

Read the text and answer questions 1 through 7.

**Life in the Food Chain**  
**What Do You Have in Common with Corn, Mushrooms, Cows, and Grass?**  
by Ellen R. Braaf

Like all living things, you need energy. The energy you use to live every day travels from one living thing to another, in a chain that starts with the sun.

The energy in all your food comes from the sun, 93 million miles away. How did the sun's energy end up in the things you eat? You can thank green plants. They contain chlorophyll—a substance that traps the energy in sunlight. This energy then helps plants change water from the soil and carbon dioxide from the air into oxygen and carbohydrates that power their cells. This process is called photosynthesis.

Most plants make more food than they need. They store the extra in their roots, leaves, stems, flowers, fruit, and seeds. So, when you eat carrots, spinach, celery, cauliflower, bananas, or walnuts, some of the energy stored in plants passes on to you.

Certain bacteria also make their own food. So do most algae. Found just about everywhere on Earth—in lakes, streams, oceans, deserts, soil, boiling hot springs, snow, and ice—algae range from 200-foot-long kelp to tiny ocean plants called phytoplankton. Living things that make their own food are called producers. All others—including humans—are consumers. They need to eat other living things to survive.

### **Living Links**

Food chains link producers and consumers together. When scientists talk about food chains, they're not talking about the E-Z Burger restaurant chain. They mean the paths along which energy and nutrients pass from one living thing to another in our "eat-or-be-eaten" world. Food chains everywhere—in grasslands and deserts, oceans and tropical rainforests—begin with the producers. They are the first link.

The consumers come next, starting with the plant eaters, or herbivores, the vegetarians of the animal kingdom. Elephants grazing on grass, caterpillars munching leaves, and pandas chomping bamboo get energy directly from producers. So do the shrimplike krill that dine on one-celled plants in the ocean.

Carnivores, who consume other animals, come next. These predators get energy from plants indirectly. When an owl eats a mouse that nibbled seeds, it tops a three-link chain. But if its prey is a snake that ate a mouse that nibbled seeds, the snake becomes the third link, and the owl, the fourth.

Because all organisms use the energy they get from food to live, grow, and reproduce, only small amounts remain to pass between the living links in a food chain. That's why most chains are short—usually about two to five links—and why it takes a lot of producers at the bottom of a food chain to support a few super-carnivores at the top. It's also why life on Earth depends on a constant supply of sunlight.