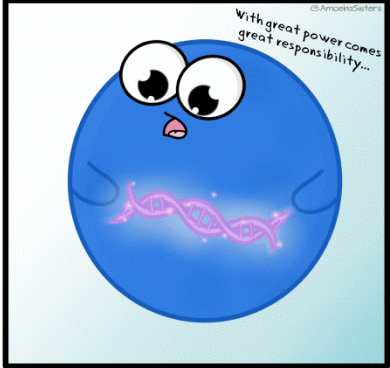
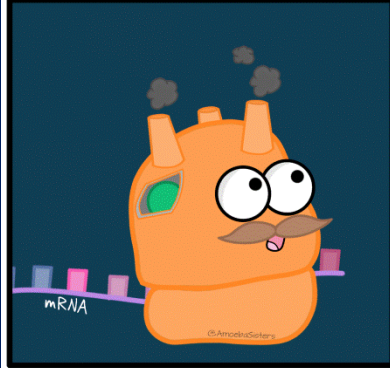


### Nucleus



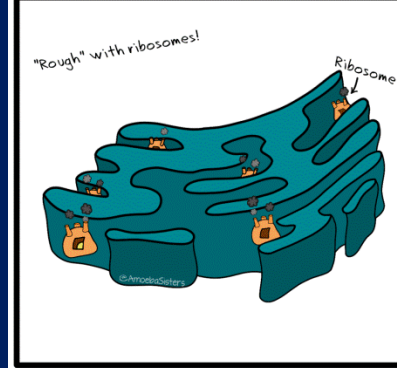
Genetic information bearer of the cell

### Ribosomes



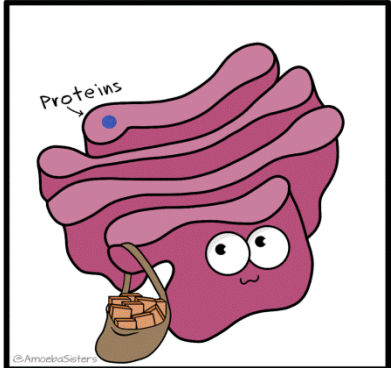
Protein synthesizers of the cell

### Rough Endoplasmic Reticulum



Protein assembly line of the cell

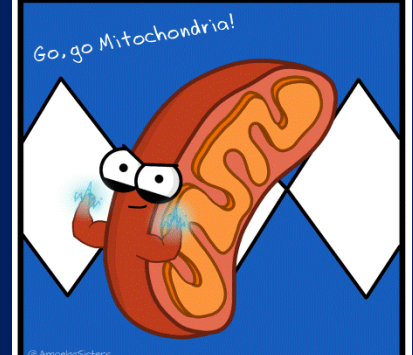
### Golgi Apparatus



Post office of the cell

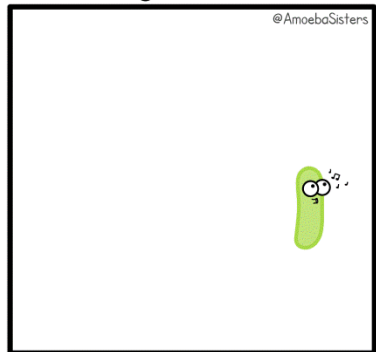
# Cell Structures and Organelles

### Mitochondrion



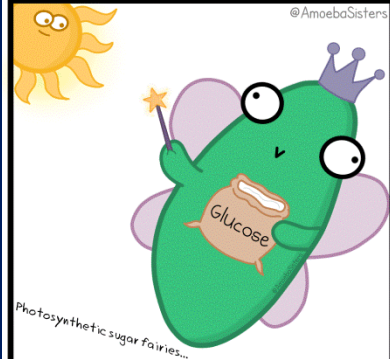
Mighty energy producer of the cell

### Lysosome



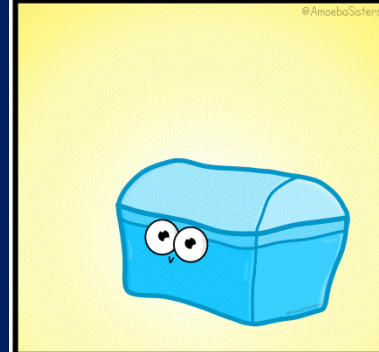
Enzyme-packed wrecking balls of the cell

### Chloroplast



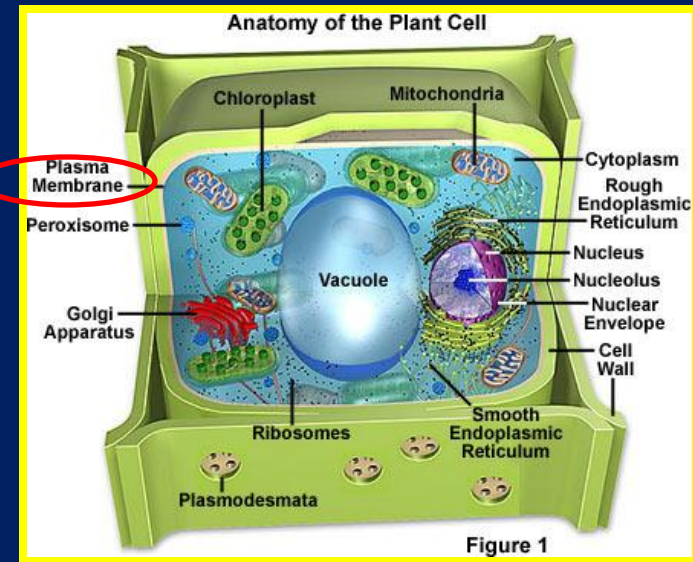
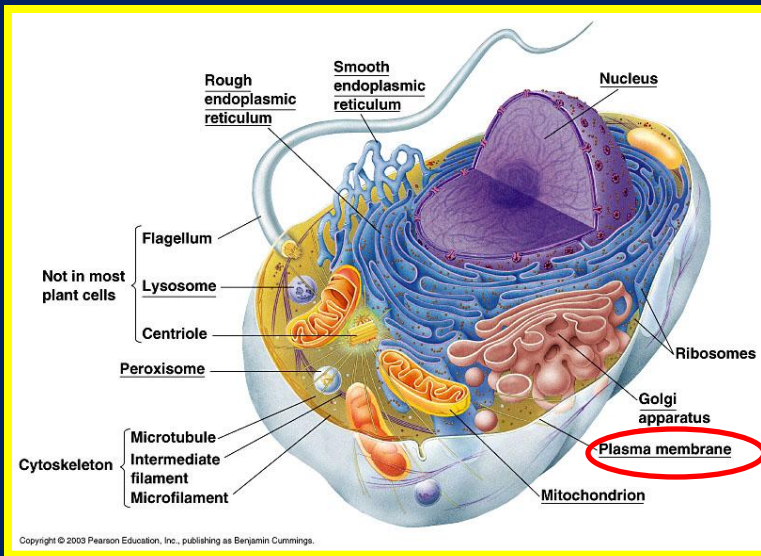
Glucose synthesizers of the cell

### Vacuole



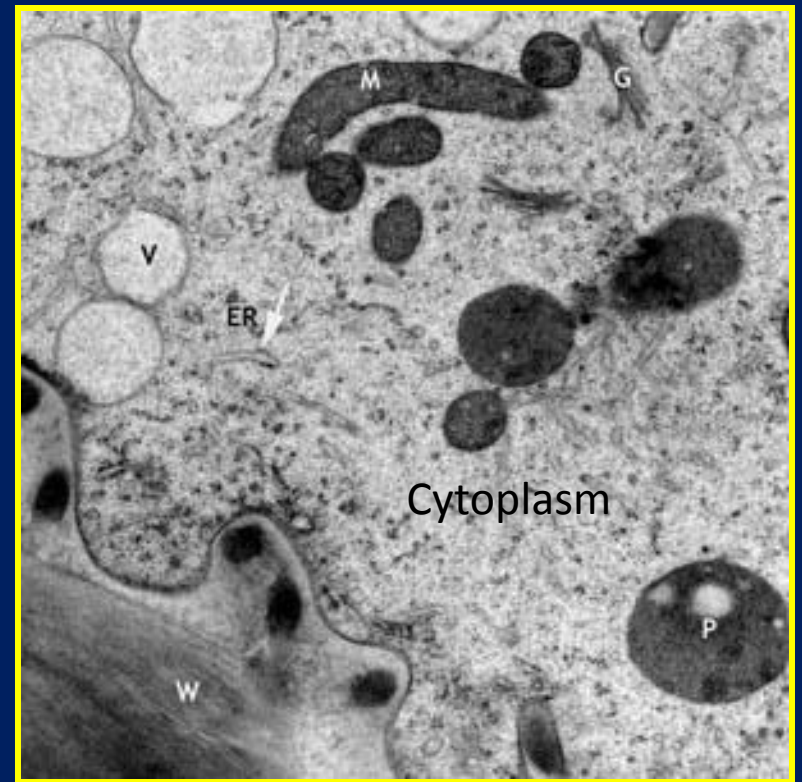
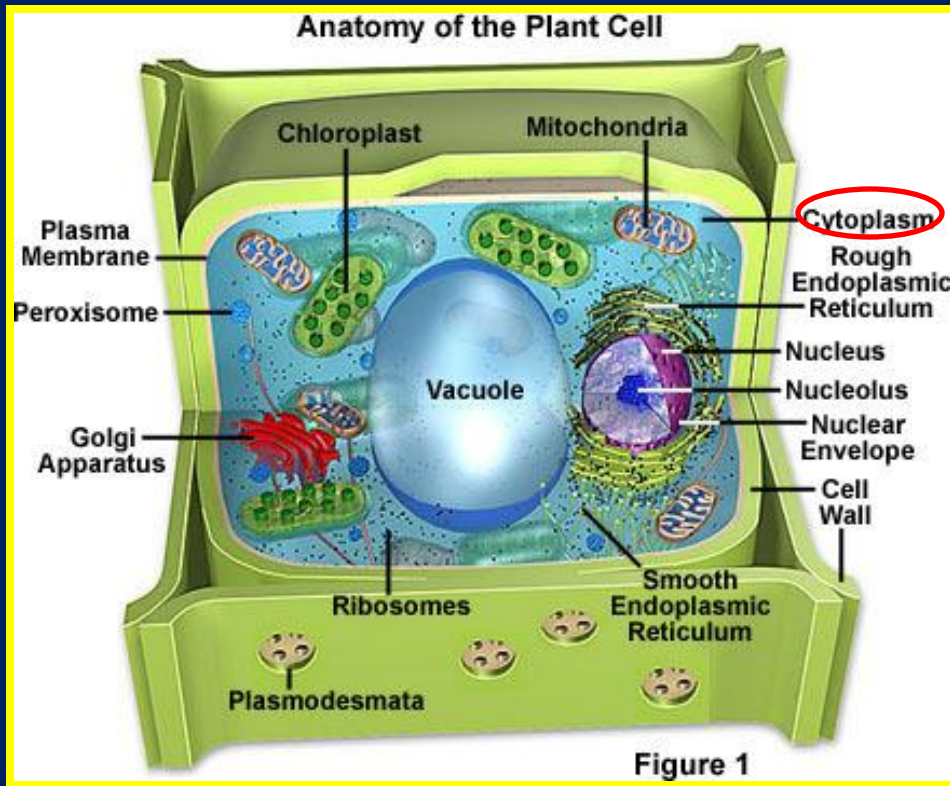
Storage containers of the cell

