

Living Food Web

Science Standard 5, Objectives 2 and 4

Objective

Students will be able to name some plants and animals that live in Utah's desert, forest or wetland ecosystems. They will also describe the interdependence of the organisms in a food web.

Background

Plants are called *primary producers* because they produce their own food through photosynthesis. It takes an enormous number of individual plants to support the other parts of the web. At the next level of the food chain are *primary consumers*, those who eat the plants (herbivores). Primary consumers include rabbits, mice, deer and some types of insects, fish and birds. Primary consumers are eaten by *secondary consumers*, which are meat eaters (carnivores) or animals that eat both plants and meat (omnivores). These animals are predators such as birds of prey, some snakes, foxes, wild cats, and coyotes. *Tertiary consumers* eat the secondary consumers and may either be carnivores or omnivores (omnivores eat both plants and animals). Any of these components of the food web can be broken down by decomposers, small creatures and other organisms, such as bacteria and fungi, that reduce dead plant or animal matter into smaller particles. A decaying plant, for example, will be broken down into nutrients that enrich the soil, which in turn supports the growth of more plants.

Directions

1. Discuss the concept of a food web - what animals eat and who eats them. Introduce or review the terms herbivore, carnivore, omnivore, predator, prey, producer and consumer.
2. Make a list of plants and animals (birds, mammals, reptiles, amphibians, fish, insects, etc.) that live in your chosen ecosystem. (desert, wetland, or forest) Have the students research the animal's food habits and their predators.
3. On large index cards or strips of paper, write the name of each plant and animal on the list. Assign a plant or animal to each student in the class and have them tape their card to the front of their shirt.
4. Have the class stand or sit in a circle. Select a plant to begin making the web. Give that student a ball of string and have them wrap the end once around his or her hand and then pass the ball of string to something that

Materials

- Ball of string or yarn
- File cards or strips of paper

eats that plant. This student should then wrap the string around his or her hand and then pass the ball of string to either something that eats this animal or to something that it eats. Remember that many of the plants and animals should be connected to several others. (If a student receives the ball of string a second time it should be passed to a different person than he or she passed it to the first time.) Continue in this manner until you have formed a complex, living web.

5. Once the web has been completed (all possible connections have been made), have the students take a step back until the web is taut.
6. Discuss with students that sometimes the role of a plant or animal in the web will change, or it may be removed from the food web all together. What effect will this have on the web?
7. Use scenarios to describe what can happen to parts of the web when the habitat is disturbed. At each description have the students decide which organism would be affected first by the change and have the student wearing this sign tug on the string. Anyone who feels the tug should raise his or her free hand. Then have each of these students tug on the string, and so on. What there anyone who was not effected by the tugging?

Scenarios

1. A lawn care company's truck skids and crashes near a wetland, spilling hundreds of gallons of weed killer. The rain washes the chemicals into the wetland.
2. A stream is blocked by large pile of trash that someone has carelessly dumped. The part of the stream that normally flows through a wetland dries up.
3. A logging company clear-cuts the forest on the side of a mountain.
4. A fragile area of desert in Southern Utah becomes a popular area for weekend ATV use. Hundreds of ATVs drive over the area churning up sand and flattening everything in their path.