

California Wildlife: K-8th

- Students learn scientific facts about California wildlife and make observations of taxidermy, bio-facts, and photos to describe and compare patterns and answer questions about the natural world.
- Students will learn to describe and identify the challenges and threats wildlife face in their habitats.
- Students learn about what animals need in their habitats and how their specific body parts and behaviors (*adaptations*) help them survive in their habitats.
- Students learn about human impact on the environment and share ideas of how we can have a positive impact and help wildlife.

Grade	NGSS Disciplinary Core Idea	Examples
K	<p>LS1.C: Organization for Matter and Energy Flow in Organisms - All animals need food in order to live and grow. They obtain their food from plants or from other animals. (K-LS1-1)</p> <p>ESS2.E: Biogeology - Animals can change their environment. (K-ESS2-2)</p> <p>ESS3.C: Human Impacts on Earth Systems - Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3)</p> <p>ESS3.A: Natural Resources - Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)</p>	<p>LS1.C <i>Students are introduced to the concepts of carnivore, herbivore, and omnivore and their interconnected relationships.</i></p> <p>ESS2.E <i>Students learn that beavers can change their habitat entirely by damming rivers and streams to create reservoirs.</i></p> <p>ESS3.C <i>Students learn that pets should not be released into the wild, and that releasing pets can impact the environment.</i></p>

		<p>ESS3.A <i>Students learn that the wood humans harvest from the environment contributes to deforestation that can reduce habitats for creatures like the Spotted Owl.</i></p>
1st	<p>LS1.A: Structure and Function - All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. (1-LS1-1)</p> <p>LS1.B: Growth and Development of Organisms - Adult animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-1)</p> <p>LS1.D: Information Processing - Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive.</p> <p>LS3.A: Inheritance of Traits - Young animals are very much, but not exactly, like their parents. (1-LS3-1).</p>	<p>LS1.A <i>Students learn that some animals like owls have specialized feet to help them grip their prey.</i></p> <p>LS1.B <i>Students learn that opossums spend their first weeks of life developing in a pouch and later go on to ride on the back of their mother to stay safe from predators and stay together.</i></p> <p>LS1.D <i>Students learn that skunks have poor vision but excellent hearing and smell to detect predators and spray if necessary.</i></p> <p>LS3.A <i>Students learn about the metamorphosis based life cycle of frogs and toads.</i></p>
2nd	<p>LS4.D: Biodiversity and Humans - There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)</p> <p>LS2.A: Interdependent Relationships in Ecosystems - Plants depend on animals for pollination or to move their seeds around. (2-LS2-2)</p>	<p>LS4.D <i>Students learn about a variety of California's native wildlife like opossums, deer, owls, sharks, quail, and vultures.</i></p> <p>LS4.D <i>Students learn about the many different habitats California's wildlife inhabit.</i></p> <p>LS2.A <i>Students learn about the interdependence of plants and animals. For example, Anna's Hummingbirds pollinate many</i></p>

		<i>species of flowers as they feed on their nectar.</i>
3rd	<p>LS1.B: Growth and Development of Organisms - Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1)</p> <p>LS2.C: Ecosystem Dynamics, Functioning, and Resilience - When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (secondary to 3-LS4-4)</p> <p>LS2.D: Social Interactions and Group Behavior - Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. (Note: Moved from K–2.) (3-LS2-1)</p> <p>LS3.A: Inheritance of Traits - Many characteristics of organisms are inherited from their parents. (3-LS3-1) Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (3-LS3-2)</p> <p>LS3.B: Variation of Traits - Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1) The environment also affects the traits that an organism develops. (3-LS3-2)</p> <p>LS4.B: Natural Selection - Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)</p> <p>LS4.C: Adaptation - For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)</p> <p>LS4.D: Biodiversity and Humans - Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)</p>	<p>LS1.B <i>Students learn about the metamorphosis of a bullfrog.</i></p> <p>LS2.C <i>Students learn how invasive species can thrive in locations where habitat degradation is threatening native wildlife.</i></p> <p>LS2.D <i>Students learn how the California Quail live in groups to help protect themselves from predators.</i></p> <p>LS3.A <i>Students learn about how Northern Flickers can have different colored feather shafts based on their diet. Flickers in the east and west vary because they feed on different colored foods.</i></p> <p>LS3.B <i>Students learn how owls can turn their heads 270 degrees to be able to see all around them in their environment, an advantage in hunting.</i></p> <p>LS4.B <i>Students learn about the behavioral and physical adaptations that help seals to stay warm; seals with more blubber are more likely to survive than seals who have less.</i></p> <p>LS4.C <i>Students learn about many adaptations California wildlife have to survive including how predators' eyes tend to be in the front to help them hunt.</i></p> <p>LS4.D <i>Students learn how human alterations</i></p>

