

REVIEW AND REINFORCEMENT GUIDE  
CHAPTER 4 ■ Cell Energy

SECTION  
**4-1** **Photosynthesis: Capturing and Converting Sunlight** (pages 82-87)

**KEY CONCEPTS**

▲ The first step in photosynthesis occurs when energy in the form of sunlight is captured by the chlorophyll in a chloroplast.

▲ The second step in photosynthesis occurs when the energy that has been captured is converted to the energy found in food.

**Building Vocabulary Skills: Writing Definitions**

Each of the following terms has something to do with energy and living cells. Define each term in your own words. Use complete sentences.

1. Photosynthesis \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

2. Chlorophyll \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

3. Glucose \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

4. Stoma \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

5. Autotroph \_\_\_\_\_

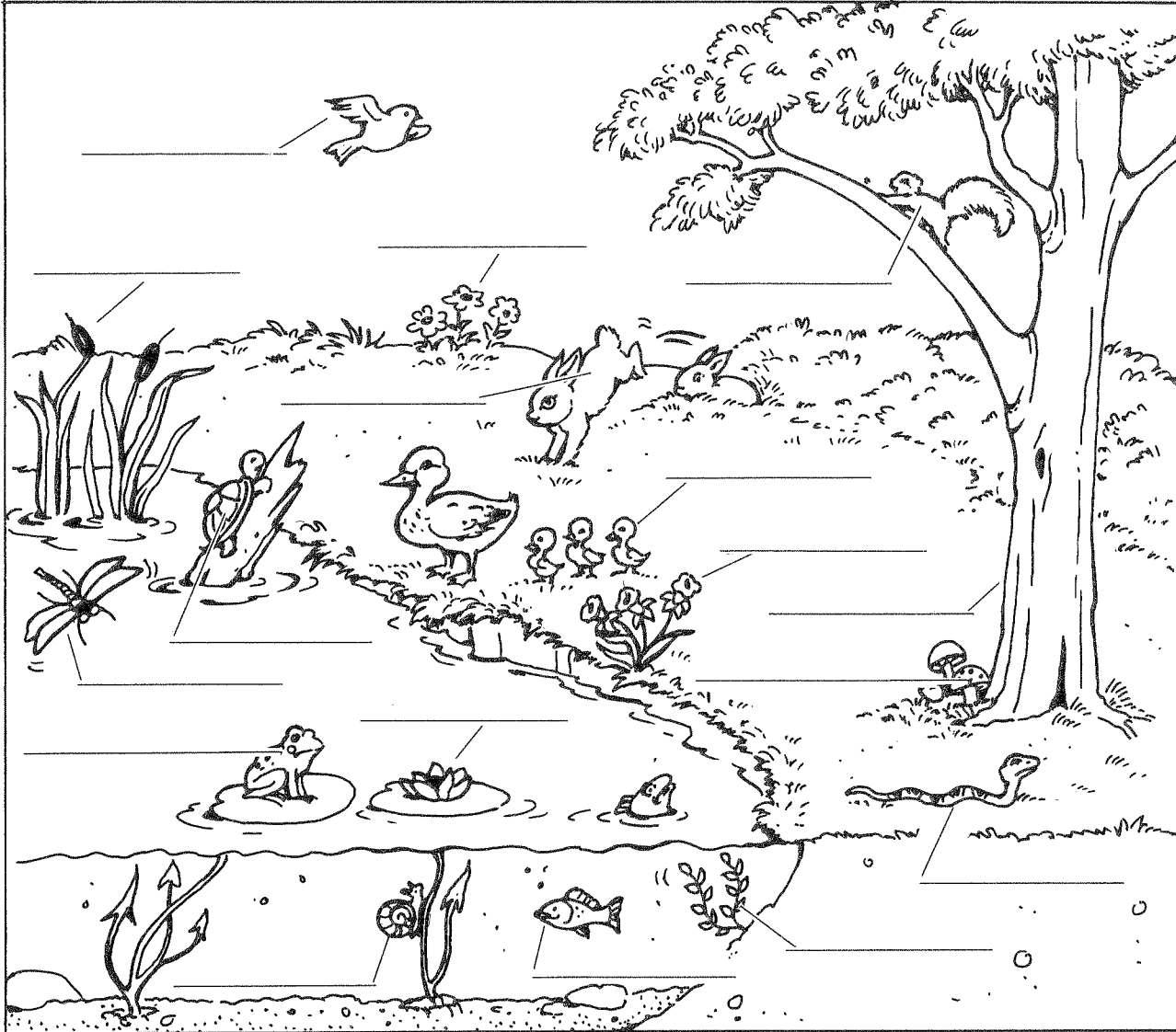
\_\_\_\_\_  
\_\_\_\_\_

6. Heterotroph \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

## ■ Autotrophs and Heterotrophs: Applying Vocabulary

The following picture shows a number of different organisms. Consider each organism carefully. If the organism makes its own food, write the word **autotroph** in the appropriate space. If the organism eats other organisms to obtain energy, write **heterotroph**.



**Analyzing the Equation: Understanding the Main Ideas**

1. Write the chemical equation for photosynthesis in the space below.

2. Give the name of the substance that corresponds to each of the following chemical formulas.

a.  $\text{CO}_2$  \_\_\_\_\_

b.  $\text{H}_2\text{O}$  \_\_\_\_\_

c.  $\text{C}_6\text{H}_{12}\text{O}_6$  \_\_\_\_\_

d.  $\text{O}_2$  \_\_\_\_\_

3. Why are sunlight and chlorophyll written above and below the arrow, rather than on either side of it? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. What are the raw materials of photosynthesis? \_\_\_\_\_  
\_\_\_\_\_

5. What are the products of photosynthesis? \_\_\_\_\_

6. What do the numerals in the equation mean? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Steps of Photosynthesis: Understanding the Main Ideas**

1. In your own words, describe what happens during the first step of photosynthesis.

---

2. In your own words, describe what happens during the second step of photosynthesis.

---

---