains how rivers move materials within a watershed and provides a context for understanding why particular locations have been found throughout history to be more suitable for habitation than others. Students explore the natural cycles of river systems and analyze how humans benefit from, and manipulate, these systems. Examining the original development of cities and great societies helps students understand some of the complex issues of today with ever-increasing populations and heavier exploitation of natural resources. The unit builds interdisciplinary global thinking by connecting the physical nature of rivers to history and development. California river systems are used as illustrative examples, and the principles presented can be applied to any system—from the Nile Delta to the gorges of the Yangtzi.

Energy: Pass It On!
Supports NGSS: MS-LS2, MS-ESS3.

Students examine the roles that populations of organisms fill in ecosystems. Humans are among the organisms that influence Earth’s ecosystems and other organisms living within them. Human actions influence the health and functioning of ecosystems; conversely, humans are dependent upon ecosystems for food and materials. Students gain an understanding of how all living things, including humans, depend on both the physical environment and the interactions among organisms.

Playing the Same Role
Supports NGSS: MS-LS2.

Students analyze the roles organisms play in ecosystems within a new context—biomes. A biome, such as a tundra, desert, or prairie, is a group of similar ecosystems. Students discover that climate and latitude determine the location and character of different biomes, as well as the plants and animals living within them. Students explore the effects of human activities on various ecological roles and on the transfer of matter.
Energy: It’s Not All the Same to You!
Supports NGSS: MS-PS3, MS-ESS3, MS-ETS1.
This unit begins with an exploration of the current energy sources used by California utility companies to provide electricity. Students examine a variety of energy sources that are available to generate electricity and discover that there are costs and benefits in using any and all of them. Students consider that the conversions necessary to create useful energy—electricity—from these natural energy sources create additional variables that must be assessed in a cost/benefit analysis. In a supplemental lesson, students consider the various energy sources used to power California’s transportation and the pros and cons of each option.

Energy and Material Resources: Renewable or Not?
Supports NGSS: MS-LS2, MS-ESS3.
To many students, resources are simply “there,” available for use when people choose to use them. This unit gives students new ways to explore the resources we use, beginning with the understanding that they come from natural systems. The unit provides opportunities for students to consider different ways in which natural resources may be categorized as renewable, nonrenewable, or inexhaustible, and evaluated as commodities. In addition, students discover that ongoing use of resources is inextricably intertwined with human practices, management, and technological developments—all of which affect natural systems.

Made from Earth: How Natural Resources Become Things We Use
Supports NGSS: MS-PS1, MS-ESS3, MS-ETS1, MS-LS2.
In this unit students explore the importance of natural resources to their personal lives. The unit begins with a story about the manufacturing of a California icon: the surfboard. Through an exploration of the manufacturing process of popular products, students understand the crucial role of natural resources and energy in creating goods. Students also discover that the level of human consumption of resources influences the future of resources.
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 our 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 we have come from and where we may be headed.

Paleolithic People: Adapting to Change
History-Social Science Standard: 6.1.2.

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.

River Systems and Ancient Peoples
History-Social Science Standard: 6.2.1.

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.
Agricultural Advances in Ancient Civilizations

History-Social Science Standard: 6.2.2.

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.

Egypt and Kush: A Tale of Two Kingdoms

History-Social Science Standards: 6.2.6. and 6.2.8.

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 positives 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 their natural environment and how those efforts have influenced their natural world.

The Rivers and Ancient Empires of China and India

History-Social Science Standards: 6.5.1. and 6.6.1.

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 emphasizing the physical and natural environment, students learn about geographic and climatic factors that contributed to the rise of great dynasties in both areas, and 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.