All cells are surrounded by a cell or plasma membrane that acts as a boundary between the cell and the cell's environment.

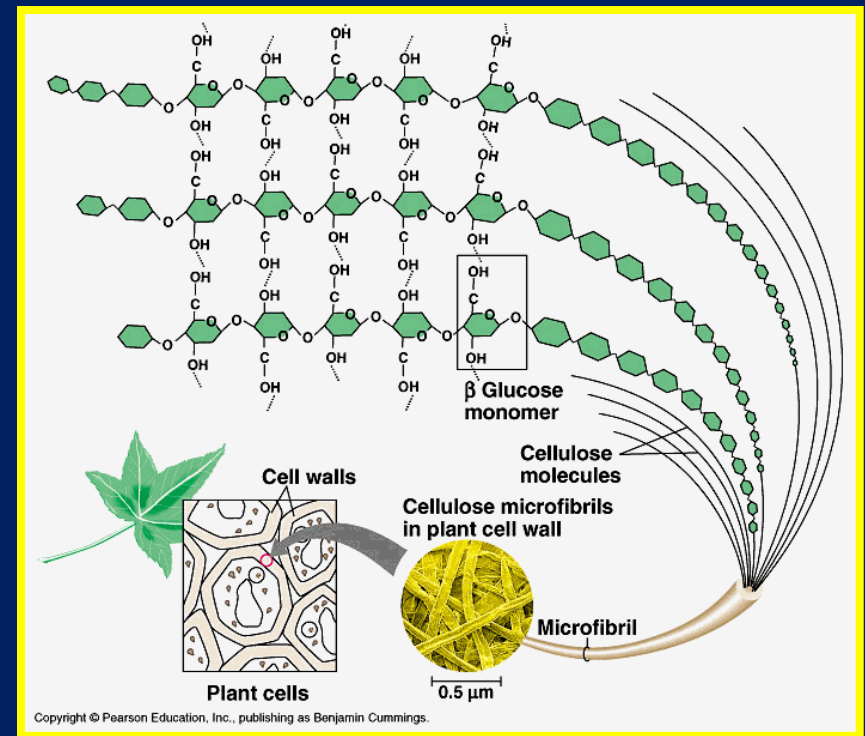
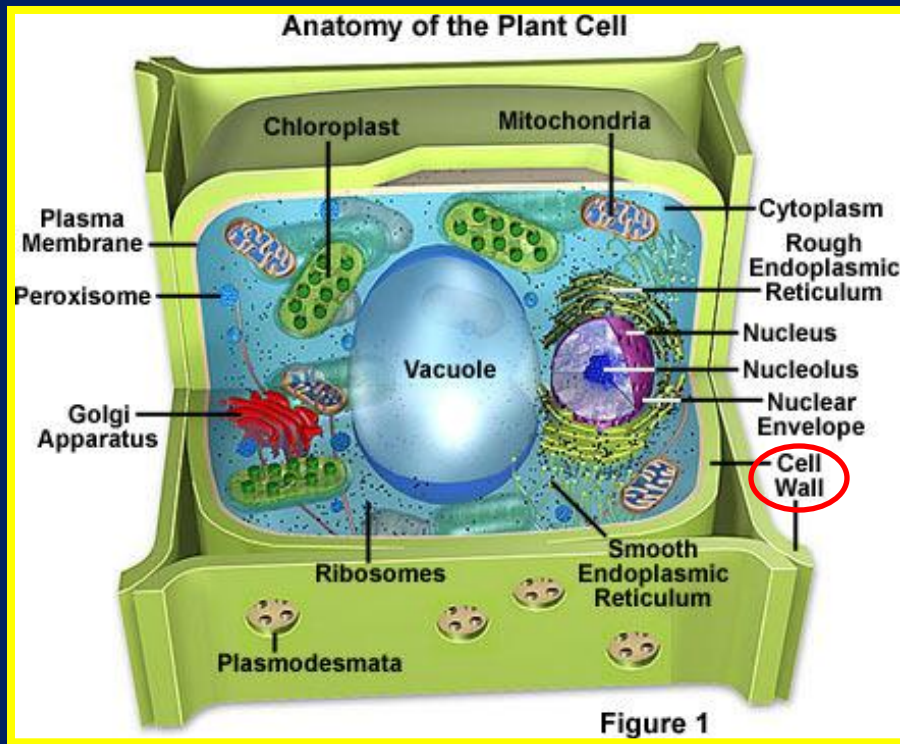


The cell membrane maintains homeostasis for the cell by controlling what enters and leaves the cell.

Cytoplasm is the clear, gelatinous fluid inside every cell which helps suspend the organelles and helps transport material around the cell.

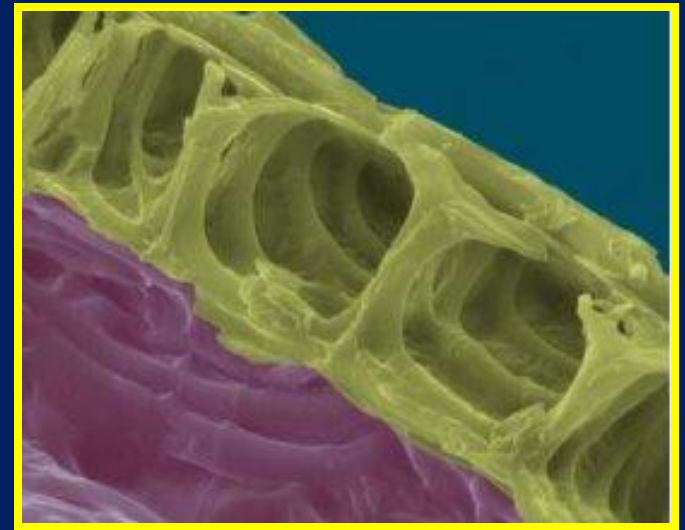
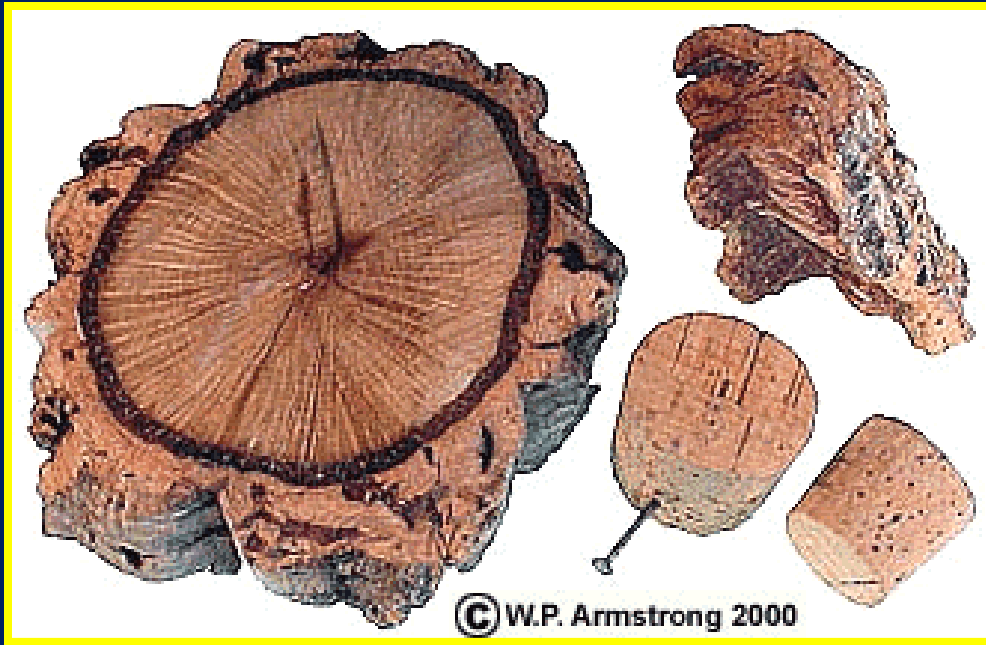


