

September 10, 2018

Mastery Objective: Students will use a model to describe the jobs of organelles by analyzing analogies to determine how they contribute to the functioning of cells.

Drill Warm-Up:

Unicellular organisms are made up of one cell. Multicellular organisms are made up of more than one cell. Identify each organism as 'unicellular' or 'multicellular'.

1.



2.



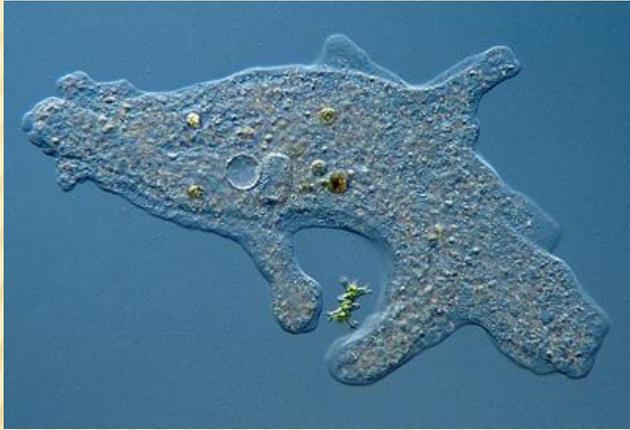
3.



4.



All living things are made of at least one cell. Types of cells look different from each other because they have different functions.

