NATIONAL SCIENCE EDUCATION STANDARDS

A. Science as Inquiry

Abilities necessary to do scientific inquiry
Understanding about scientific inquiry

C. Life Science

K–4

Organisms and their environments

- All animals depend on plants. Some animals eat plants for food. Other animals eat animals that eat the plants.

5–8

Populations and ecosystems

- Populations of organisms can be categorized by the function they serve in an ecosystem. Plants and some micro-organisms are producers—they make their own food. All animals, including humans, are consumers, which obtain food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use waste materials and dead organisms for food. Food webs identify the relationships among producers, consumers, and decomposers in an ecosystem.
- For ecosystems, the major source of energy is sunlight. Energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis. That energy then passes from organism to organism in food webs.

F. Science in Personal and Social Perspectives

K–4

Personal health

- Nutrition is essential to health. Students should understand how the body uses food and how various foods contribute to health. Recommendations for good nutrition include eating a variety of foods, eating less sugar, and eating less fat.

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Green
Dark green leafy vegetables, avocados, beans, and peas are all filled with healthy nutrients.

Red
Eat a variety of fruit and vegetables with red skins. Meat is often red, too.

Yellow
Oils come from grains, nuts, olives, and fish. Vegetable oils are often pale yellow.

White
Calcium-rich foods, including dairy products, are white—like milk. Fish and poultry are sometimes white, too.

Purple
Some beans, fruits, and vegetables are purple!

What other colors can you find in your food?

FOOD CHAINS

Where does our food come from? Most plants make food by changing sunlight into food. Plants are called producers because they produce food from the sun's energy. The sugar they make is the fuel they need to grow.

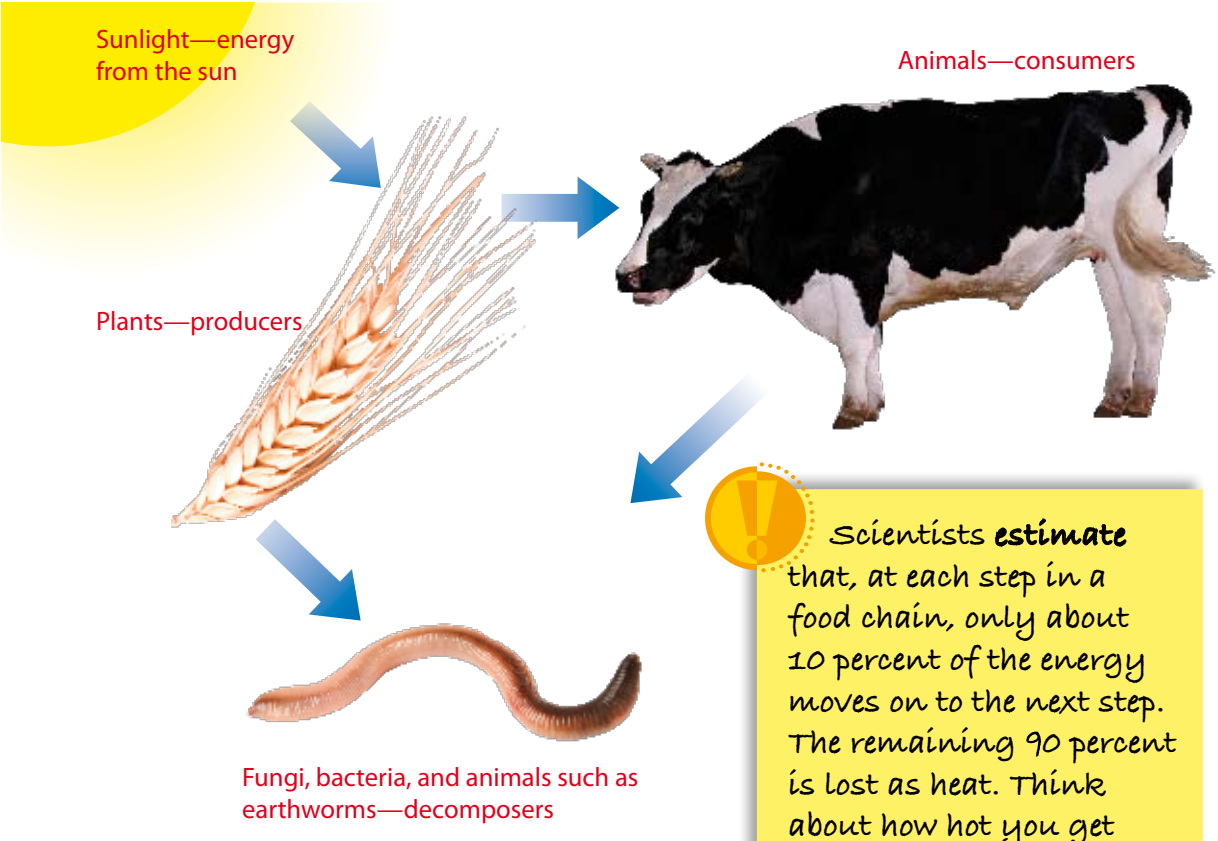
Consumers eat plants and other living things that eat plants.

When you eat a hamburger, you're consuming meat that comes from steers. Those steers ate plants for their fuel, and then their meat is fuel for your body. The food you consume gives you energy.

Decomposers eat plants and animals after the plants and animals have died. **Fungi**, **bacteria**, and animals such as earthworms are decomposers. They release nutrients from dead plants and animals back into the soil, where they are used once again by growing plants.

The movement of energy from producers to consumers to decomposers is called a food chain. Food chains link together to form a food web.

A food chain



Scientists **estimate** that, at each step in a food chain, only about 10 percent of the energy moves on to the next step. The remaining 90 percent is lost as heat. Think about how hot you get when you work hard!