Lesson #44

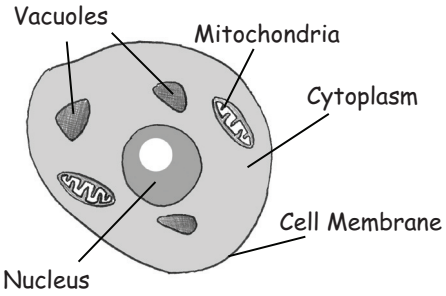
The Difference Between Plant and Animal Cells

When we looked at cells in the previous lesson, we learned that plant cells have chloroplasts while animal cells do not. As you know, **chloroplasts** are responsible for photosynthesis, something that only plants can do. There are two additional features found only in plant cells.

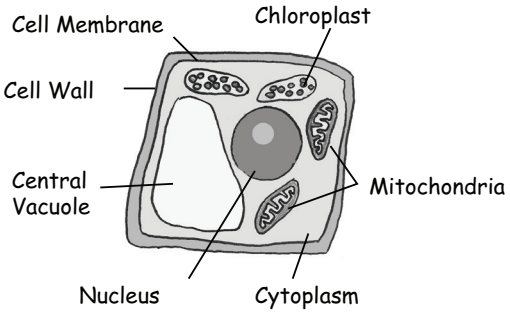
All cells contain a cell membrane, a thin covering which holds in the internal parts and controls what enters and exits the cell. In plant cells, you will find a **cell wall** surrounding this membrane. Made of a substance called cellulose, the cell wall is much more rigid than the cell membrane. It offers protection, as well as support.

The third feature found only in plant cells is called a **central vacuole**. A vacuole is a type of vesicle. We learned earlier that both plant and animal cells have vesicles, bubble-like organelles that provide storage for a cell. However, the central vacuole is found only in plants. Found in the middle of the cell, it is a very large bubble, taking up over 90% of the cell's volume. Its purpose is to store water the plant will need and provide structural support. When it is full of water, the vacuole helps the plant stay upright. The plant is continually using the water stored in the central vacuole. If you have ever wondered by plants droop when you forget to water them, it's because the plant has used all of the water stored in the vacuole and there is no water left to provide support. Like a water balloon that has lost all its water, your plant will droop.

Animal Cell



Plant Cell



1. List three features found only in plant cells, NOT in animal cells.

   _____ _____ _____

2. Give two purposes for the plant's cell wall.

   _____ _____

3. **True or False?** _____ Coral is alive.

4. In a stationary front, the air masses are not _____.

   changing temperature mixing moving

5. Check the statement that does NOT describe a purpose for the central vacuole.

_____ stores water for the cell to use

_____ location for photosyntesis to take place

_____ provides structural support

6. Match the type of symbiotic partnership to its description.

_____ commensalism _____ parasitism _____ mutualism

A) beneficial to both host and partner
B) harmful to the host
C) does not help or harm the host

7 – 8. Match each organelle to the role it plays in the cell.

_____ nucleus	A) processes the energy needed for the cell
_____ mitochondria	B) stores water, nutrients, and waste
_____ endoplasmic reticulum	C) converts the sun's energy using photosynthesis
_____ Golgi bodies	D) manufactures proteins
_____ chloroplasts	E) transports proteins throughout the cell
_____ vesicles	F) packages and distributes lipids and proteins
_____ ribosomes	G) allows communication within the cell

9. For each description below, indicate whether it describes rivers, lakes, or both.

_____ This type of biome has standing water including a near shore and open water area. Water lilies and sunfish are found here.

_____ Filled with freshwater, these are home to a great variety of animal and plant life.

_____ This biome has quickly moving water. Much of the plant life is found growing at the edge of the water. Salamanders live on shore and insects may hide under rocks.

10. We know that the ozone layer can be both good and bad. For each statement below, indicate whether it describes ozone being helpful or harmful.

_____ blocks radiation from the sun

_____ interacts with farmers' crops