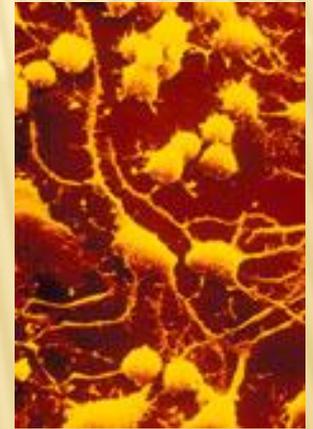


amoeba

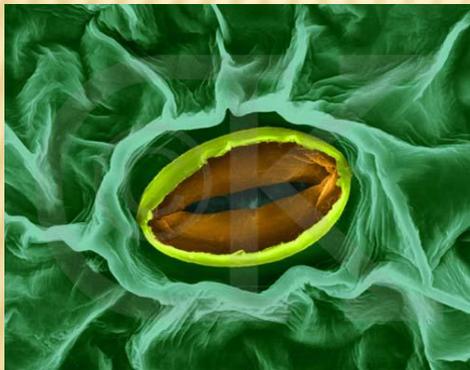


plant cells

10 μm



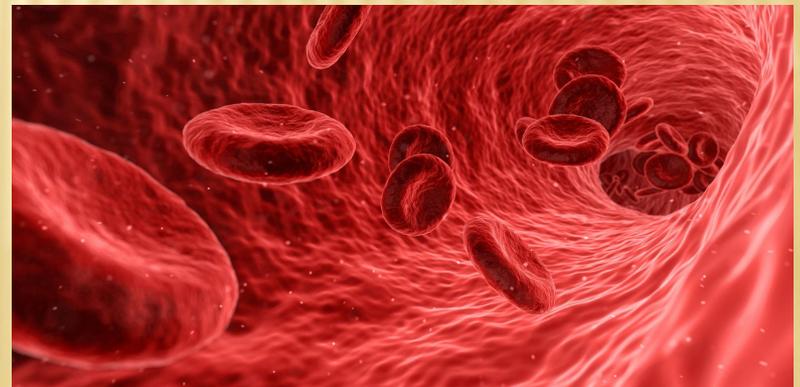
neurons



stomata

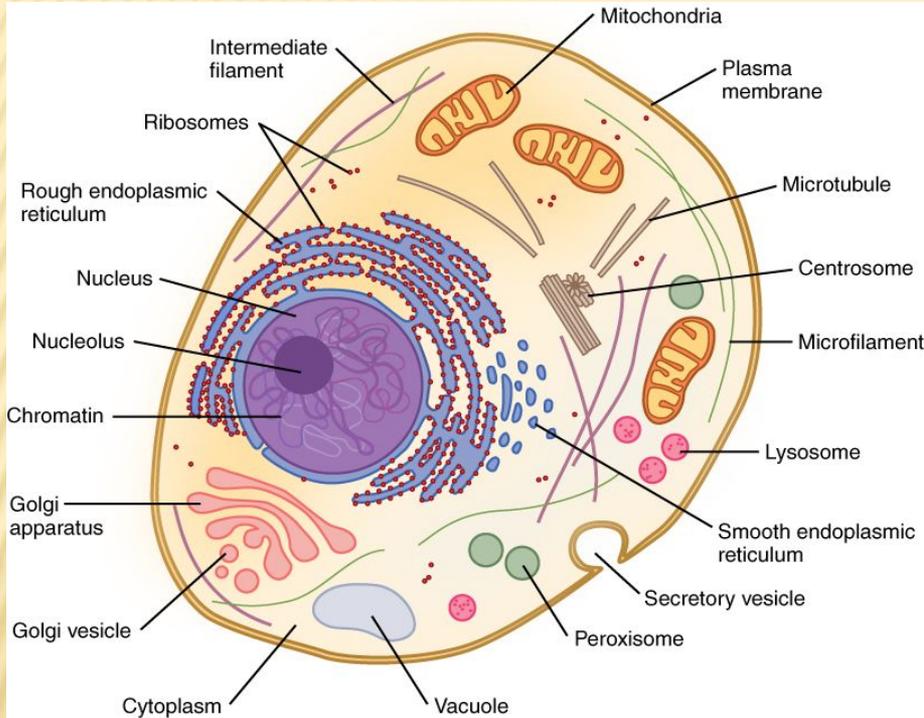


white blood cell

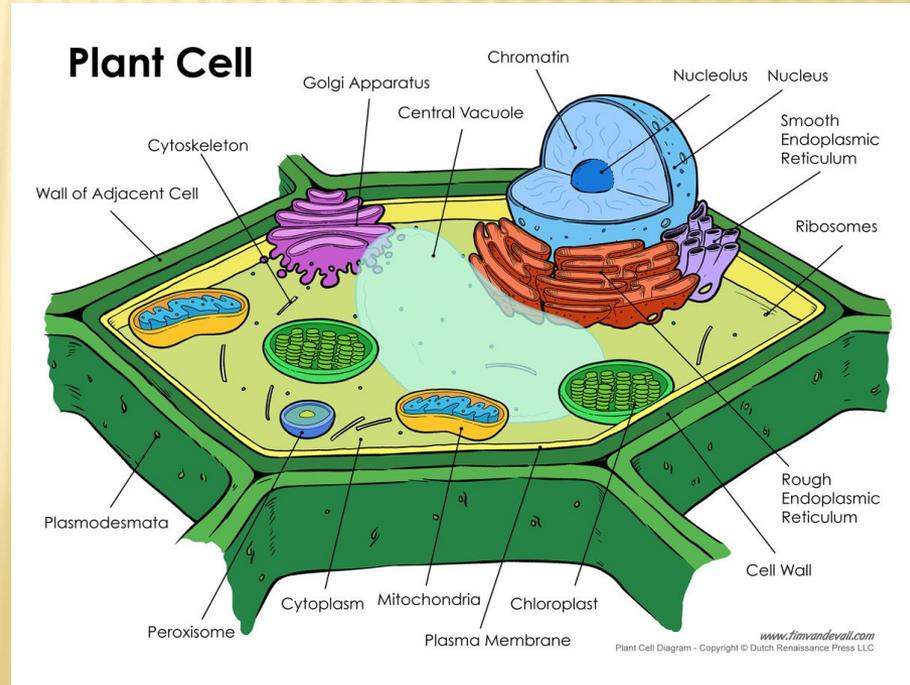


red blood cells

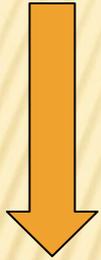
Organelles perform a specific job for each cell. Organelle means “little organ”.



