

Web of Life

Grades 3–5

Educational Program Guide

OAS

4-LS1-1, 5-PS3-1, 5-LS2-1, 5-LS2-2 | Science Practices 1, 2, 3, 4, 6, 7, 8

Program Overview

After discussing the basic concepts and definitions of ecosystems, students will construct a simple food chain and learn about how energy travels through an ecosystem. Then, students will work with plant and animal specimens in small groups, collect data and graph the results. The program will end with an ecosystem role playing game.

Objectives

After participating in this program, students will be able to:

- Discuss the different components of ecosystems;
- Determine the possible roles and relationships an organism may have in an ecosystem;
- Understand how an ecosystem works and why all members of that system are important and necessary.

Background

Ecosystems are all around us. Understanding how ecosystems work and process both living and nonliving matter is critical for all students. Living or nonliving, our resources come from nature. The ability of plants or producers to transform light energy into sugar energy is what drives ecosystems. All other living things depend on plants, either directly or indirectly. When an animal, or consumer, eats or consumes a plant, it takes the sugars and nutrients into its body. When another animal eats the first one, those nutrients and sugars are transferred to the body of the second animal. This is a food chain: energy and nutrients moving from one organism to the organism that eats it.

Background (cont.)

Dead matter is another problem. Decomposers are organisms that consume dead matter and decompose it back to basic elements and small particles that are then in the soil or other parts of the ecosystem and readily available for plants to absorb them again.

At the Museum

Hall of Natural Wonders

This gallery features five ecosystems: an upland stream, an oak-hickory forest, a limestone cave, a mixed grass prairie, and a short grass prairie. Ask your students to find and identify different types of living and nonliving things they see in the ecosystems. Discuss which organisms are producers and which are consumers. Of the consumers, decide which are herbivores, omnivores, or carnivores. As a class, discuss different types of food chains you could create using the living things in the exhibits.

Vocabulary

<i>Ecosystem</i>	all of the living and nonliving things interacting in a particular area
<i>Producer</i>	any green plant that makes its own food using chlorophyll and light energy
<i>Carnivore</i>	meat eater; any animal that eats only animal matter
<i>Community</i>	the living part of an ecosystem; any relationship in nature that involves plants and animals living together and interacting with one another in a particular environment

Vocabulary (cont.)

Consumer

any organism that depends directly or indirectly on food producing plants; any organism that consumes other organisms

Decomposers

a living thing that obtains food by breaking down the remains of dead organisms

Environment

all the living and nonliving factors that actually affect an individual organism at any point in its life cycle

Food Chain

transfer of energy through an ecosystem through the action of food producers, food consumers, and decomposers.; food chains interact to create a complex food web

Habitat

the physical place where an animal lives; it provides all of the resources needed for life

Herbivore

plant eater; an animal that eats only plants

Omnivore

everything eater; an animal that eats both plants and animals

Resources

substances or objects required by an organism for normal maintenance, growth, and reproduction

