




## 7.2 Cell Structure

### Lesson Objectives

-  Describe the structure and function of the cell nucleus.
-  Identify the role of ribosomes in making proteins.
-  Describe the function of the chloroplasts and mitochondria in the cell.

### Lesson Summary

**Cell Organization** Eukaryotic cells contain a nucleus and many specialized structures.

- ▶ **Cytoplasm** is the fluid portion of a cell.
- ▶ **Organelles** are structures that have specialized functions in eukaryotic cells.
- ▶ The nucleus contains DNA and controls the activity of a cell.

**Organelles That Build Proteins** Three kinds of organelles work with the nucleus to make and distribute proteins:

- ▶ **ribosomes:** small particles of RNA and protein found throughout the cytoplasm in all cells; they produce proteins by following coded instructions from DNA

**Organelles That Capture and Release Energy** Two types of organelles act as power plants of the cells. Both types are surrounded by two membranes.

- ▶ **Chloroplasts** capture the energy from sunlight and convert it into food that contains chemical energy in a process called photosynthesis. Cells of plants and some other organisms contain chloroplasts, which contain chlorophyll.
- ▶ **Mitochondria** are found in nearly all eukaryotic cells; they convert the chemical energy stored in food to a usable form.

## Cell Organization

2. What does the term *organelle* mean literally?

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## Organelles That Build Proteins

13. What are ribosomes? What do they do?

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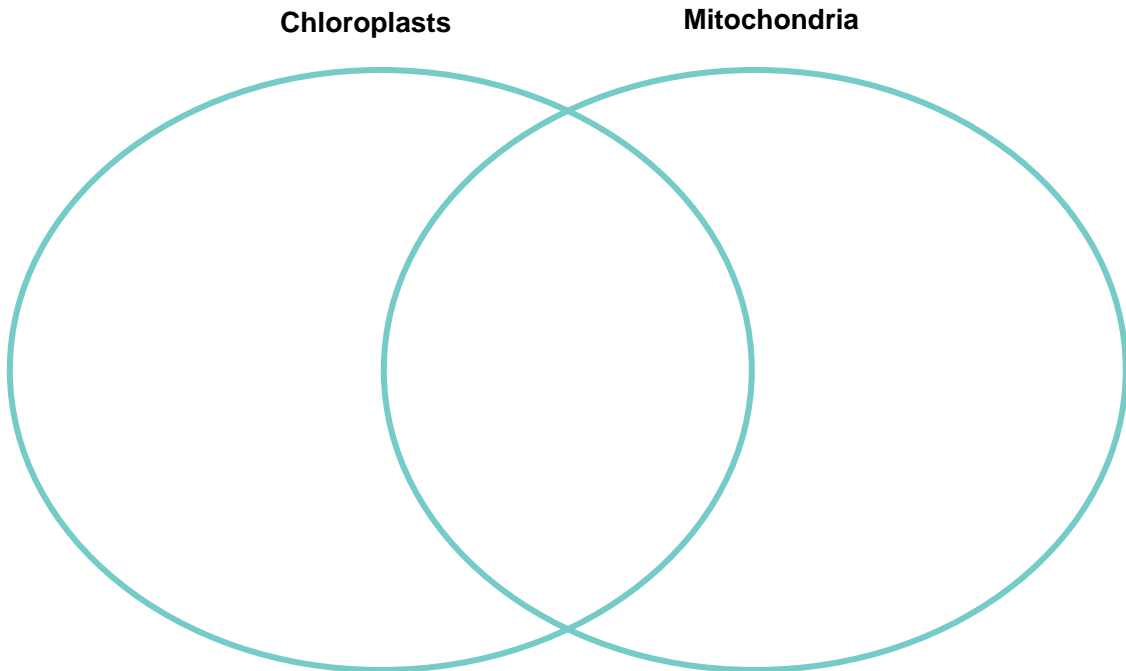
15. What is the difference between rough ER and smooth ER?

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## Organelles That Capture and Release Energy

18. Complete the Venn diagram to compare and contrast chloroplasts and mitochondria.



*For Questions 19–22, write True if the statement is true. If the statement is false, change the underlined word or words to make the statement true.*

- \_\_\_\_\_ 19. Chloroplasts are never found in animal cells.
- \_\_\_\_\_ 20. Unlike chloroplasts, mitochondria are surrounded by a double membrane.
- \_\_\_\_\_ 21. Nearly all of the mitochondria in your cells were inherited from your mother.
- \_\_\_\_\_ 22. Both chloroplasts and mitochondria lack genetic information in the form of DNA.