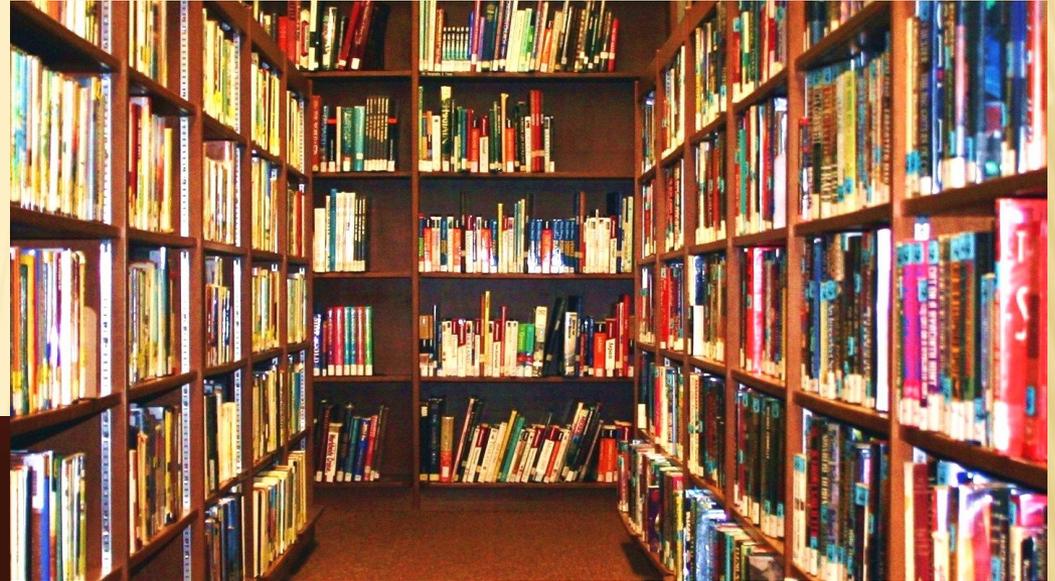
Animal Cell



Organelles inside the cell...determining function based on analogies!



