

FOOD WEB EXERCISE

Lesson By: David Brown

Grade Level: Fifth

Focus:

This lesson addresses the basic functions of the food web and a brief introduction of predator/prey relationships.

Objectives:

1. Students will understand the balance of predator/prey relationships and how it exists in the food web.
2. Students will learn about the structure of the pond food web and the organisms that participate in that food web.

Standards:

SC 5.4.2 2000

Observe and describe that some living things consists of a single cell that needs food, water, air, a way to dispose of waste, and an environment in which to live.

SC 5.4.5 2000

Explain how changes in an organism's habitat are sometimes beneficial and sometimes harmful.

SCI 5.3 2010

Observe, describe and ask questions about how changes in one part of an ecosystem create changes in other parts of the ecosystem.

SCI 5.3.1 2010

Observe and classify common Indiana organisms as producers, consumers, decomposers, predator and prey based on their relationships and interactions with other organisms in their ecosystem.

Background:

The food web shows how interdependent organisms are on other organisms that live in their habitat. On the first level there are the producers that can make their own food. This includes any type of plant and also algae that can grow on pond surfaces. The next level is first-level consumers. They can't make their own food so they are dependent on eating to get their nutrients. In this case they only eat produces. Second-level consumers eat first-level consumers. Third-level consumers eat second-level consumers and so on. If there was more of one such level than another the effect would be drastic. If you had more second-level consumers then not every creature would get a chance to eat. Another situation would be if there was more producers than consumers than their population would increase. This balance helps keep all organisms from increasing at an explosive rate but still lets them survive.

Materials:

1. Field
2. Yarn
3. Paper
4. Animal Pictures (provided on another file)

Procedure: (40 Minutes Total)

1. Students will be gathered in the large field or any other large space.
2. Explain to students how each organism is either a producer or a consumer and is vital to the food web. Explain the significance of balance between levels in the food chain and food web within the ecosystem.
3. Explain how each organism selected for this exercise is a predator, prey, producer, or consumer, and how they all have a role in the ecosystem.
4. For this activity it is important to have the right number of producers and consumers. There should be an equal number of first-level consumers and second-level consumers at this level of the game.
5. Assign each student a creature by giving them a picture of an organism in the pond food web.
6. When the game begins the students should behave as the creatures behave in the environment. The goal for the prey is to attempt to run from the predators for duration of fifteen seconds or longer as time allows, or until all predators are fed. Remember one predator gets only one prey.
7. After this round ask the class why everybody got fed.
8. For the next round put in more second-level consumers than first-level consumers. Ask the class if everybody got fed and if not what went wrong.
9. For the last round add the highest level consumer, a human. Humans are capable of hunting everything that they can get and can eat more than once.
10. After the round is over ask if everyone got fed and why that happened.
11. Finish the activity with a discussion. Ask the students why it is essential for there to be balance in the food web and why we can't have more consumers than do producers. Then ask if it was a good thing if the human was introduced into the food web and why or why not. End the discussion by emphasizing how critical it is to have balance in the food web or else many creatures would not be able to eat and survive.

Evaluation:

1. Ask the students to draw out the food chain or food web based on the animals that were in the activity.
2. Ask the students to label them as producers, first-level consumers, second-level consumers, third-level consumers, and etc.