

24.1

A STRATEGY FOR LIFE

Section Review

Objectives

- Identify the fundamental units of life
- Describe how organisms get energy for their needs

Vocabulary

- photosynthesis

Key Equations

- Photosynthesis:



Carbon dioxide Water from sunlight Glucose Oxygen

- Energy used by cells:



Glucose Oxygen Carbon dioxide Water

Part A Completion

Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

Two major cell designs occur in nature: 1 cells and **1.** _____
2 cells. The cells of 3 are prokaryotic, and the cells of **2.** _____
other organisms including 4 and animals are eukaryotic. **3.** _____
Eukaryotic cells are easily distinguished from prokaryotic cells by **4.** _____
the presence of small membrane-enclosed structures called **5.** _____
5, which are located in the interior of the cell. These **6.** _____
structures are the sites of many specialized functions in eukaryotic **7.** _____
cells. 6 are the source of cellular energy, 7 are sites **8.** _____
for the digestion of substances taken into the cell, and the 8
contains genetic materials necessary for reproducing the cell.

Organisms must have energy to survive. 9 is directly or **9.** _____
 indirectly the source of all energy obtained by organisms. 10 **10.** _____
 is the process by which cells directly capture and use solar energy **11.** _____
 to reduce carbon dioxide to sugar compounds. Photosynthetic
 organisms produce the 11 found in Earth's atmosphere.

Part B True-False

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

- _____ **12.** Examination of fossilized remains indicates that eukaryotic cells appeared on Earth before prokaryotic cells.
- _____ **13.** Photosynthesis is the process by which cells capture and use solar energy to make chemical energy.
- _____ **14.** Ribosomes are the sites in the cell where proteins are made.
- _____ **15.** To carry out photosynthesis, cells require carbon dioxide and water.
- _____ **16.** Oxygen is produced when animals oxidize the nutrients produced by plants.

Part C Matching

Match each description in Column B to the correct term in Column A.

Column A

- _____ **17.** chloroplast
- _____ **18.** prokaryotic cells
- _____ **19.** carbon cycle
- _____ **20.** eukaryotic cell

Column B

- a.** the movement of carbon through the environment between photosynthetic organisms and animals
- b.** specialized organelle that contains a light-harvesting system to convert solar energy into chemical energy
- c.** cells of bacteria
- d.** a cell that has a nucleus and membrane-bound organelles

Part D Question

Answer the following in the space provided.

- 21.** Plant cells contain chloroplasts and mitochondria. Why would plant cells require both types of organelles?
- _____