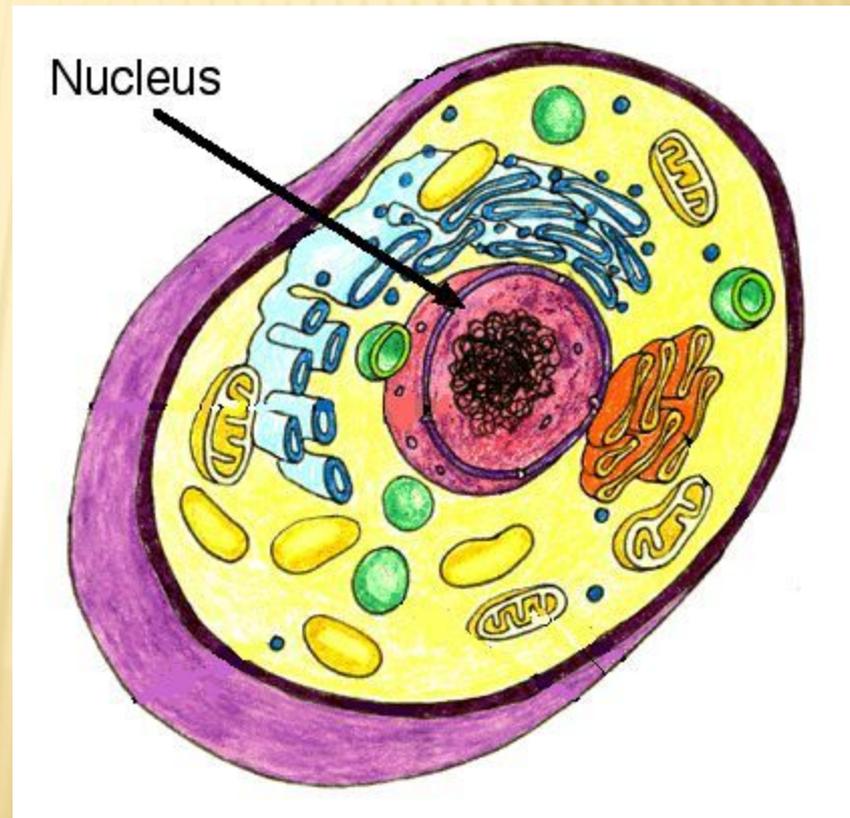
Nucleus



Nucleus--

- **stores DNA which contains genetic info for making proteins**

- **largest organelle**



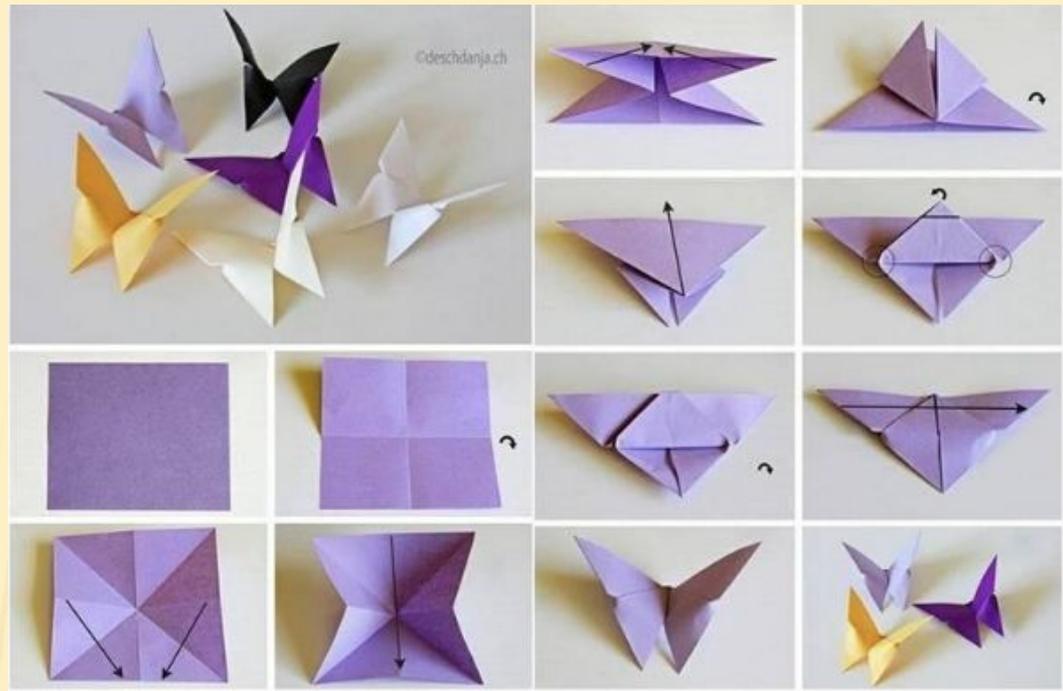
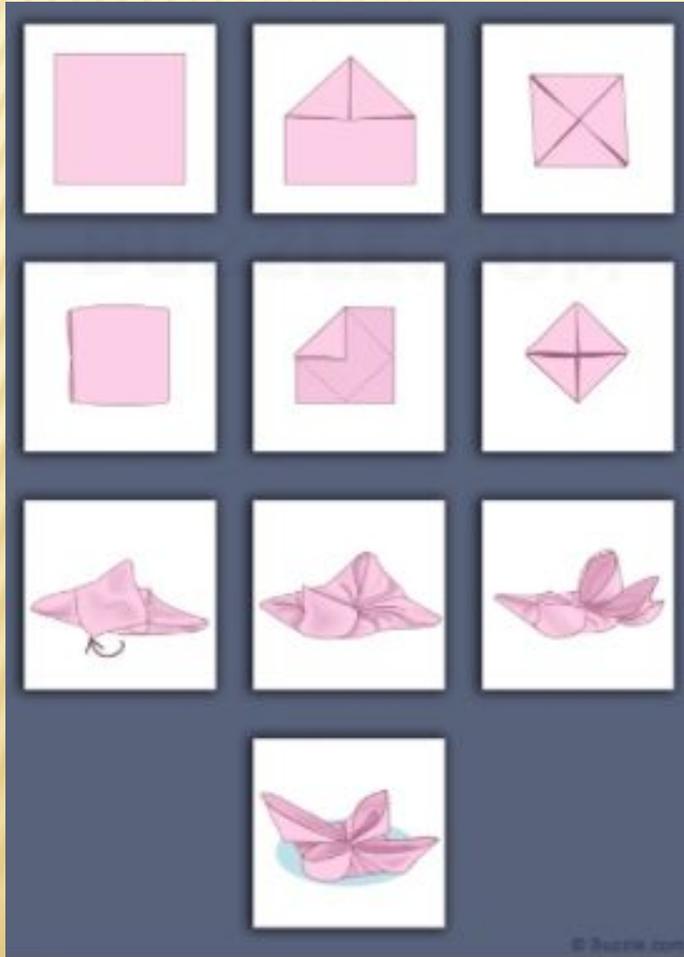
Cytoplasm



