

Lesson

4

The World's Biomes and Ecosystems

WHAT YOU WILL LEARN

To describe a biome and an ecosystem

READING STRATEGY

Draw a table like the one below. In the right column, write a result of the fact listed in the left column.

| FACT | RESULT |
|---|--------|
| The sun provides energy. | |
| Secondary consumers are predators. | |
| Decomposers break down dead plants and animals. | |

TERMS TO KNOW

biome, ecosystem, food chain

What kinds of plants and animals live near your community? Have you ever observed how they depend on each other?



This savanna in Kenya is an example of a grasslands biome.

What Is a Biome?

A plant and animal community that covers a large geographical area is called a **biome**. A biome has certain kinds of plants and animals. It is located in a specific climate and generally has a specific kind of soil. For example, a desert biome is located in a climate that is very dry. Cacti and shrubs are among the plants that grow there. Lizards and snakes are some of the animals that live there. A desert biome anywhere in the world will have a similar climate, as well as similar plants and animals.

Some of the major land biomes of the world include forest, grasslands, desert, and tundra. The ocean is another major biome. Look at **Figure 3-4**. It shows you the characteristics of some of the major world land biomes.

What Is an Ecosystem?

A biome can include several ecosystems. An **ecosystem** refers to all the living things and nonliving things within a certain area and the relationships among them. Living things include the plants, animals, and microbes (such as bacteria and fungi). The nonliving environment includes air, soil, water, and sunlight. An ecosystem contains everything that is needed for the plants and animals living there to survive.

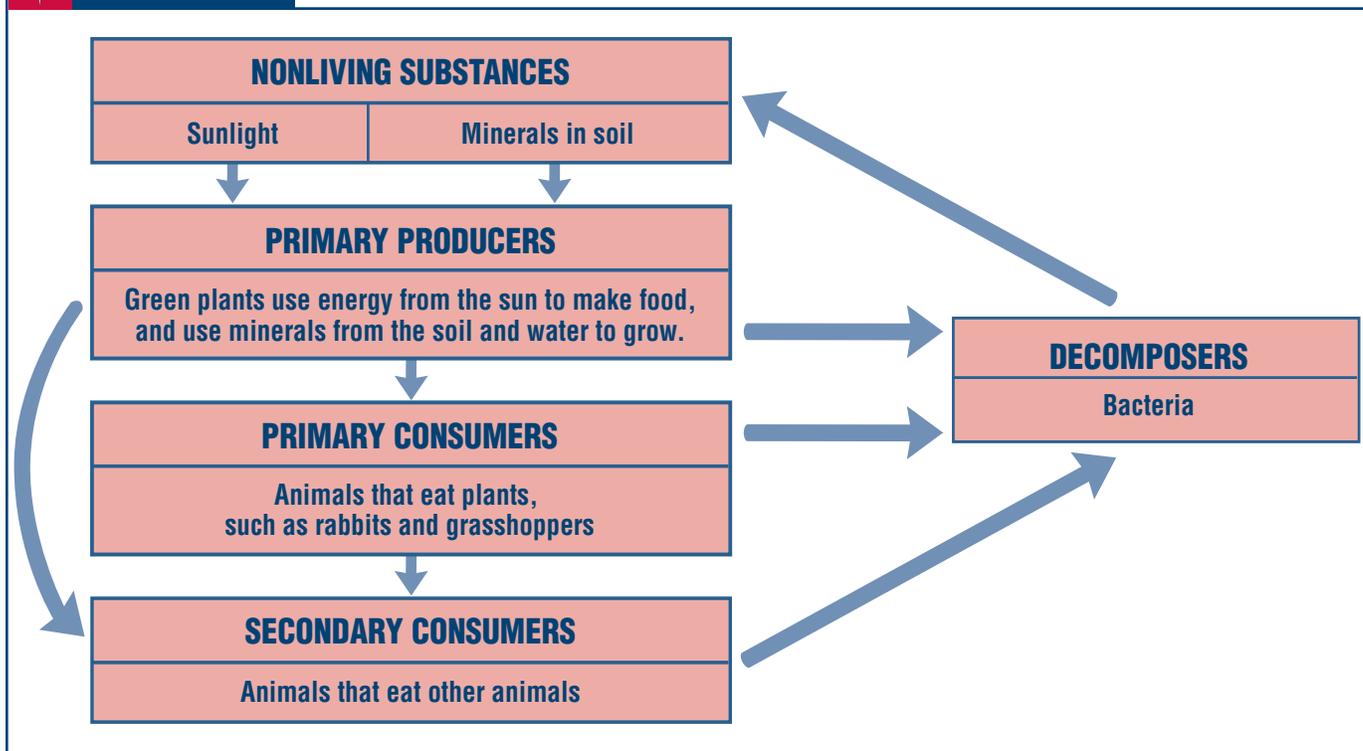
**FIGURE 3-4****World Land Biomes**

| Biome | Kinds of Plants | Kinds of Animals | Kind of Climate |
|-----------------------------|--|--|---|
| Tundra | Lichens, mosses, and sometimes dwarf trees | Polar bears, reindeer, caribou, arctic foxes, hares, hawks, falcons | Very cold, dry |
| Tropical rain forest | Tall, closely spaced ever-green trees, vines, flowers | Monkeys, apes, gorillas, leopards, lizards, tree frogs, black panthers, colorful birds, snakes | Warm, often hot, and wet |
| Temperate forest | Broadleaf or needleleaf trees, climbing vines, flowers | Birds, raccoons, lynx, cougars, bears, foxes, squirrels, deer, snakes, insects, spiders | Temperatures and precipitation vary; warm to hot summers and cold winters |
| Desert | Cacti, low shrubs | Lizards, snakes, jackrabbits, kangaroo rats, insects | Very dry |
| Grasslands | Grasses, trees, flowers | Antelope, bison, coyotes | Mild, moderate temperatures and rainfall |

The relationship of living and nonliving things in an ecosystem can be seen in the food chain. Look at **Figure 3-5**.

The **food chain** shows how the living and non-living parts of an ecosystem are interrelated. The sun provides the energy that the primary producers need to make food. Primary producers are mainly green plants. Plants also need things such

as water and minerals from the soil to grow. Primary consumers include animals that eat plants, such as rabbits and grasshoppers. Secondary consumers are predators, or animals that eat other animals. Finally, decomposers, such as bacteria, break down dead animals and plants into nutrients that go back into the soil. The nutrients are used again by plants.

**FIGURE 3-5****The Food Chain**

Using Your Skills

A RECALLING FACTS

Answer the following questions about biomes and ecosystems.

1. What characteristics make up a biome?

2. What are five major land biomes of the world?

3. What things make up the living and nonliving parts of an ecosystem?

4. What part of an ecosystem provides the energy needed for primary producers to make food? _____

5. What role do decomposers play in the food chain?

B USING GRAPHICS

Use **Figures 3-4** and **3-5** to answer the questions.

1. What kinds of plants grow in the tundra?

2. What kinds of animals could you expect to find in a grasslands biome?

3. What living things in the food chain are producers? _____

4. What do producers use to make food?

5. What is the difference between primary and secondary consumers?
