

**CONCEPT REVIEW**

● **Photosynthesis and Respiration**

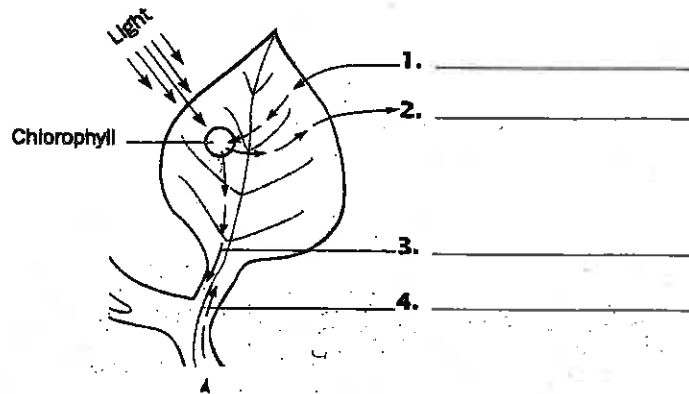
After it is labeled, the diagram below will illustrate photosynthesis. Write each of the following terms on the correct numbered line. Then answer the questions that follow.

Carbon Dioxide

Glucose

Oxygen

Water



5. a. In photosynthesis, what substances come in from the outside?

b. What substances are produced?

6. Write the overall equation for photosynthesis in the space provided.

Answer the following questions relating to cellular respiration.

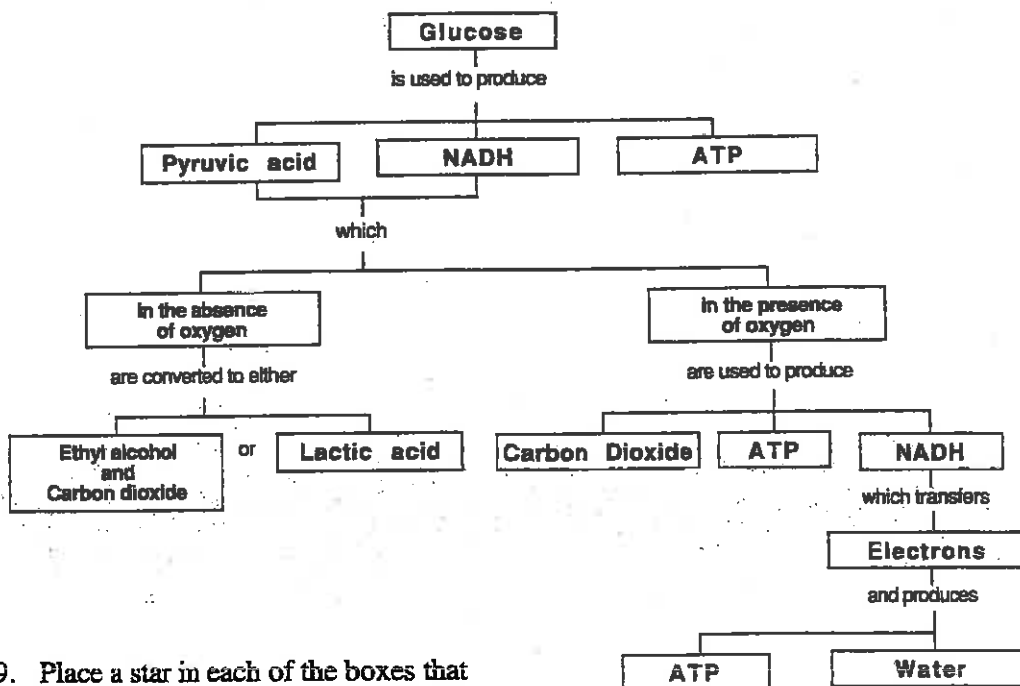
7. The purpose of cellular respiration is to \_\_\_\_\_ the energy from carbohydrates and other organic molecules stored during photosynthesis.

8. Write the ~~equation~~ that shows the release of energy by a molecule of ATP.

**CONCEPT REVIEW**

• **Photosynthesis and Respiration** *continued*

The concept map below illustrates cellular respiration. Compare the map with the discussion of this topic in your textbook. Then do the exercises that follow.



9. Place a star in each of the boxes that show stored energy.
10. Color the boxes in the concept map above. Use one color for the boxes that show glycolysis. Then use different colors for (a) the path taken during fermentation and (b) the path taken during oxidative respiration.
11. a. In the process of cellular respiration, what substance comes in from the outside?  
  
b. What are the end products of the process?
12. Write the overall equation for oxidative respiration in the space below.
13. Compare and contrast the equation for oxidative respiration with the equation for photosynthesis.

A Biology 30 student set up an experiment to demonstrate the relationship between plants and animals. This student filled 4 test tubes with water and Bromthymol Blue. This nontoxic indicator will change from blue to yellow to indicate if high levels of carbon dioxide are found in the water. The student then labeled the test tubes A - D and added the following to each:

Test tube A: nothing (control)

Test tube B: a living snail (small animal)

Test tube C: a living water plant

Test tube D: a live snail and water plant

The initial color of the solutions in each of the test tubes was blue. Predict the color change, if any, in each of the 4 test tubes. For each of your predictions, give a reason for your answer.

Test tube A: \_\_\_\_\_

Test tube B: \_\_\_\_\_

Test tube C: \_\_\_\_\_

Test tube D: \_\_\_\_\_