endoplasmic reticulum



golgi apparatus



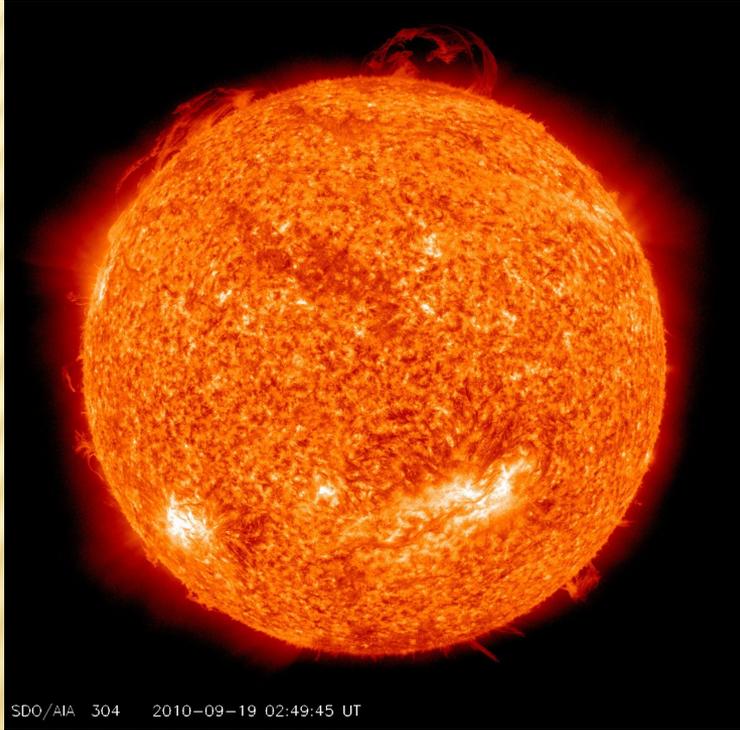
ribosomes



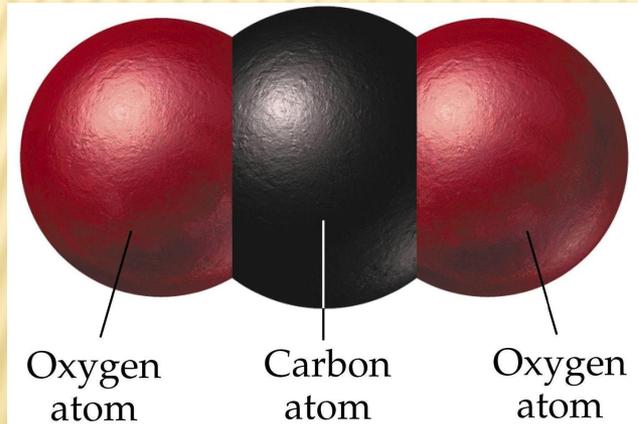
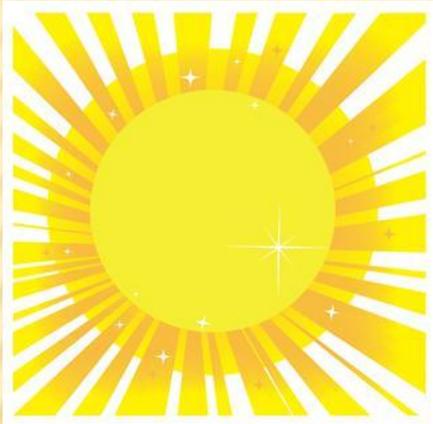
cell membrane



