



WEB OF LIFE

Grade 4 – 5 | 90 Minutes

Teacher's Guide

Description

In this fun, active class, we'll focus on the basic principles of ecology, learn how living organisms depend on one another for survival, and discuss how humans interact with the natural world. During the numerous hands-on activities, students will create food chains, become a member of one, and finally, determine how to distribute the resources of our planet in an eye-opening simulation.

Adult chaperones recommended: 2

Content Standards

Subject	Gr	Standard	Objective/"I can" Statements
Life Science	4	Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.	<ul style="list-style-type: none">• Model how changes to an organism's environment impact its likelihood of survival.
Life Science	5	Organisms perform a variety of roles in an ecosystem. All of the processes that take place within organisms require energy.	<ul style="list-style-type: none">• Participate in a survival simulation by role playing various organisms in an ecosystem.• Explore how organisms obtain energy from the ecosystem.
Climate Literacy Principles		1. The Sun is the Primary Source of Energy for Earth's Climate System 3. Life on Earth depends on, is shaped by, and affects climate	

Pre-Trip Activities

- Given a list of common organisms and a description of their environmental interactions, draw a food web using arrows to illustrate the flow of energy. Have students identify the producers and consumers.
- Use webcams to view animals in their natural habitat or simulated environments to observe and record physical characteristics of the animals as well as behavioral traits that are taught from parent to offspring. Falcon cams and bat cams are used by the Ohio Department of Natural Resources and can be used for this study.

Vocabulary

adaptation	food chain
carnivore	food web
consumer	herbivore
decomposer	organism
ecology	omnivore
ecosystem	offspring
energy	producer
environment	resource

Books

- Animal Behavior by Joseph Midtown. World Book, 2014.
- Food Chains and Webs by Louise and Richard Spilsbury. Heinemann Library, 2004.
- Plant and Animal Adaptations by Joseph Midthun & Samuel Hiti. World Book. 2014.
- Survival and Change by Steve Parker. Heinemann Library, 2006.
- "How Wolves Change Rivers"
<https://www.yellowstonepark.com/things-to-do/wolf-reintroduction-changes-ecosystem>

Post-Trip Activities at School

Have a class discussion to brainstorm ways that humans can improve the health of ecosystems (e.g., recycling wastes, establishing rain gardens, planting native species).

Extentsion Activities

- Design and build a self-sustaining ecosystem (e.g., terrarium, bottle biology). Considerations for the ecosystem include the size of the container, the location to create the proper temperature, light and humidity, and organisms that will support one another.
- Given an ecosystem, create an illustration to explain the flow of energy within that system (food web, food chain). For example, as part of research on an endangered species, the species' energy relationships could be documented in a food web. ODNR-Division of Wildlife's A to Z Species Guide has photos, and information, including diet, of Ohio's wild animals