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Section 7–2 Eukaryotic Cell Structure

(pages 174–181)

Key Concept

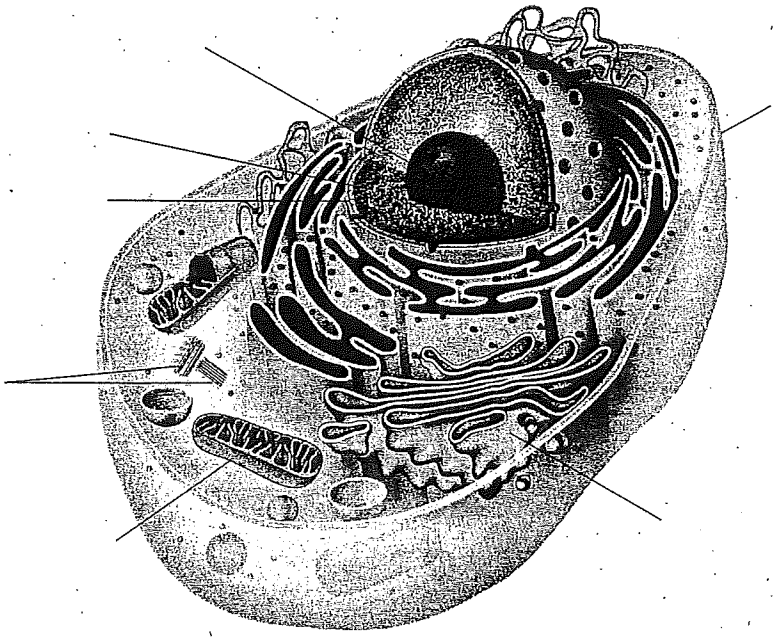
- What are the functions of the major cell structures?

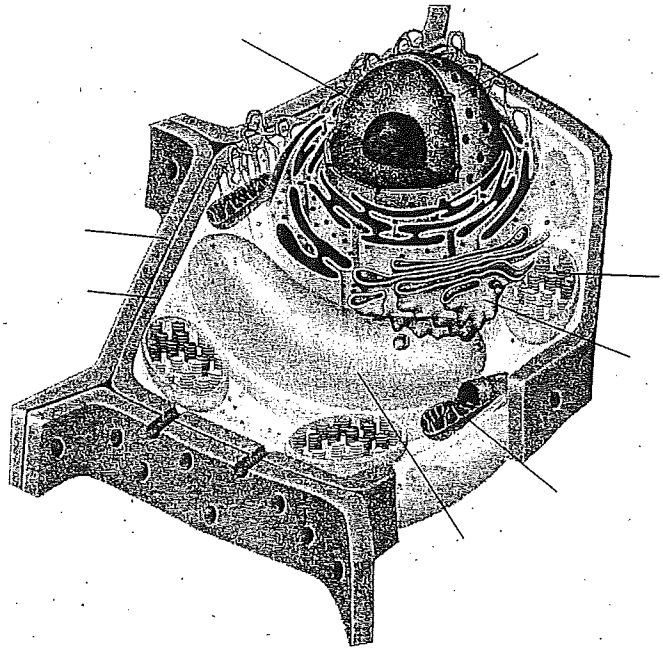
Comparing a Cell to a Factory (page 174)

1. What is an organelle? _____

_____

2. Label the structures on the illustrations of the plant and animal cells.





Name_____ Class_____ Date _____

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? _____

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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 _____.

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22. What are mitochondria? _____

_____

_____

23. Are mitochondria found in plant cells, animal cells, or both? _____

24. Where are chloroplasts found? _____

_____

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

_____

Cytoskeleton (page 181)

26. What is the cytoskeleton? _____

_____

_____

27. 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

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Match the organelle with its description.

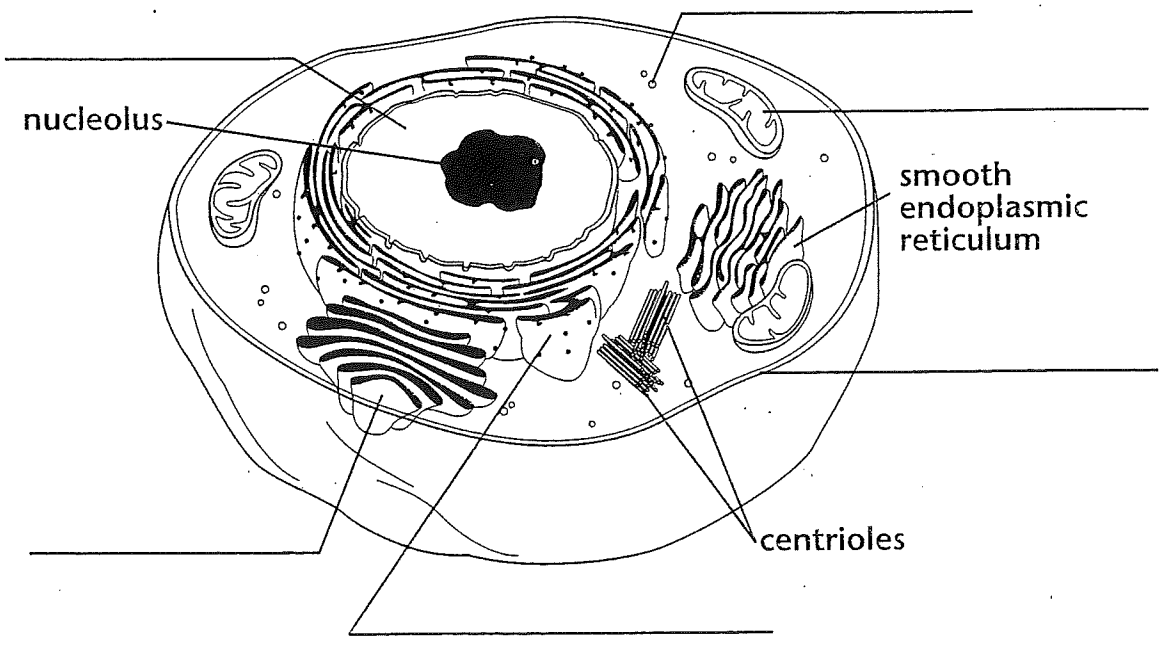
Organelle	Description
_____ 28. Ribosome	a. Uses energy from sunlight to make energy-rich food
_____ 29. Endoplasmic reticulum	b. Stack of membranes in which enzymes attach carbohydrates and lipids to proteins
_____ 30. Golgi apparatus	c. Uses energy from food to make high-energy compounds
_____ 31. Lysosome	d. An internal membrane system in which components of cell membrane and some proteins are constructed
_____ 32. Vacuole	e. Saclike structure that stores materials
_____ 33. Chloroplast	f. Small particle of RNA and protein that produces protein following instructions from nucleus
_____ 34. Mitochondrion	g. Filled with enzymes used to break down food into particles that can be used

