



Figure 2 Carbon may remain in the environment for millions of years before becoming available to living things.

Water and Life

Without water, there would be no life on Earth. All organisms, from bacteria to animals and plants, are composed mostly of water. Water helps transport nutrients and wastes within an organism. Water also helps regulate temperature. For example, when you sweat, water evaporates from your skin and cools your body. Eventually, all the water taken in by organisms is returned to the environment. For example, plants release a large amount of water vapor in a process called *transpiration*.

✓ Reading Check Why is water important?

The Carbon Cycle

Besides water, the most common molecules in living things are *organic* molecules, or molecules that contain carbon. The exchange of carbon between the environment and living things is known as the *carbon cycle*, as shown in **Figure 2**.

Photosynthesis and Respiration

Photosynthesis is the basis of the carbon cycle. During photosynthesis, plants use carbon dioxide from air to make sugars. Most animals get the carbon and energy they need by eating plants. How does carbon return to the environment? It returns when sugar molecules are broken down to release energy. This process, called *respiration*, uses oxygen. Carbon dioxide and water are released as byproducts of respiration.

evaporation the change of a substance from a liquid to a gas

condensation the change of state from a gas to a liquid

precipitation any form of water that falls to the Earth's surface from the clouds



Where's the Water?

There are about 37.5 million cubic kilometers of fresh water on Earth. Of this fresh water, about 8.3 million cubic kilometers is groundwater. What percentage of Earth's fresh water is groundwater?