

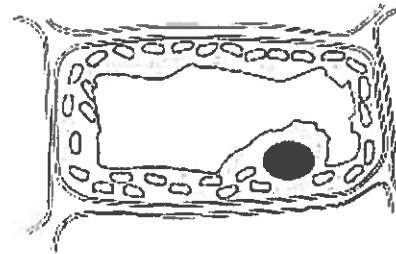
# Key Concepts

## Life Processes and Living Systems (SOL 5.5)

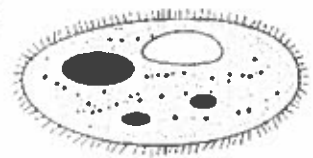
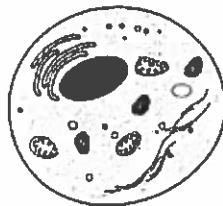
# Cells

- Living things are made of **cells**. Cells carry out all life processes. New cells come from existing cells. Cells are too small to be seen with the eye alone. By using a microscope, many parts of a cell can be seen.

- Though plant and animal cells are similar, they are also different in shape and in some of their parts. **Plant cells** tend to be rectangular.

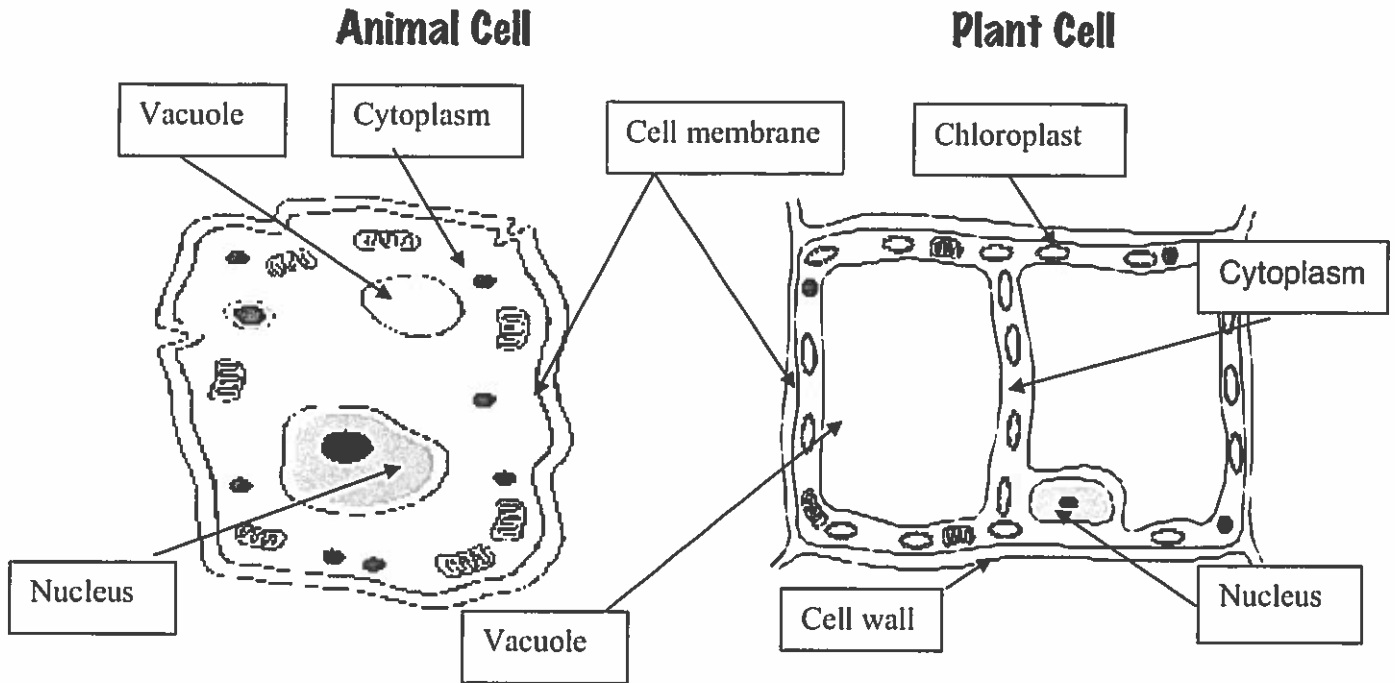


- **Animal cells** tend to be spherical or at times irregular.



- Organisms that share similar characteristics can be organized into groups in order to help understand similarities and differences.
- Plants can be categorized as **vascular** (having special tissues to transport food and water — for example, trees and flowering plants) and **nonvascular** (not having tissues to transport food and water — for example, moss). Most plants are vascular.
- Animals can be categorized as **vertebrates** (having backbones) or **invertebrates** (not having backbones).

