

## Chapter 23

Use with Section 3

## ENRICHMENT

## ● Matter and Energy

## The Carbon Cycle

Like materials such as water and nitrogen, carbon cycles through ecosystems. Carbon is necessary for life processes. As shown in the drawing, carbon is released into the atmosphere in the form of carbon dioxide by many processes. Among the natural processes that release carbon dioxide are the respiration of animals and plants. Human activities, such as the burning of fossil fuels, also release carbon dioxide into the atmosphere.

Plants use carbon dioxide in the process of photosynthesis. In geologic processes, carbon dioxide absorbed in water or soil combines with metals such as calcium to form compounds called carbonates. Calcium carbonate,  $\text{CaCO}_3$ , is an example. Carbonates and decaying organic matter are deposited as sediment in bodies of water. Over long periods of time, the sediments can form rock and fossil fuels.

Answer the following questions in complete sentences.

1. What are some other natural processes that produce carbon dioxide?

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2. What are some human activities that are sources of carbon dioxide?

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3. What atmospheric gas is necessary for respiration?

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4. What products are produced by photosynthesis?

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