# Plant cells also have an additional boundary called the cell wall



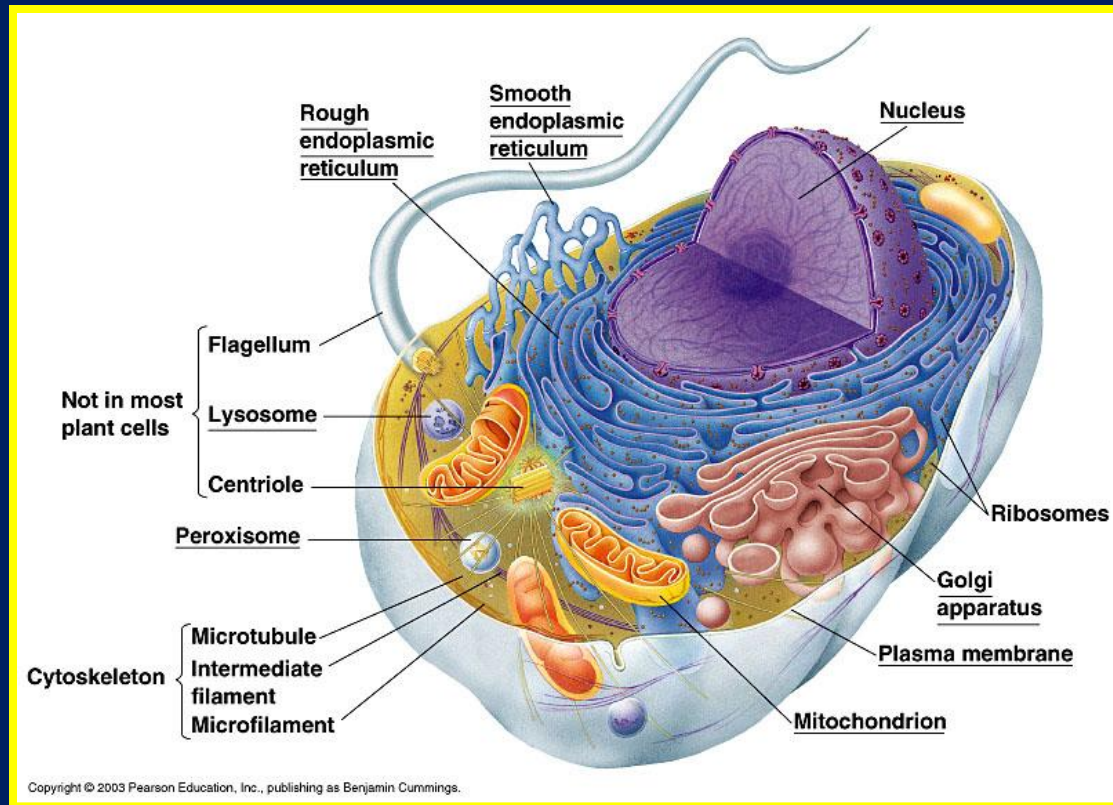
Cell walls are very rigid and provide the cells with support, structure, and protection.

Cork and wood are also made up of cellulose fibers in the cell walls of dead plant cells.



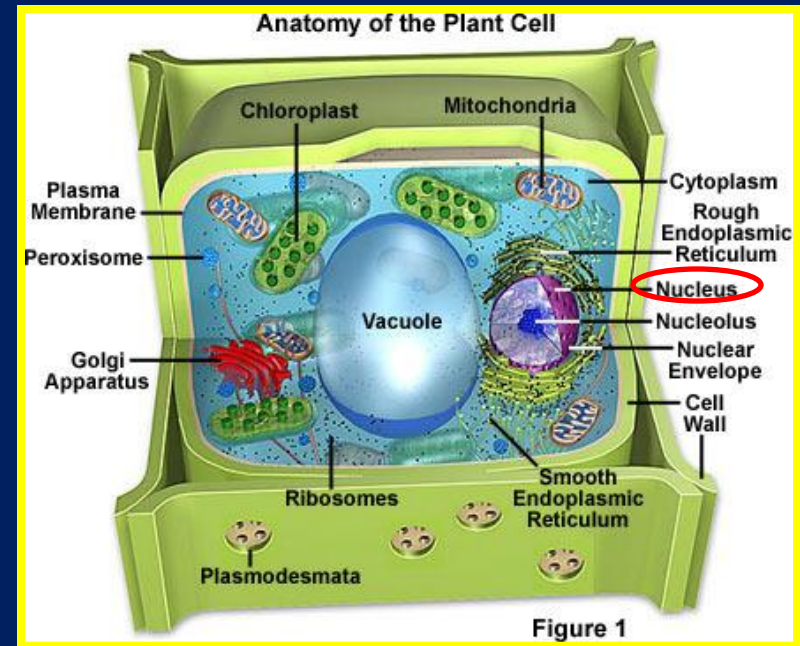
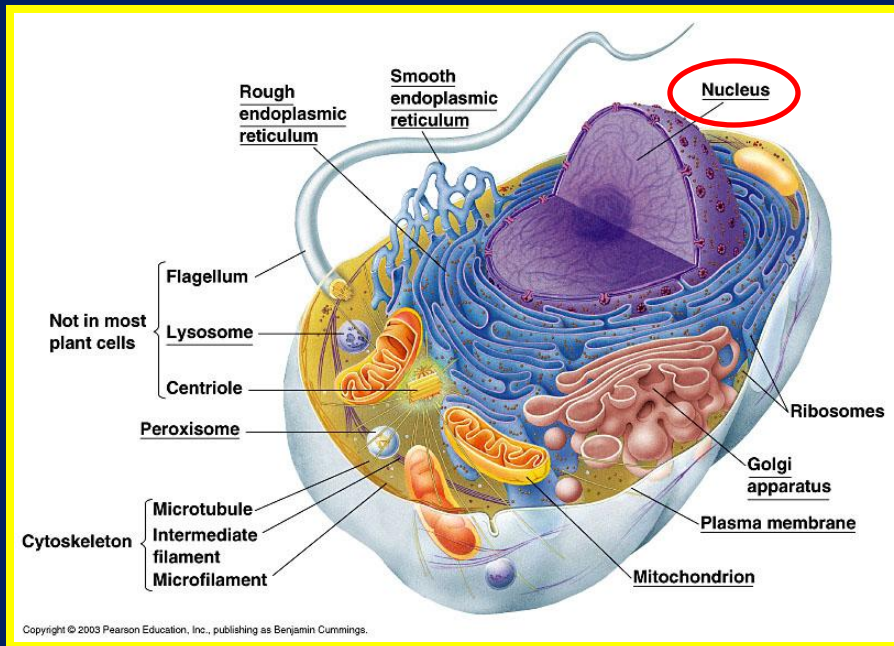
Cellulose fibers are used to make paper products.

The membrane-bound structures within eukaryotic cells are called organelles.



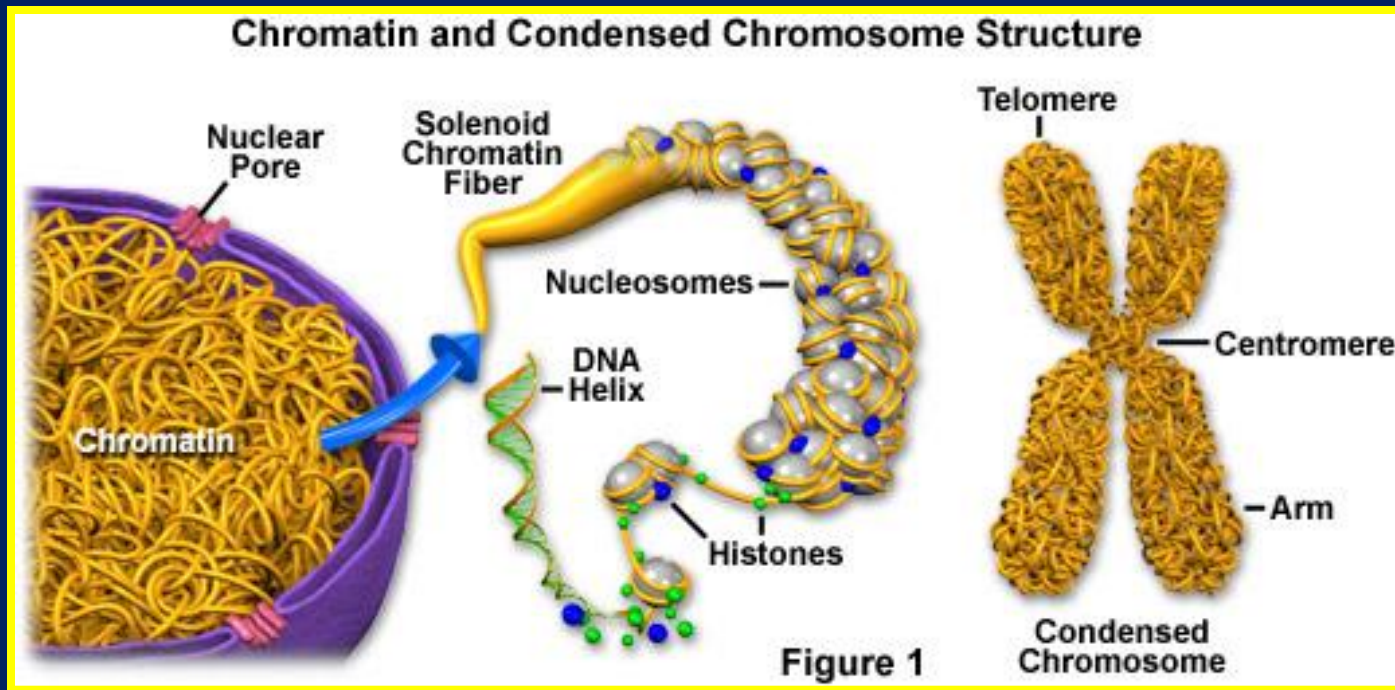
Each organelle has a specific function that helps the cell survive.

