

Elementary School Lesson Plan – Lesson 3

Theme: Biodiversity

Subject: Physical, Life, and Social Sciences

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| <p>Objective</p> | <p>Students understand the interconnected relationship between living and nonliving organisms in the River habitat.</p> |
| <p>Standards</p> | <p>LS 3.3.c. Students know living things cause changes in the environment in which they live: some of these changes are detrimental to the organism...and some are beneficial (human impact).</p> <p>LS 3.3.d. Students know when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.</p> <p>LS 4.2.b Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.</p> <p>LS 4.3.a Students know ecosystems can be characterized by their living and nonliving components.</p> <p>LS 4.3.b. Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.</p> <p>NGSS STANDARDS</p> <p>3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.</p> <p>3-LS2.C. (DCI) Habitat 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>3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.</p> <p>ESS2.E: Biogeology (DCI) Living things affect the physical characteristics of their regions.</p> <p>ESS3.B: Natural Hazards (DCI)</p> |

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| | <p>A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts</p> <p>5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.</p> <p>LS2.A: Interdependent Relationships in Ecosystems (DCI) ...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.</p> |
| Vocabulary | <p>Biodiversity Variety of species of plants or animals in an environment.</p> <p>Habitat A place where something or someone lives.</p> <p>Ecosystem A community of living and non-living things interacting with their environment.</p> <p>Native species A species that is naturally found in that habitat.</p> <p>Non-native species A species that is <i>not</i> naturally found in that habitat. Can be brought into the habitat by animals, people, or naturally (wind, scat).</p> <p>Invasive species A species that is non-native and harmful to the habitat. It takes resources from native species (space, sunlight, water, food).</p> <p>Food Chain A linear transfer of energy within an ecosystem</p> <p>Food web A series of interconnected food chains that show how organisms in an ecosystem transfer energy.</p> |
| Materials | <ul style="list-style-type: none"> ● Projector ● Lesson 3 powerpoint ● Worksheets ● Web of Life cards and string for activity |

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| Key Points | <ul style="list-style-type: none"> • Biodiversity was, and still is, affected by changes in the River web of life; this change can be attributed to human impact (cause and effect relationships). • Human impact has altered the environment and affected organisms' ability to reproduce and survive. Impacted species die or migrate to find resources. Some have adapted, like the native coyote. • Native species (like the ones on the biodiversity cards) have been replaced by, and have competed for habitat with, non-native and invasive species that adapted to the changing environment. Non-native species were brought into the LA River habitat by humans, spread through scat, or through migration patterns (Canadian Geese). • Food chains connect to form a food web, a system similar to a web of life. Without a single component of the food web, the system may not function. • The web of life of the LA River has been disrupted by human use through loss of habitat, introduction of non-native/invasive species, chemical contamination, and a lack of nature based solutions. • Humans can impact the ecosystem positively. |
| Possible Extensions | <ul style="list-style-type: none"> • Web of Life activity |