Animal Cell

Use the words below to label the animal cell. Some structures have already been labeled for you.

cell membrane	mitochondrion	rough endoplasmic reticulum
Golgi apparatus	nucleus	ribosome

Animal Cell



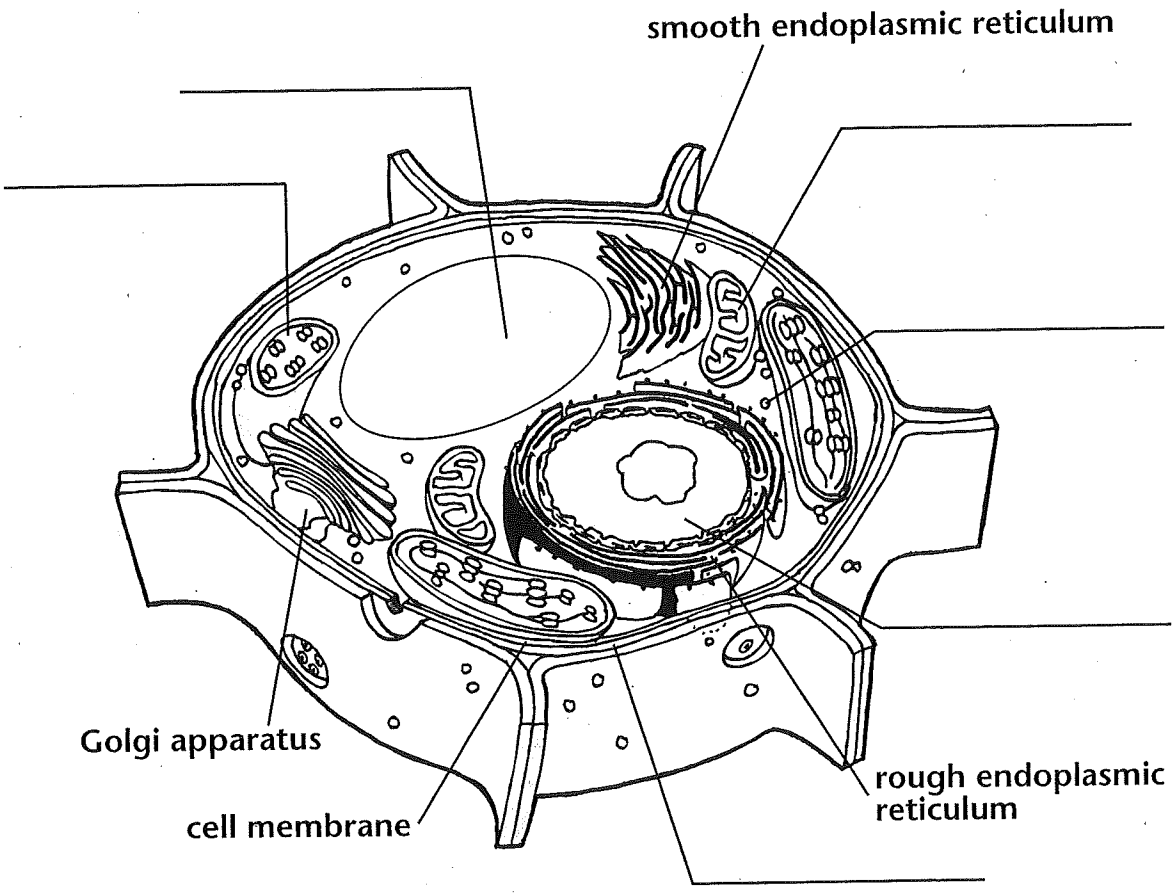
Name_____ Class_____ Date_____

Plant Cell

Use the words below to label the plant cell. Some structures have already been labeled for you.

cell wall	mitochondrion	ribosome
chloroplast	nucleus	vacuole

Plant Cell



Use the diagram to answer the questions.

1. Which structure is found in a plant cell but not in an animal cell? Circle the correct answer.

   chloroplast cell membrane ribosome

2. What is the main function of vacuoles?

   _____