All eukaryotic cells contain a nucleus with DNA that contains the directions for making proteins



Every part of the cell depends upon proteins to do its job, so in this way the nucleus controls the activity of the other organelles.

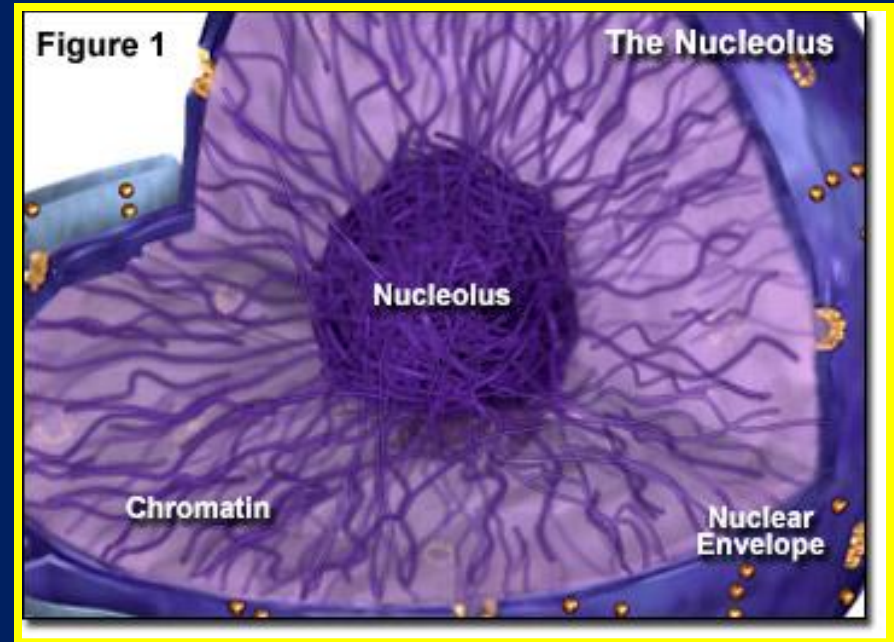
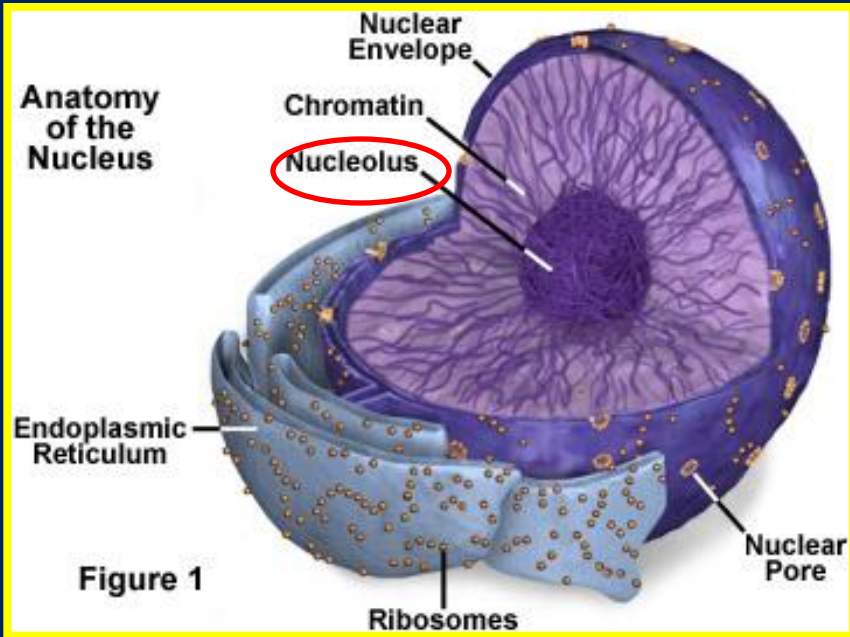
During most of the cell's life, the DNA is contained in chromatin, which are strands of DNA wrapped around proteins called histones.



Before cells divide, the chromatin condenses to form linear chromosomes.

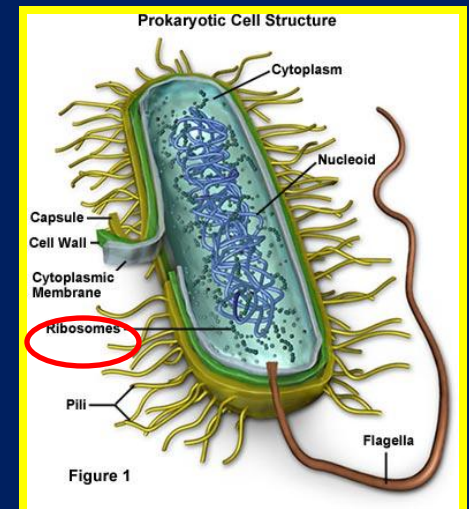
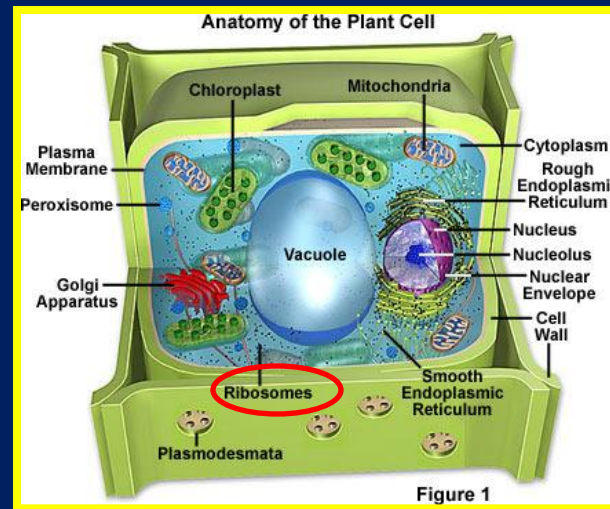
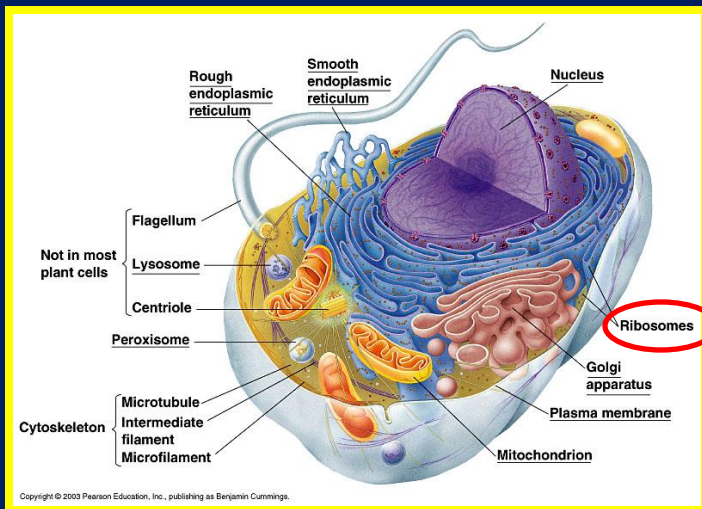


Within the nucleus is another organelle called the nucleolus that makes ribosomes



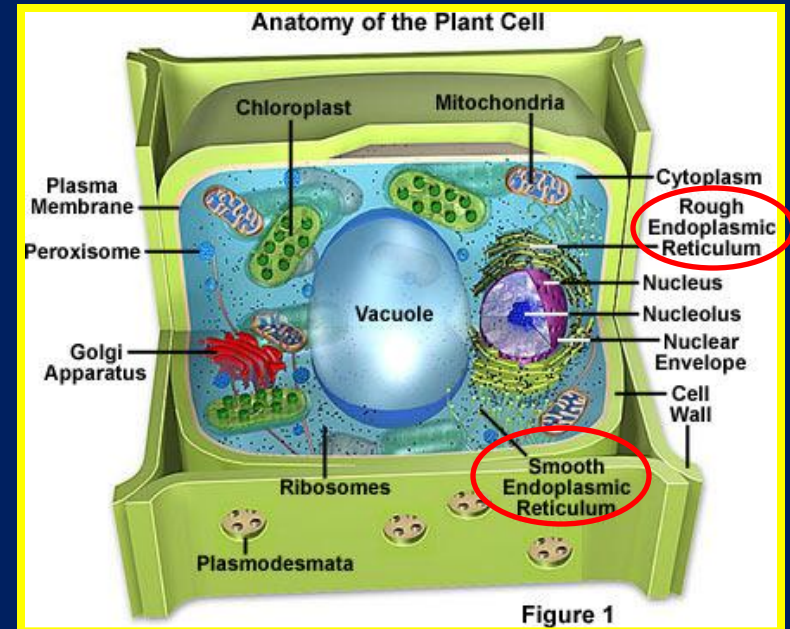
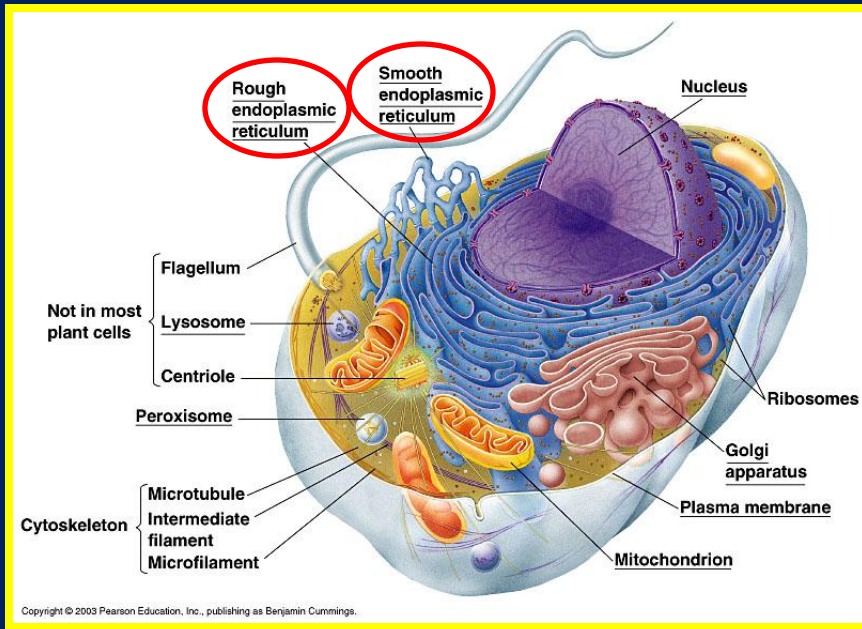
You can always distinguish the nucleus from other organelles by the presence of the nucleolus

