

Web of Life

Outdoor Activity

Curriculum: Science, Literacy, Wellness



In this activity, students will understand the roles and interdependence of organisms in nature. You can keep this general or focus in on a specific ecosystem (e.g. wetland, grassland, forest).

Materials:

- Rope/string
- [Web of Life](#) cards (one for each student) representing various organisms in an ecosystem. Include producers, consumers and decomposers. Pending available time, students could design and draw/colour their own card.
- Student journals, pencils

Instructions:

- Print [Web of Life cards](#).
- Head outside to your schoolyard or nearby natural area.
- Arrange your group in a circle.

Vocabulary

Producer – green plants that make their food from sunlight using the sun's energy to make sugar.

Primary Consumer – are herbivores that feed on plants.

Secondary Consumer – are organisms that eat primary consumers for energy. They can be either carnivores or omnivores.

Decomposer – organisms that get energy from breaking down dead organic material.

- Hand out an organism card to each student. Keep the sun for you, the facilitator of the game.
- After defining and describing the roles of Producers, Primary Consumers, Secondary Consumers and Decomposers, have students read the description on the back of their card and sort themselves into groups based on their role in a food chain.
- Demonstrate a food chain by arranging four students in a row to review and demonstrate how energy that originates from the sun, moves through an ecosystem (e.g. Rose – Butterfly - Bat - Owl). Challenge students to form their own food chains.
- Discuss with students that the game they are going to play will demonstrate the difference between a food chain and food web. Arrange students in a circle and have them use the same card.
- As the leader, you represent the sun and ultimate source of energy. Pass the ball of string to a plant explaining, all producers require sunlight to grow and live.
- Ask the 'plant' to wrap the string around their hand and to pass the ball to another organism in the circle with whom that plant interacts with (for example, eaten by or depends on). If a student is stuck, anyone in the game can make a suggestion. Continue this process until each 'organism' in the circle is connected to the ecosystem. Some organisms may receive the string twice to ensure everyone is included.
- Have students take one-step backwards to ensure the string is taut.
- Review the concept of a food web (a system of interlocking food chains). Ask students to keep still. Tell them if they feel a tug, they should gently tug the string in response. Ask the first student (initial plant) who received the string, to tug gently on the rope. Any student, who feels a slight tug, should tug back in response. A vibration of tugging should spread throughout the food web. Explain to students how this vibration represents the interdependence of all the organisms.
- Ask students to predict what would happen to the food web if one of the links in the ecosystem were damaged through natural or human-made stress. (The rest of the ecosystem feels the stress).
- Provide a few scenarios to demonstrate the interconnectedness of all the organisms. For example:
 - Ask students to pick one 'organism' in the ecosystem that seems less important than the others, and have it tug on the rope (creates a ripple effect)

- The pond has been over fished and no trout are left (all fish tug)
- Fertilizers from a golf course nearby are washed into the wetland after a rainstorm. The plants respond by growing quickly (all plants tug)
- A truck carrying oil flips on the highway. The oil leaks and flows into the wetland making beaver sick (beaver tugs)
- A drought occurs. Frog and dragonfly eggs which were attached to submergent vegetation are now above the water and die (dragonflies and frogs tug)
- Others...endless

Discussion:

The ball of twine as it passed from organism to organism formed a web. Just like the complicated web of life in an ecosystem, this web shows how closely organisms interact with one another and how when one part of the web is directly impacted, there are ripple effects to all organisms throughout the web.

Learning Extension – Creative Writing

- Give students time to draw a food chain and food web in their journal
- Challenge students to write a short creative story based on their food web in their journal
- Here are a few writing prompts:
 - What happens when one of the elements goes extinct?
 - What strategies do organisms have to escape?
 - How do humans connect to your food web?