Learning Objectives

1) Understand that organisms require energy to move, breathe, think, and grow.

2) Know that life forms inhabit areas on the earth called habitats, where food is available to them. Food is the source of energy for organisms.

3) Realize that food chains are the key to how the sun's energy is passed on to living organisms.

   a) The first link in a food chain is a producer, or plant. Plants use energy from the sun to put carbon dioxide and water together and produce sugar in a process known as photosynthesis. Sugar is the source of energy for organisms. Plants use most of the sugar to produce energy for growth, but some of it is stored in their leaves, stems, fruits, seeds, and roots; this stored sugar is passed on through the food chain.

   b) The next link in the food chain consists of an herbivore, which is an animal that eats plants. Herbivores include: cows, horse, deer, and elk.

   c) A carnivore is the next link in the food chain. Carnivores, which include lions, bears, and alligators, hunt and eat other animals.

   d) The final link in a food chain is a decomposer. Worms, insects, fungi, and microorganisms are decomposers; they eat dead plants and animals and turn them into soil and water. The soil produced by decomposers provides nutrients for new plants to grow and make sugar all over again.

   e) Example of a food chain: Grass makes sugar (producer), mouse eats grass (consumer/herbivore), owl eats mouse (consumer/carnivore), insect eats owl (decomposer).

4) Identify the difference between a food chain and a food web. Most consumers eat more than one kind of food; this means that they are a part of two or more food chains. Consequently, these food chains overlap to form a food web.

5) Understand that a food chain can be thought of as a food pyramid with a large base and a small top.

   a) The producers, or plants, are the largest group. They occupy the bottom of the pyramid and provide energy for the other levels.

   b) The herbivores are in the middle level of the pyramid. Herbivores are more numerous than the carnivores.

   c) Carnivores occupy the top level of the pyramid and are the smallest in number of all the groups.

6) Be aware that only stored energy can be passed on through the food chain. Once the energy has been used, it cannot be passed on to other levels in the pyramid.

7) Realize that food chains maintain a balance within each habitat. If a link in the chain is broken, the entire pyramid can be destroyed and the habitat can be harmed.

Suggested Activities

1) Before Viewing the Video:

   a) Discuss with the students what they had for breakfast. List on the board. The list might include fruit, cereal, toast, eggs, bacon, juice, etc. Then select students to tell the source of each of these items. For example, the bacon comes from pigs that eat plants that get their energy from the Sun. List each food at the bottom of a food chain and work back up the list, to the source of all our energy—the Sun. Watch the video to find out more about food chains.

2) After Viewing the Video:

   a) Teacher Preparation for Making Individual Food Chains: Make a master copy of one blank link in the food chain as follows: Cut out a 6" square, a 4" square, and two 1" squares. Fold the 6" square into fourths and round off the 4 open edges. Open and trace the 6" one in the center of a sheet of paper. Trace the 4" square in the center of the 6" one. Trace a 1" square at the top and bottom of the 6" one (for connecting links).

   b) Student-Made Food Chains: Discuss the video and some of the food chains shown. Each student is to color the outer band (the chain link) any color desired. (The sun link might be yellow; the plant link, green; and the animal links, brown.) Draw each picture on the inside 4" square. This is repeated for each link in the food chain. Remind the students that each food chain starts with energy from the Sun. Then select a plant for the second link, a herbivore for the third and a carnivore for the fourth. Some students may wish to make a longer and more complicated food chain. There can be several carnivores at the end of the chain. Use animal books to check what their animal eats. The chains can be hooked together for each student and hung around the room or put on a bulletin board.

   c) Writing Stories about Our Food Chains: Each student can write a factual story about what happens in her/his food chain. A booklet might be made using the "characters" and drawings from their food chains.

Vocabulary

Carnivore – An animal that obtains its energy by eating other animals

Consumer – An animal that obtains its energy by eating living things

Decomposer – An organism that eats dead plants and animals and recycles them into water and nutrients

Food Web – Two or more overlapping food chains

Habitat – A place where animals and plants live; it provides food, water, and shelter for animals, as well as water, soil, and sunlight for plants

Herbivore – An animal that obtains its energy by eating plants

Photosynthesis – A process in which plants use sunlight, water, and carbon dioxide to produce sugar

Sugar – A food that provides energy to perform activities