# Ribosomes are where cells assemble proteins according to the directions contained in the cell's DNA



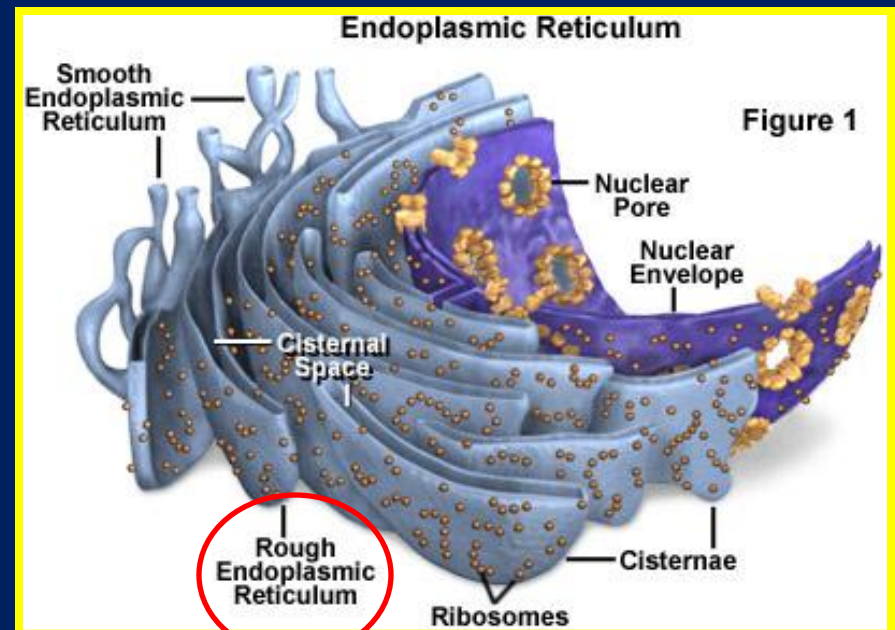
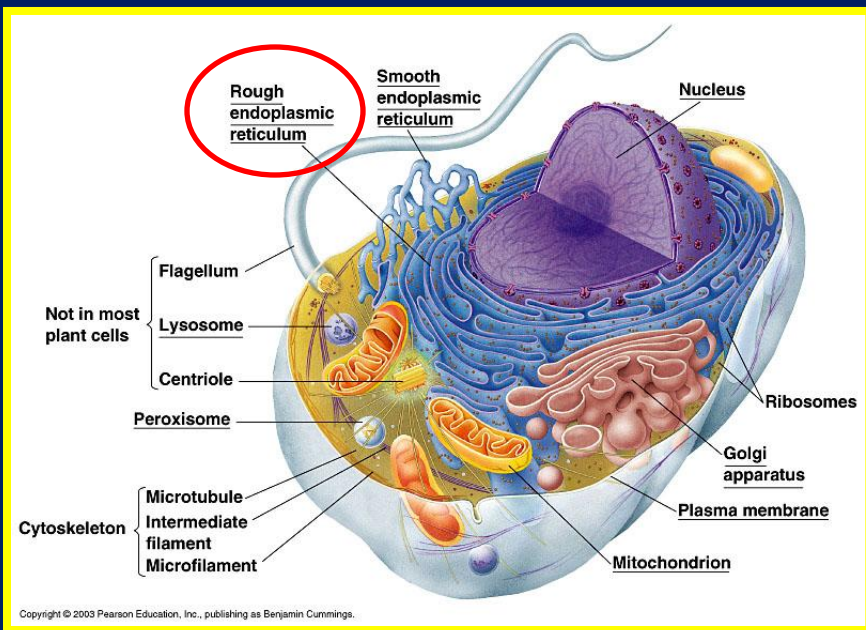
Ribosomes are found in every single type of cell, including prokaryotic cells.

The Endoplasmic Reticulum, E.R., is a series of folded membranes that extend from the nucleus out to the cell membrane.



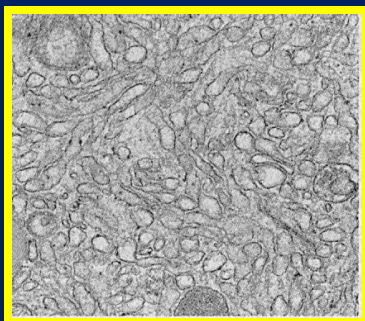
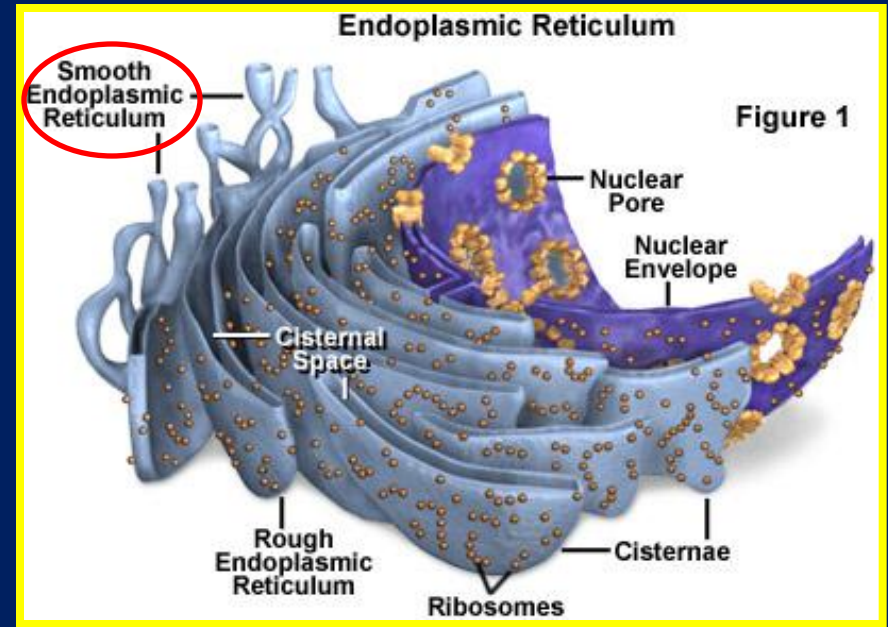
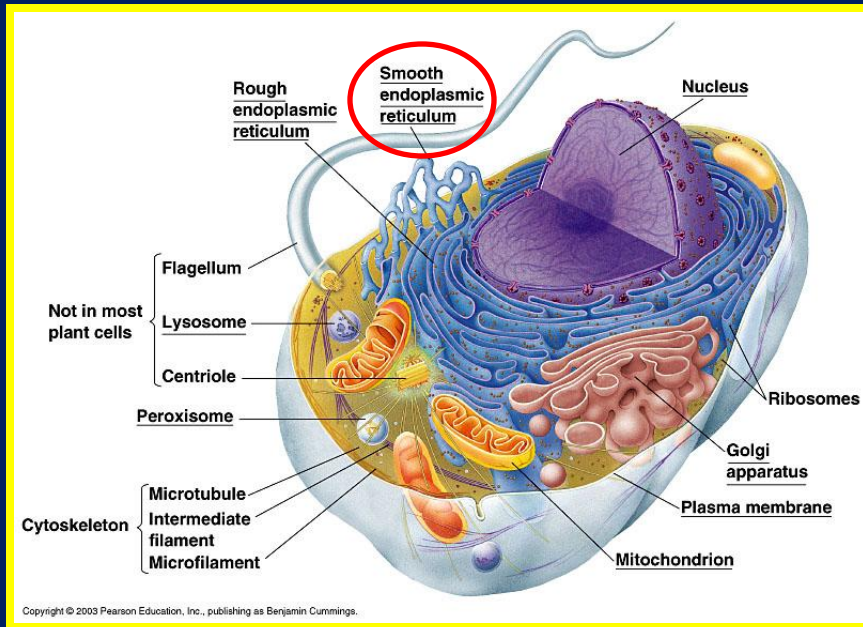
The folds of the E.R. membrane increase the surface area so that more chemical reactions can take place on the E.R.

