Section 7–2 Eukaryotic Cell Structure (pages 174–181)

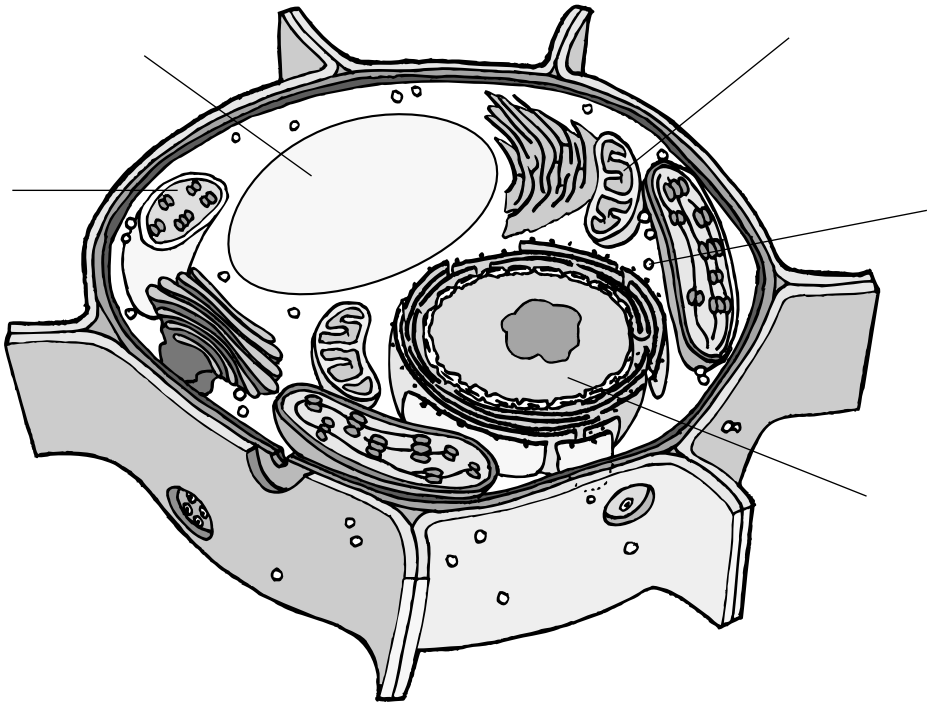
This section describes the functions of the major cell structures.

Comparing a Cell to a Factory (page 174)

1. What is an organelle? _____

_____

2. Label the structures on the illustration of the plant cell.



3. Circle the letter of each structure that animal cells contain.

a. chloroplasts **b.** lysosomes **c.** mitochondria **d.** ER

4. Circle the letter of each structure that plant cells contain.

a. cell wall **b.** ER **c.** lysosomes **d.** chloroplast

Nucleus (page 176)

5. What is the function of the nucleus? _____

_____

6. What important molecules does the nucleus contain? _____

_____

7. The granular material visible within the nucleus is called _____.

Name _____ Class _____ Date _____

8. What does chromatin consist of? _____

_____

9. What are chromosomes? _____

_____

_____

_____

10. Most nuclei contain a small, dense region known as the _____.

11. What occurs in the nucleolus? _____

_____

12. What is the nuclear envelope? _____

_____

Ribosomes (page 177)

13. What are ribosomes? _____

_____

_____

Endoplasmic Reticulum (pages 177–178)

14. What is the difference between rough ER and smooth ER? _____

_____

_____

Golgi Apparatus (page 178)

15. Using the cell as a factory analogy, describe the role of the Golgi apparatus in the cell.

_____

_____

_____

Lysosomes (page 179)

16. Circle the letter of each sentence that is true about lysosomes.

a. They contain enzymes that help synthesize lipids.

b. They break down organelles that have outlived their usefulness.

c. They produce proteins that are modified by the ER.

d. They contain enzymes that break down lipids, carbohydrates, and proteins.

Vacuoles (page 179)

17. What are vacuoles? _____

_____

_____

18. What is the role of the central vacuole in plants? _____

_____

_____

_____

_____

19. How does the contractile vacuole in a paramecium help maintain homeostasis?

_____

_____

_____

_____

Mitochondria and Chloroplasts (pages 179–180)

20. Is the following sentence true or false? Both chloroplasts and mitochondria are enclosed by two membranes. _____

21. Chloroplasts and mitochondria contain their own genetic information in the form of _____.

22. Biologist Lynn Margulis has suggested that mitochondria and chloroplasts are descendants of what kind of organisms? _____

_____

Cytoskeleton (page 181)

23. What is the cytoskeleton? _____

_____

_____

Name_____ Class_____ Date_____

24. Complete the table about structures that make up the cytoskeleton.

STRUCTURES OF THE CYTOSKELETON

Structure	Description	Functions
		Maintain cell shape, help build cilia and flagella, form centrioles in cell division
		Support the cell, help cells move

Match the organelle with its description.

Organelle

_____ **25.** Ribosome

_____ **26.** Endoplasmic reticulum

_____ **27.** Golgi apparatus

_____ **28.** Lysosome

_____ **29.** Vacuole

_____ **30.** Chloroplast

_____ **31.** Mitochondrion

Description

a. Uses energy from sunlight to make energy-rich food

b. Stack of membranes in which enzymes attach carbohydrates and lipids to proteins

c. Uses energy from food to make high-energy compounds

d. An internal membrane system in which components of cell membrane and some proteins are constructed

e. Saclike structure that stores materials

f. Small particle of RNA and protein that produces protein following instructions from nucleus

g. Filled with enzymes used to break down food into particles that can be used

Reading Skill Practice

A flowchart can help you remember the order in which events occur. On a separate sheet of paper, create a flowchart that describes the steps by which proteins are made in the cell. You will find that the steps of this process are explained on pages 176–178. For more information about flowcharts, see Organizing Information in Appendix A in your textbook.