

Wildlife in Peril (Going Green): K-8th

- Students learn scientific facts about 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 concept of predator/prey and how biomagnification of chemical compounds can impact predators.</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 about how to help different facets of the environment including reducing pollution and using less resources.</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 how beavers' teeth are shaped like a chisel and reinforced with iron to help them eat their preferred diet of wood.</i></p> <p>LS1.B: <i>Students learn that frogs lay eggs that hatch into tadpoles that will eventually metamorphosize into frogs.</i></p> <p>LS1.D: <i>Students learn that Harbor Seals do not have external ears like Sea Lions but can still hear well and are very sensitive to disturbances.</i></p> <p>LS3.A: <i>Students learn how fawns have spots to help them camouflage that they lose once they reach adulthood.</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 bullfrogs, otters, turtles, raccoons, and sea turtles.</i></p> <p>LS2.A: <i>Students learn how plants depend on pollinators like hummingbirds to pollinate them with their long beaks.</i></p>
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>LS1.B: <i>Students learn about the metamorphosis and life cycle of a bullfrog.</i></p> <p>LS2.C: <i>Students learn how some invasive</i></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.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><i>species can thrive in locations where habitat degradation is threatening native wildlife.</i></p> <p>LS2.C: <i>Students learn how sea turtle eggs can hatch with different ratios of males and females depending on the temperature of the surrounding environment.</i></p> <p>LS2.D: <i>Students learn how Sea Otters live in groups to help protect themselves from predators.</i></p> <p>LS3.A: <i>Students learn how sea turtle eggs hatch different numbers of male and female offspring dependent on external temperature during development.</i></p> <p>LS3.B: <i>Students learn how frogs' adaptations to breathe through their skin can negatively impact their ability to withstand water pollution.</i></p> <p>LS4.C: <i>Students learn about the behavioral and physical adaptations that help seals to stay warm like blubber and hauling out.</i></p> <p>LS4.D: <i>Students learn how human alterations to habitats have caused animals like racoons to have diets that include food they would never eat in the wild.</i></p>
4th	<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.A: <i>Students learn how frogs have adapted to breathe through their skin to stay underwater longer.</i></p> <p>LS1.D: <i>Students learn how owls have very</i></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><i>large eyes to help them let in the most amount of light possible to better hunt their prey.</i></p> <p>ESS2.E: <i>Students learn how beavers create dams that change the rivers and streams into reservoirs and wetlands, changing the habitat around them.</i></p>
5th	<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 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>LS2.B: Cycles of Matter and Energy Transfer in Ecosystems - Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gasses, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment. (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>PS3.D: <i>Students learn about predator prey relationships in the ecosystem. Predators like pelicans that eat a great deal of fish are susceptible to the biomagnification of pesticides that build up in the bodies of fish from the consumption of contaminated water and plants.</i></p> <p>LS1.C: <i>Students learn that Sea Otters must eat approximately 25% of their body weight in food to survive and meet their body's energetic demands.</i></p> <p>LS2.A: <i>Students learn how the native Western Pond Turtle is impacted by the invasive red eared slider. The Red-eared Slider out competes the Western Pond Turtle for food.</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. Scavengers like Turkey Vultures are at risk for being hit by cars while consuming road kill on the side of the road.</i></p> <p>ESS3.C: <i>Students learn how frogs are impacted by pollution in the waterways and brainstorm how to reduce pollution.</i></p>

<p>6th-8th</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>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</p>	<p>LS2.A: <i>Students learn about how the native Western Pond Turtle is now listed as vulnerable due to increased competition for basking spots and food from the invasive Red-eared Slider.</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. Scavengers like Turkey Vultures are at risk for being hit by cars while consuming road kill on the side of the road.</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, raccoons will eat more human trash when in human altered areas.</i></p> <p>LS4.C: <i>Students learn about the variety of adaptations that California wildlife have including how frogs have adapted to breathe through their skin to stay underwater longer.</i></p> <p>ESS3.C: <i>Students learn about the threats facing various animals that come from human influences like how deforestation impacts the Spotted Owl.</i></p>
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	of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things. (MS-ESS3-3)	
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