# The Rough E.R. contains ribosomes



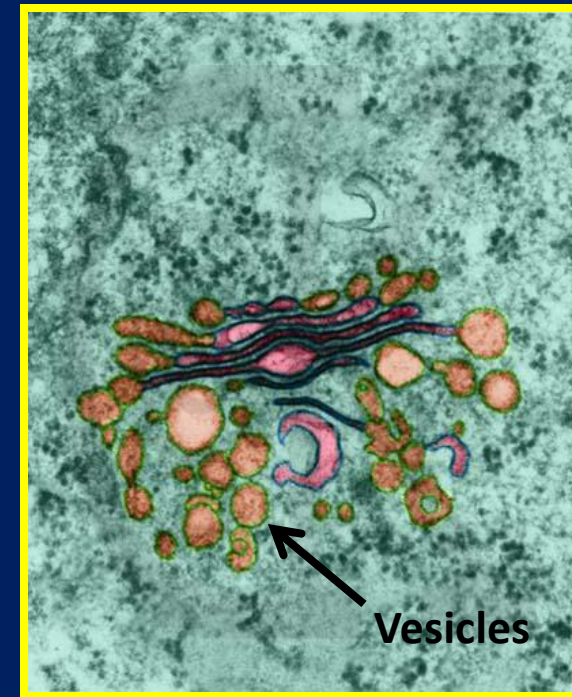
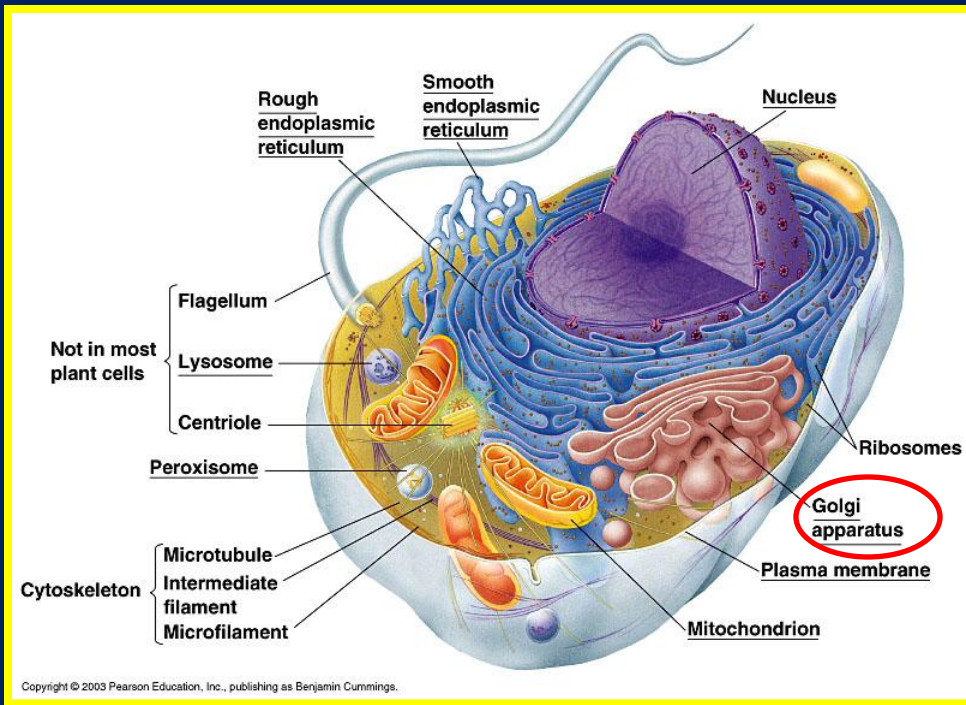
Proteins made in the ribosomes, found on the rough E.R., are transported out of the cell

The Smooth E.R. is the site of chemical reactions that produce lipids as well as detoxify drugs and alcohol.



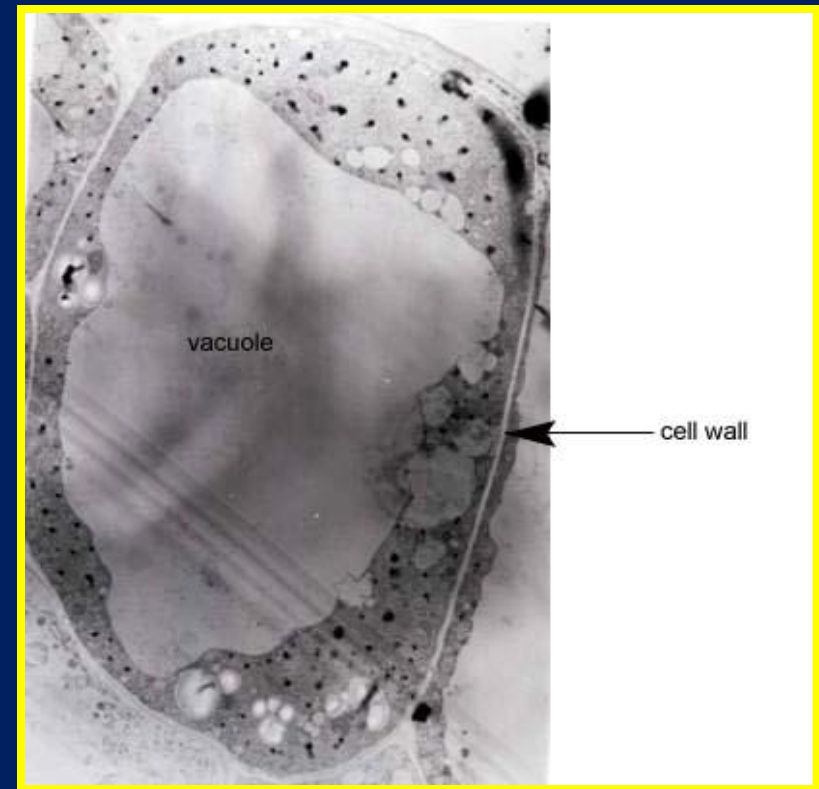
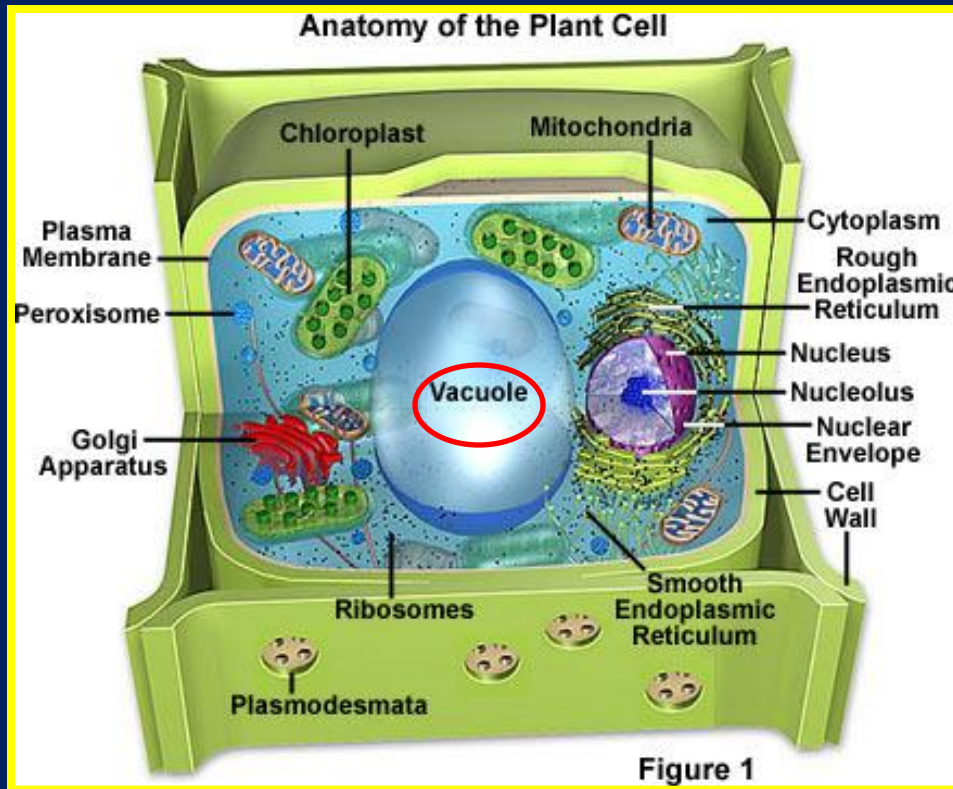
The more drugs or alcohol one consumes, the more the smooth E.R. grows, increasing one's tolerance.

The Golgi Apparatus is a system of flattened membranes which sorts and packages proteins.



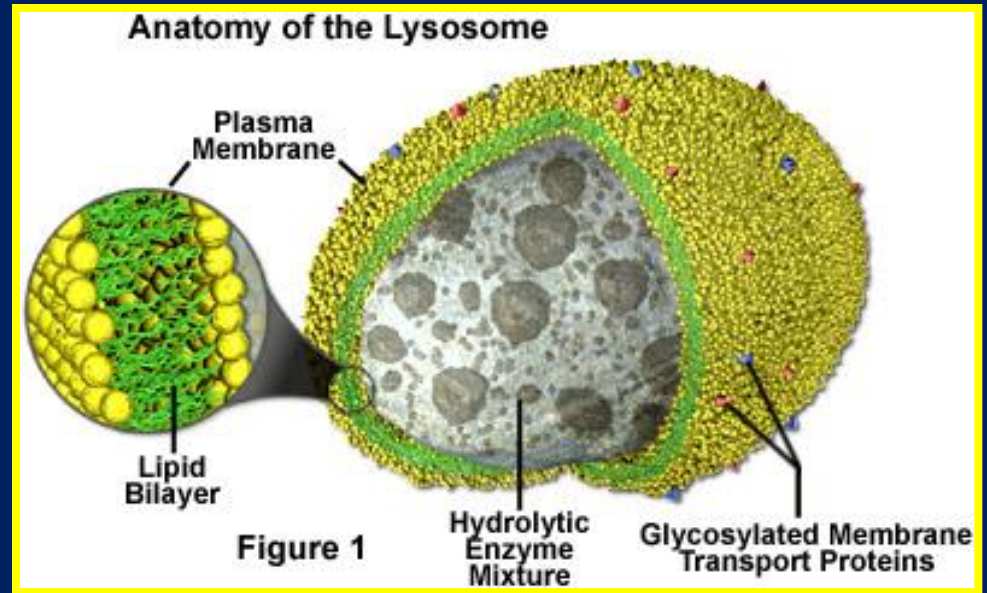
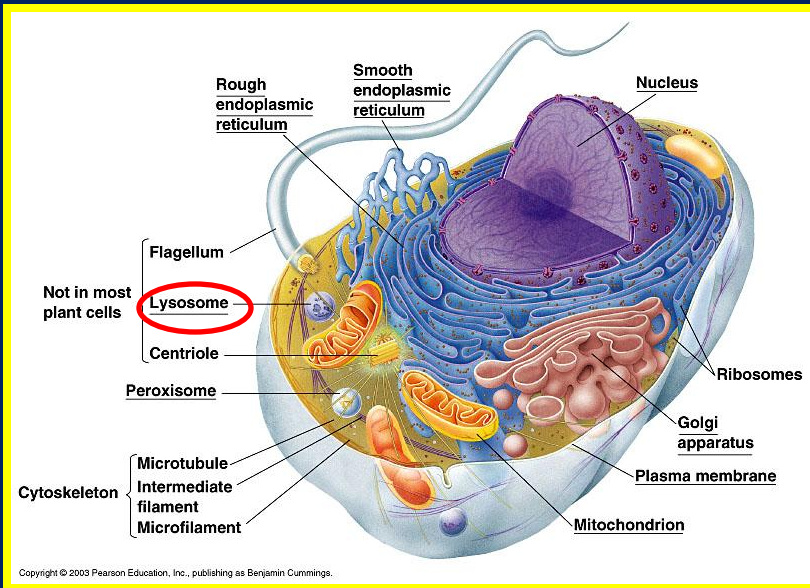
Once sorted, proteins are enclosed in vesicles and sent out to their appropriate destination.

