

## Section 7-2 Eukaryotic Cell Structure (pages 174-181)

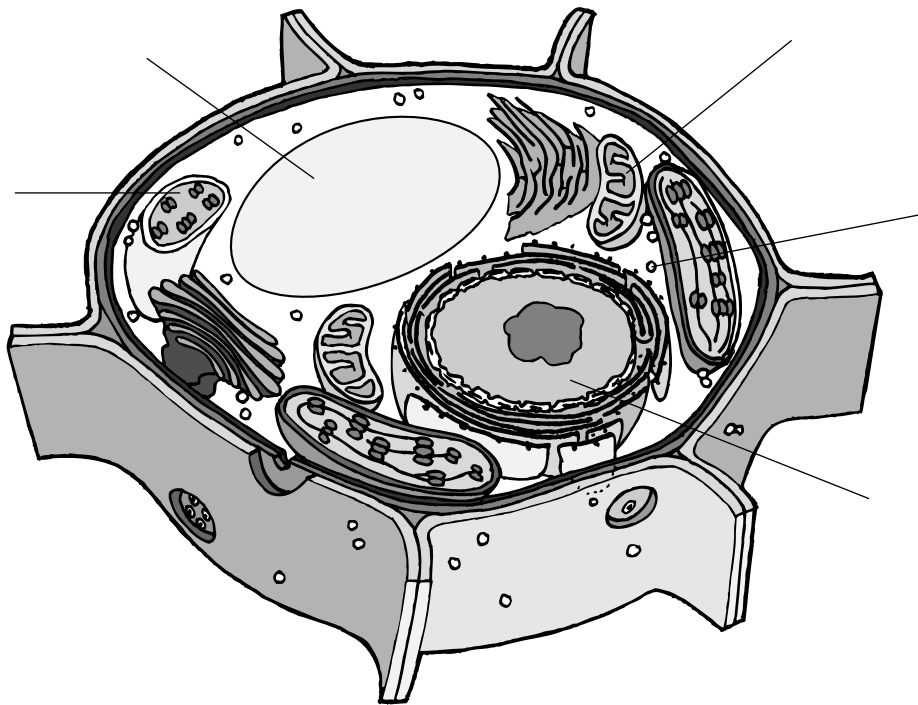


**TEKS FOCUS:** 4A Parts of eukaryotic cells

*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 \_\_\_\_\_.

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? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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	Description
_____ 25. Ribosome	a. Uses energy from sunlight to make energy-rich food
_____ 26. Endoplasmic reticulum	b. Stack of membranes in which enzymes attach carbohydrates and lipids to proteins
_____ 27. Golgi apparatus	c. Uses energy from food to make high-energy compounds
_____ 28. Lysosome	d. An internal membrane system in which components of cell membrane and some proteins are constructed
_____ 29. Vacuole	e. Saclike structure that stores materials
_____ 30. Chloroplast	f. Small particle of RNA and protein that produces protein following instructions from nucleus
_____ 31. Mitochondrion	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.