

## Are All Plant Cells the Same?

The cell is the smallest unit of life. Every cell contains the “machinery,” or working parts, needed to support its life. Together, cells are the building blocks of all living things.

Cells have a variety of jobs to do, so they come in different sizes and shapes. All cells contain special parts called **organelles**, but the same organelles don’t appear in all cells. First, let’s examine some of the organelles that plant cells have in common.

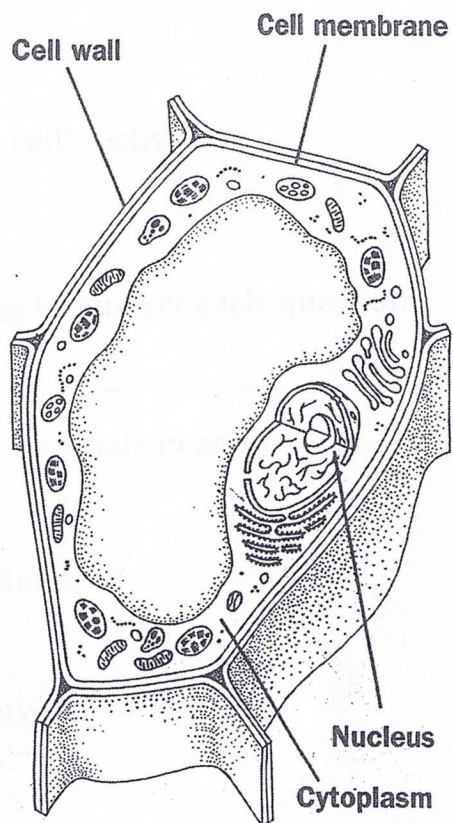
Within each cell, organelles float or move in a jelly-like material called **cytoplasm**. The cytoplasm and other organelles are surrounded by another organelle called a **cell membrane**. This membrane controls the movement of materials in and out of the cell. It lets food and water enter a cell and allows the cell’s waste to move out of the cell.

Inside each plant cell is an important organelle called the **nucleus**. If you can imagine the cytoplasm as a factory where the work of the cell takes place, then the nucleus is the main office. The nucleus controls the cell’s activities. Inside the nucleus are the materials that cause the cell to grow and reproduce. The nucleus also holds the special information, or code, that gives each cell its particular characteristics.

Outside the cell membrane is the **cell wall**. The cell wall gives a plant cell support and protection. It also provides a route for water and minerals to travel among cells in a plant.

All the cells in a green plant have cytoplasm, a cell membrane, a cell wall, and a nucleus. But because cells have special jobs to do, certain cells have additional organelles.

**Plant Cell**





**A.**

Write True if the sentence is true. Write False if the sentence is false.

- \_\_\_\_\_ 1. There is no smaller unit of life than the cell.
- \_\_\_\_\_ 2. Every cell contains the working parts needed to support its life.
- \_\_\_\_\_ 3. Cells are the building blocks of all living things.
- \_\_\_\_\_ 4. All cells are the same size and shape.
- \_\_\_\_\_ 5. Different plant cells do different jobs.
- \_\_\_\_\_ 6. A cell wall is an organelle.
- \_\_\_\_\_ 7. The nucleus of a plant cell controls the cell's activities.

**B.**

Write cell membrane, cell wall, cytoplasm, or nucleus to answer each question.

1. What jelly-like material is inside the cell? \_\_\_\_\_
2. Which organelle holds the cell together and lets materials in and out of the cell? \_\_\_\_\_
3. Which organelle controls cell growth and reproduction?  
\_\_\_\_\_
4. Which organelle protects and supports the plant cell?  
\_\_\_\_\_

**C.**

Write one or more sentences to answer the question.

Plant cells have cell walls, but animal cells do not. Why do you think this is so?

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