Vacuoles store materials such as water, nutrients, and other materials.



Vacuoles in plants cells tend to be extremely large, whereas in animal cells, they are small.

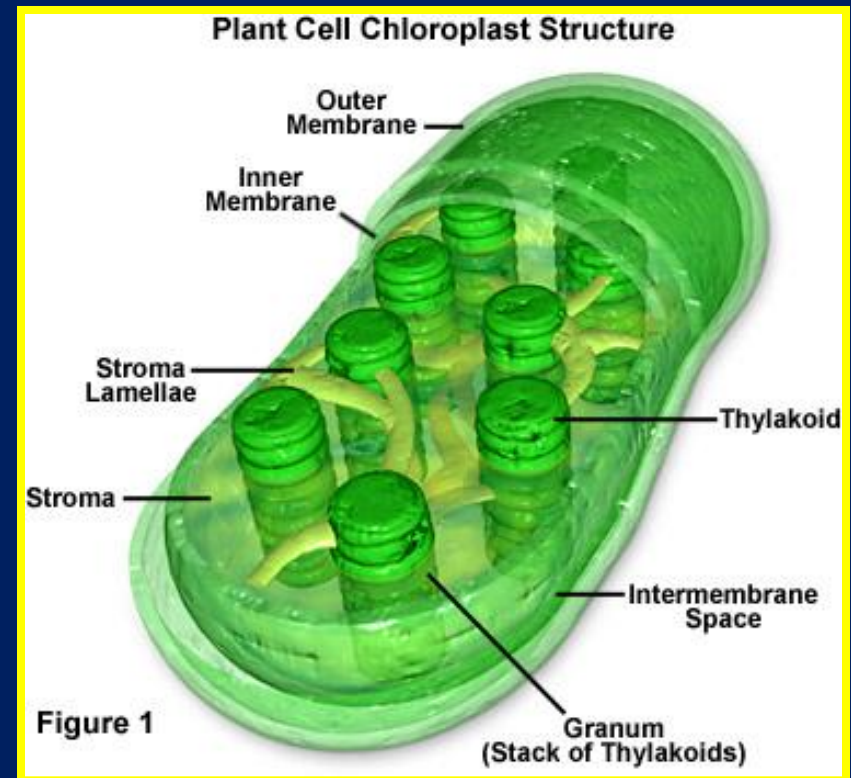
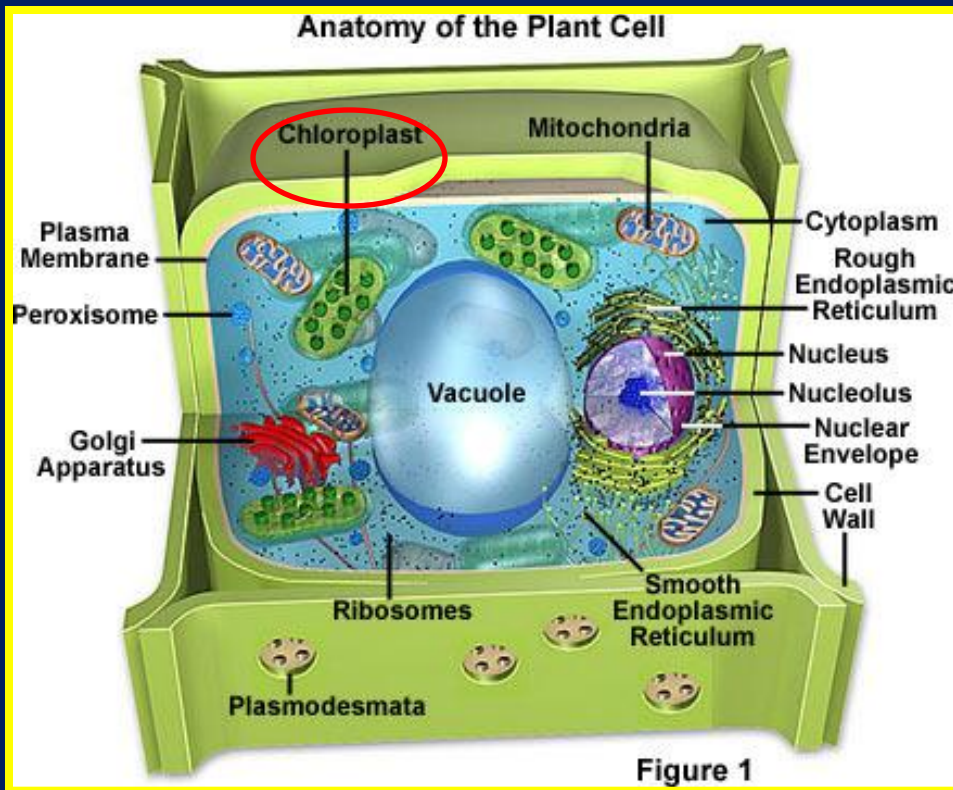
# Lysosomes clean up the cell with the help of digestive enzymes



Lysosomes are not found in plant cells

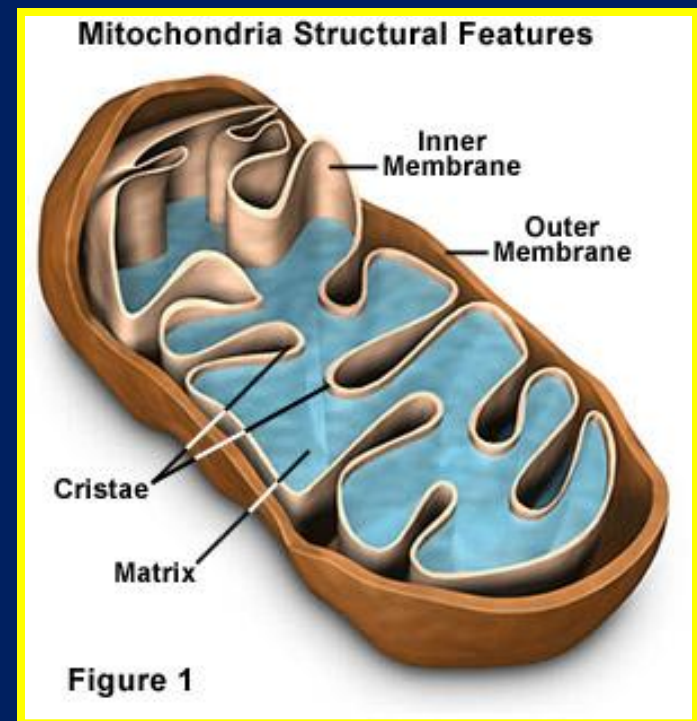
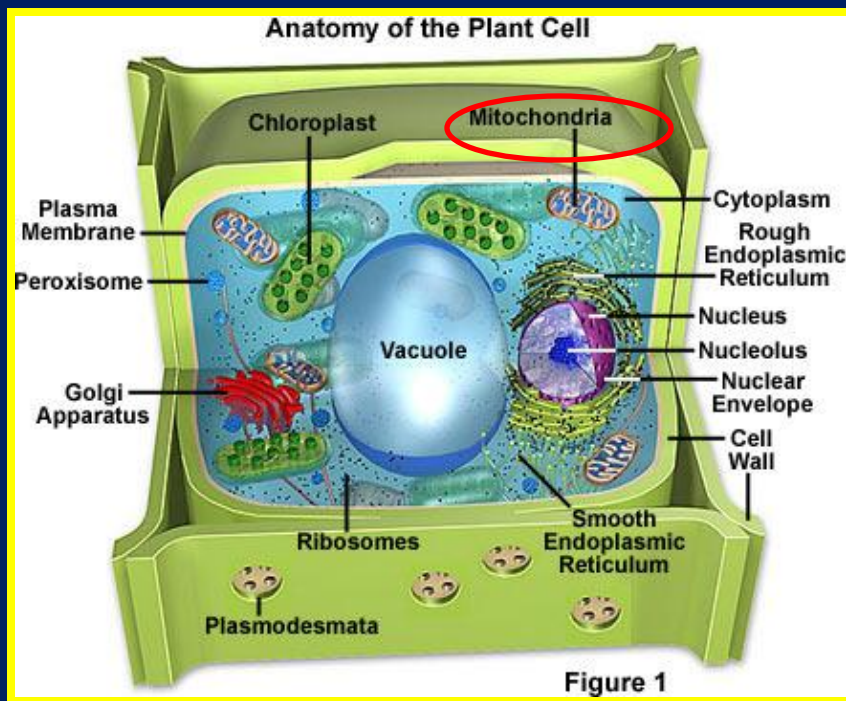


Chloroplasts capture energy from sunlight and use it to produce glucose during the process of photosynthesis.



