

Main Topic: Plant vs. Animal Cells

Learning Objectives/Outcomes: differentiate between structure and function in plant and animal cells.

Topic 1: Animal Cells

Ideas

What are similarities between plant and animal cells?

Both plant and animal cells have many similar organelles and cellular substructures such as the following:

- Nucleus
- Cell Membrane
- Mitochondria
- Cytoplasm
- Smooth and Rough ER
- Golgi Apparatus
- Ribosomes

Both cell types share similar function and cellular processes in order to provide energy and maintain the health of the organism.

What are the differences between plant and animal cells?

Plant cells have a much larger central vacuole than animal cells, and have a cell wall in addition to the cell membrane. They also contain a special organelle called a chloroplast that produces energy for the cell.

Topic 2: Plant Cells

Ideas

What is a cell wall?

- A tough, rigid outer covering that protects and provide shape
 - Plants, algae, fungi, and most bacteria

What is the function of chloroplasts?

- Energy producing organelles that are found in all plant cells and some bacteria
- They contain Chlorophyll
 - This is a green pigment which gives plants their color

Explain the function of chlorophyll.

- Site of photosynthesis – process in which energy from sunlight is used to convert carbon dioxide and water into food (glucose).

What is a vacuole?

- Storage bubbles within a cell which may contain water, nutrients, or waste products
 - Plant and animal cells have vacuoles, but they are much larger in plants
 - May gain and lose water depending on water availability; drooping plants have lost water and the vacuoles are shrinking
 - Turgor pressure

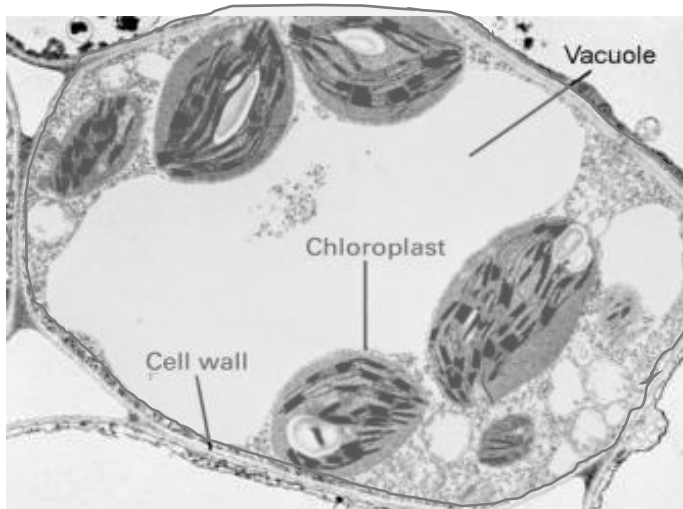
Key Vocabulary

Animal cell

Key Vocabulary

Plant cell
Cell wall
Chloroplast
Chlorophyll
Vacuole

Pictures



Pictures

