Photosynthesis and Cellular Respiration

Section 5-1: Energy and Living Things

Read the passage below, which is reproduced from page 94 of your textbook. Answer the questions that follow.

The process by which light energy is converted to chemical energy is called photosynthesis. Organisms that use energy from sunlight or inorganic substances to make organic compounds are called autotrophs. Most autotrophs, especially plants, are photosynthetic organisms. Some autotrophs, including certain bacteria, use inorganic substances to make organic compounds.

Organisms that must get energy from food instead of directly from sunlight or inorganic substances are called heterotrophs. Heterotrophs, including humans and other animals, get energy from food through the process of cellular respiration.

Read each question and write your answer in the space provided.

SKILL: Reading Effectively

1. The prefix photo- means “light.” The root word synthesis comes from a Greek word that means “putting together.” How could knowledge of these word parts help you define the word photosynthesis?

2. The prefix auto- means “self.” The root word troph comes from a Greek word that means “to feed.” How could knowledge of these word parts help you define the word autotroph?

3. The prefix hetero- comes from a Greek word that means “other.” How could knowledge of this prefix and the root word troph help you define the word heterotroph?
4. An analogy is a comparison. Complete the analogy: Heterotrophs are to humans as autotrophs are to __________________. What relationship forms the basis of this analogy?


5. How does cellular respiration help your body perform its life functions?


Circle the letter of the phrase that best answers the question.

6. Which of the following most closely resembles cellular respiration?
   a. warm water moving through copper pipes
   b. people moving along an escalator
   c. mixing different foods in a blender
   d. logs burning in a campfire