		<p><i>to habitats have caused animals like raccoons, skunks, and opossums to have diets that include food they would never eat in the wild.</i></p> <p>LS4.D <i>Students learn how anthropogenic habitat loss can cause animals like raccoons to ignore their natural diets in favor of human garbage.</i></p>
<p>4th</p>	<p>LS1.A: Structure and Function - Animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)</p> <p>LS1.D: Information Processing - Different sense receptors are specialized for particular kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. (4-LS1-2)</p> <p>ESS2.E: Biogeology - Living things affect the physical characteristics of their regions. (4-ESS2-2)</p>	<p>LS1.A: <i>Students learn how fawns hide from predators and have no scent to help increase their chances of surviving infancy.</i></p> <p>LS1.D: <i>Students learn how Turkey Vultures have adapted to have an excellent sense of smell to better find their prey and a larger olfactory part of the brain to better identify scents.</i></p> <p>ESS2.E: <i>Students learn how beavers act as "ecosystem engineers" creating reservoirs where there was once only a river or stream.</i></p>
<p>5th</p>	<p>PS3.D: Energy in Chemical Processes and Everyday Life - The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). (5-PS3-1)</p> <p>LS1.C: Organization for Matter and Energy Flow in Organisms - Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (secondary to 5-PS3-1)</p> <p>LS2.A: Interdependent Relationships in Ecosystems - Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as "decomposers." Decomposition</p>	<p>PS3.D: <i>Students learn about the interrelationship between carnivores, omnivores, and herbivores and the way they cycle energy in the ecosystem.</i></p> <p>LS1.C: <i>Students learn that Sea Otters need to consume up to 25% of their body weight in food each day to survive and meet their energetic demands and stay warm.</i></p> <p>LS2.A: <i>Students learn that Turkey Vultures are scavengers that eat carrion to help return energy from dead organisms to the ecosystem.</i></p>

	<p>eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1)</p> <p>ESS3.C: Human Impacts on Earth Systems - Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments. (5-ESS3-1)</p>	<p>ESS3.C: <i>Students learn how releasing pets like Red-eared Sliders can have unintended impacts on the native wildlife.</i></p>
<p>6th-8th</p>	<p>LS1.B: Growth and Development of Organisms - Animals engage in characteristic behaviors that increase the odds of reproduction. (MS-LS1-4)</p> <p>LS2.A: Interdependent Relationships in Ecosystems - Organisms, and populations of organisms, are dependent on their environmental interactions both with other living things and with nonliving factors. (MS-LS2-1)</p> <p>In any ecosystem, organisms and populations with similar requirements for food, water, oxygen, or other resources may compete with each other for limited resources, access to which consequently constrains their growth and reproduction. (MS-LS2-1). Growth of organisms and population increases are limited by access to resources. (MS-LS2-1)</p> <p>LS2.B: Cycle of Matter and Energy Transfer in Ecosystems - Food webs demonstrate how matter and energy is transferred between producers, consumers, and decomposers as the three groups interact within an ecosystem. Transfers of matter into and out of the physical environment occur at every level. Decomposers recycle nutrients from dead plant or animal matter back to the soil in terrestrial environments or to the water in aquatic environments. The atoms that make up the organisms in an ecosystem are cycled repeatedly between the living and nonliving parts of the ecosystem. (MS-LS2-1)</p> <p>LS2.C: Ecosystem Dynamics, Functioning, and Resilience - Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations. (MS-LS2-4)</p>	<p>LS1.B: <i>Students learn how bucks have antlers that they use to compete for mates.</i></p> <p>LS2.A: <i>Students learn the interconnected nature of some California food webs and the interrelationship between carnivores, omnivores, and herbivores and the way they cycle energy in the ecosystem.</i></p> <p>LS2.B: <i>Students learn how the relationship between predator and prey can have an impact on population size.</i></p> <p>LS2.B: <i>Students learn how scavengers play an important role in the ecosystem by removing dead organisms that can cause illness and disease.</i></p> <p>LS2.C: <i>Students learn how animals within ecosystems altered by human influence will behave differently to adapt to the new conditions. For example, bears are more likely to seek out human trash in human dominated ecosystems.</i></p>

<p>Biodiversity describes the variety of species found in Earth's terrestrial and oceanic ecosystems. The completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health. (MS-LS2-4)</p> <p>LS4.C: Adaptation - Adaptation by natural selection acting over generations is one important process by which species change over time in response to changes in environmental conditions. Traits that support successful survival and reproduction in the new environment become more common; those that do not become less common. Thus, the distribution of traits in a population changes. (MS-LS1-4)</p> <p>ESS3.C: Human Impacts on Earth Systems - Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things. (MS-ESS3-3)</p>	<p>LS2.C: <i>Students learn how Sea Otters play an important role in keeping kelp forests healthy. They are a keystone species that consume sea urchins which prevents urchins from over consuming the kelp.</i></p> <p>LS4.C: <i>Students learn about the variety of adaptations that California wildlife have including how California Kingsnakes have adapted to be resistant to rattlesnake venom.</i></p> <p>ESS3.C: <i>Students learn about the threats facing various animals that come from human influences as well as the benefits to some animals.</i></p>
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