# Parts of a Cell



**Cytoplasm** - the clear, jelly-like substance inside a cell (animal and plant cells)

**Nucleus** - the part of the cell containing information to control the cell's activities (animal and plant cells)

**Cell membrane** - the thin, bag-like structure surrounding animal cells and surrounded by the cell wall of plant cells that allows certain materials to pass in and out of cell

**Vacuole** - a storage sac in a cell (animal and plant cells)

**Cell wall** - the sturdy, outermost structure surrounding plant cells that help to hold up the plant; made of nonliving cellulose (plant cells only)

**Chloroplast** - the structure in a plant cell, containing chlorophyll, where photosynthesis takes place (plant cells only)

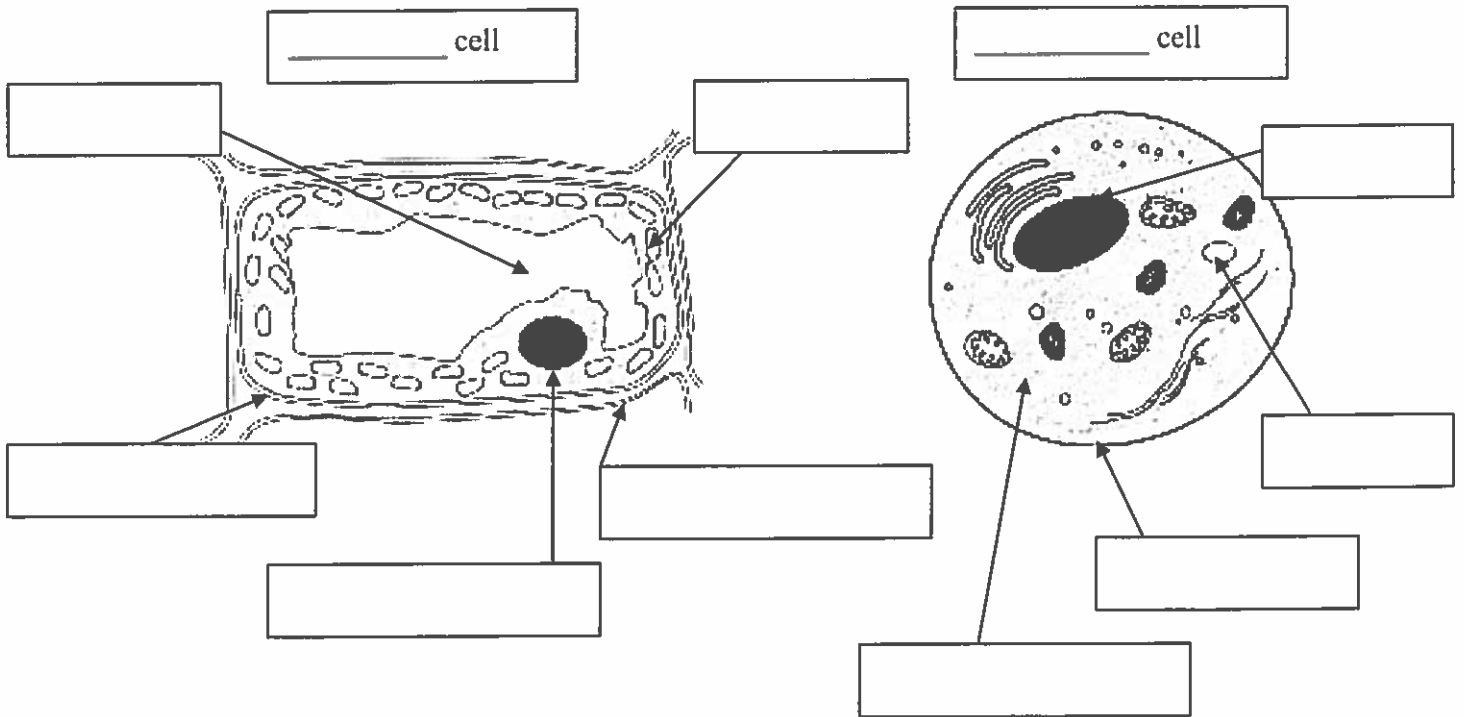


Directions: Place a check in each box that describes a plant cell and an animal cell.

	Rectangular Shape	Spherical/Irregular	Nucleus	Cytoplasm	Chloroplast	Vacuole	Cell Wall	Cell Membrane
Plant Cell								
Animal Cell								



Directions: Label the illustrations of the plant cell and animal cell.



# Vascular Plants

**Structure:** Plants that have roots, stems, leaves, and tubes to transport water throughout the plant

**Habitat:** Live anywhere – shade or sun

**Example:** Daisy, rose, dogwood tree, and fern



dandelion



rose



fern

# Nonvascular Plants

**Structure:** Plants that do not have roots, stems, or leaves and do not have tubes to transport water in the plant

**Habitat:** Moist, shady areas

**Example:** Moss and liverworts



# Vertebrates and Invertebrates

Vertebrates are animals that have a backbone. Examples include:

- Mammals, fish, reptiles, birds, and amphibians



Invertebrates are animals that do not have a backbone. Examples include:

- Sponges
- Jellyfish, sea anemones, and coral
- Worms
- Mollusks such as clams, oysters, scallops, snails, and octopuses
- Arthropods such as crabs, shrimp, lobsters, spiders, insects, centipedes, and millipedes
- Echinoderms such as sea urchins, sand dollars, and starfish





**Directions:** Place the examples under the correct heading.

**fish    dog    snake    bird    squid    dolphin    worm**  
**lizard    grasshopper    sponges    human    crab    starfish    oyster**

<b>Vertebrates</b>	<b>Invertebrates</b>