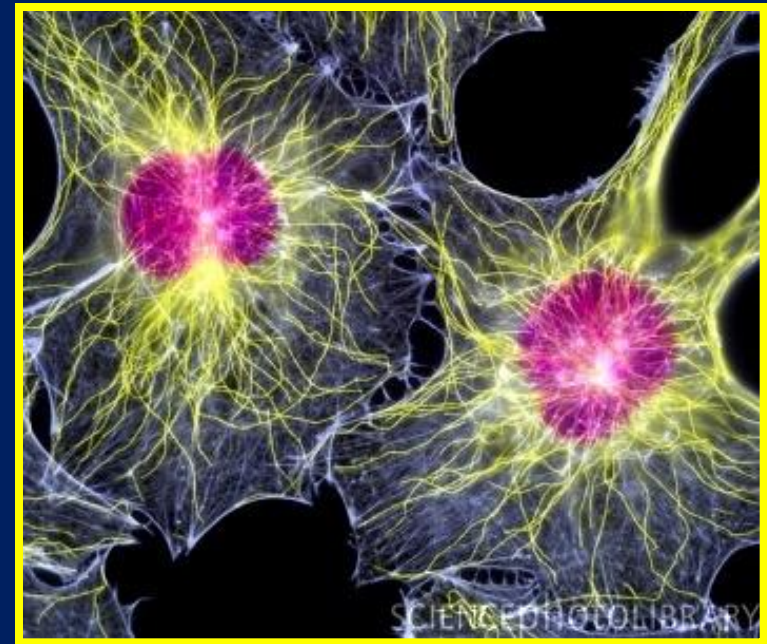
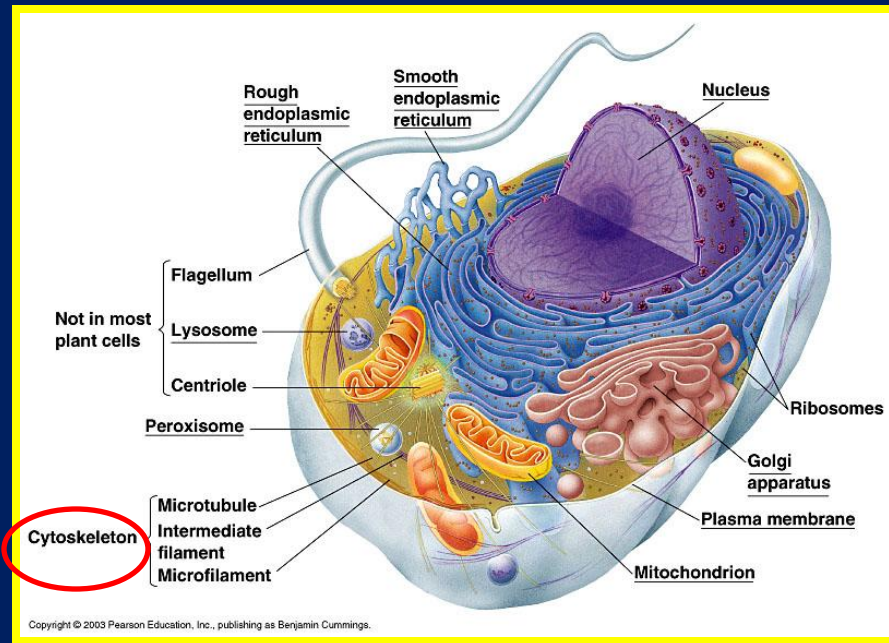
Chloroplasts are found in the green parts of plants

Mitochondria convert glucose into a form of energy that the cell can use during a process called cellular respiration



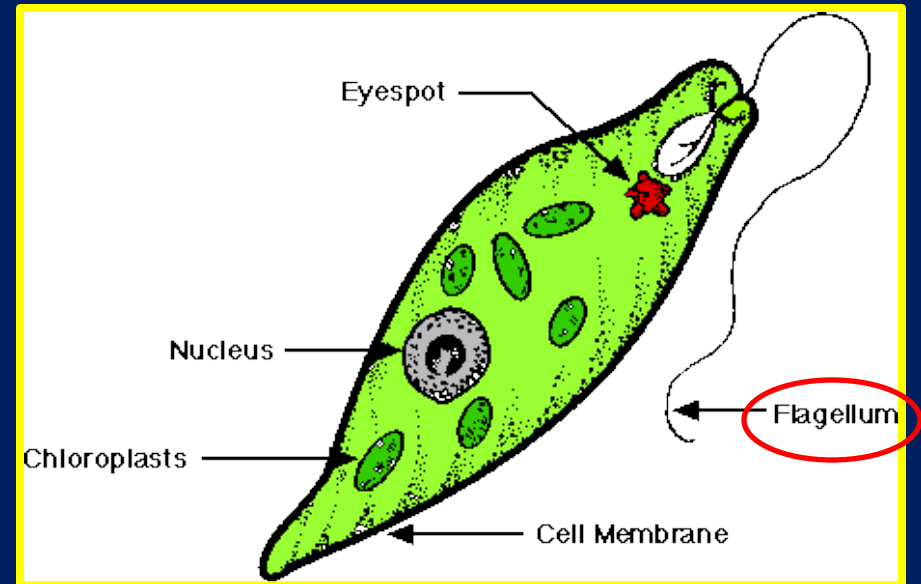
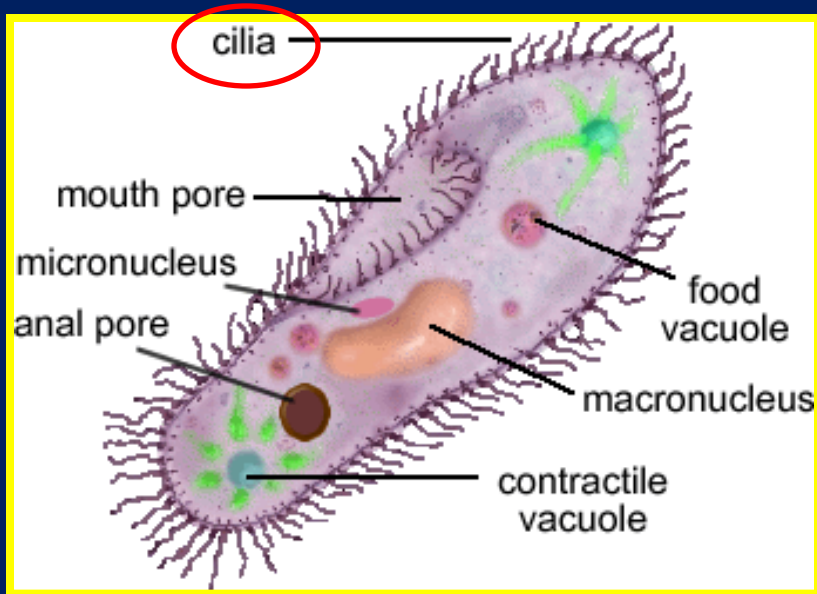
Mitochondria are found in both plant and animal cells

Animal cells, that lack cell walls, are supported by a cytoskeleton.

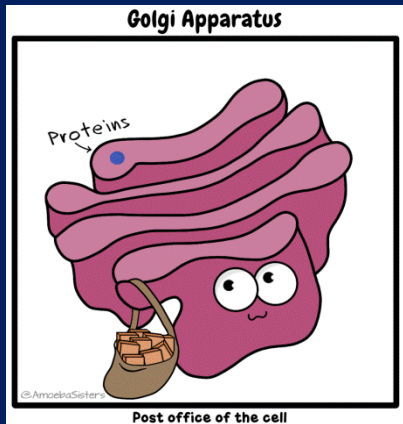
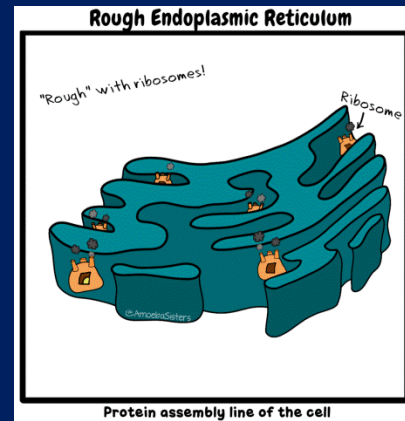
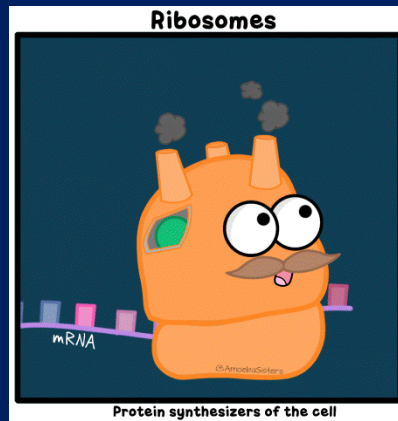
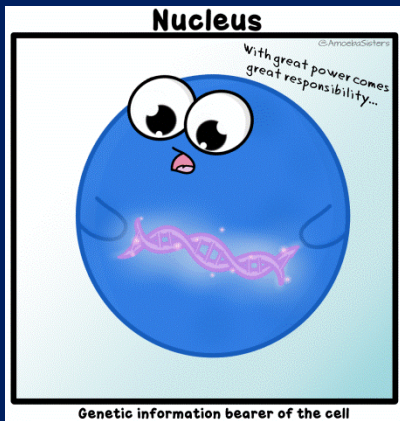


The cytoskeleton is made up of microtubules (bones) and microfilaments (muscles).

Some cells have hair-like structures called cilia and tail-like structures called flagella.



Both cilia and flagella aid in movement or locomotion.



# The End

