

Our goal is to find ways to tell the difference between plant and animal cells

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# Types of cells



Cells are surrounded by a **cell membrane** that holds the cell together and allows materials to pass into and out of the cell. Nutrients enter and wastes leave through the cell membrane.

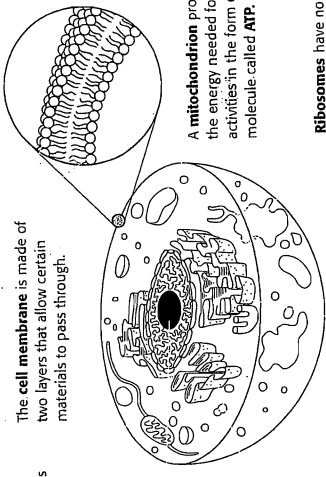
The **cytoplasm** is a gel-like material that contains the organelles.

The **nucleus** contains DNA, which directs the cell's activities and determines an organism's characteristics.

**Golgi complexes** are stacked membranes that package materials for transport outside the cell.

The **cell membrane** is made of two layers that allow certain materials to pass through.

Within a cell, structures called **organelles** carry out all the activities necessary for life. Like the cell, most organelles are surrounded by a membrane that allows materials to enter and leave. Each organelle has a certain function.



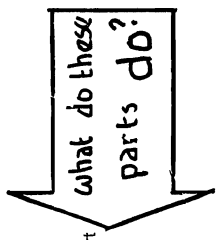
A **mitochondrion** produces the energy needed for cell activities in the form of a molecule called **ATP**.

**Ribosomes** have no membrane. They are where proteins are assembled.

The **endoplasmic reticulum**, or **ER**, is a network of membranes that acts as a passageway for moving materials within the cell.

Show where all these parts are located

- \_\_\_ nucleus
- \_\_\_ mitochondrion
- \_\_\_ endoplasmic reticulum
- \_\_\_ ribosome
- a protein assembly
- b material transport
- c DNA storage
- d ATP production



Read pages 229 to 238 of your textbook NY science - Grade 6 - chapter 8 section 3

Standards 52a, 54a, 56d, 57c, 57e

## Plant Cells

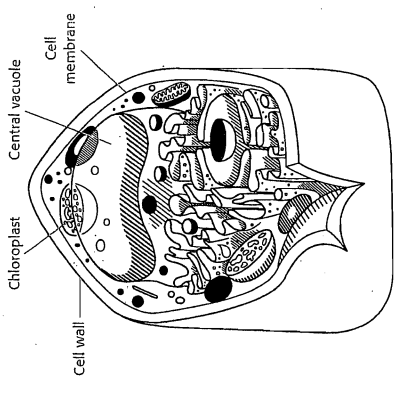
Like animal cells, plant cells have a cell membrane, nucleus, mitochondria, ribosomes, ER, and Golgi complexes. However, plant cells have structures not found in animal cells.

The **cell wall** is a rigid structure that surrounds the cell membrane. The cell wall is made of a tough material called **cellulose** that supports and protects the plant cell. The strength of many cell walls together allows a tree to grow tall without falling over.

Plant cells have large, liquid-filled organelles called **central vacuoles**. The liquid inside the central vacuole creates pressure that helps support the plant. Vacuoles also store nutrients and wastes. Some vacuoles contain pigments, like the red and blue pigments of flower petals. Vacuoles may contain chemical compounds that make the plant taste unpleasant to animals that try to eat it.

Plant cells have organelles called **chloroplasts**. Chloroplasts have a green pigment called **chlorophyll** that captures

the energy from sunlight. This energy is used to make food for the plant during **photosynthesis**.



Plant cells have cell walls, central vacuoles, and chloroplasts. These structures are not found in animal cells.

Tell how a plant cell differs from an animal cell (Give 3 ways)

Think and search question

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