mitochondria



chloroplasts



cell wall



central vacuole

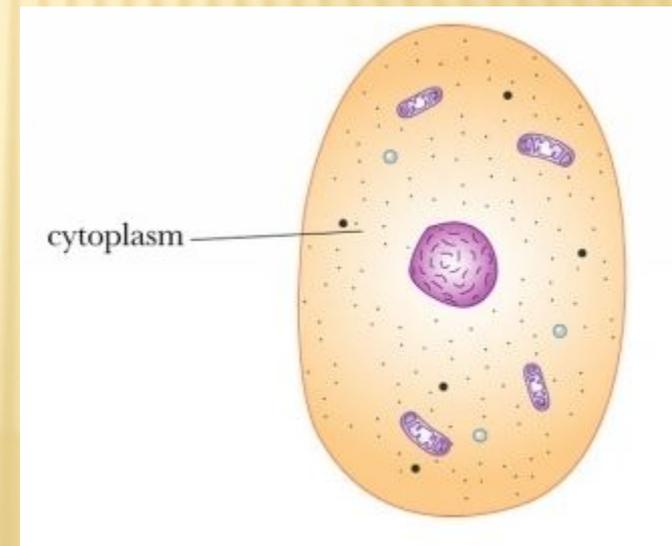
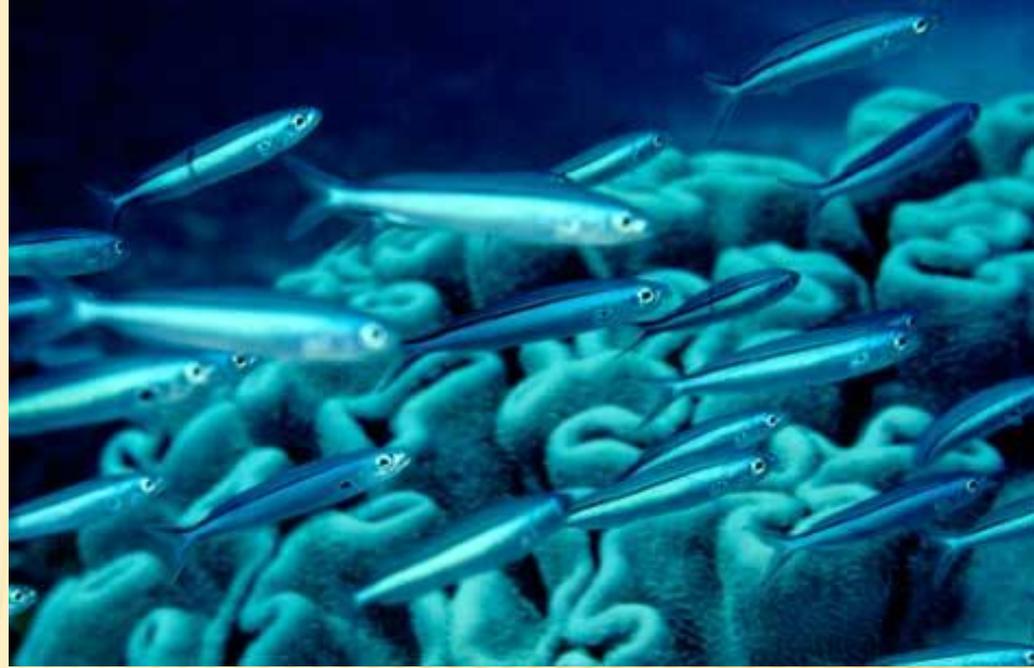


Cytoplasm



Cytoplasm

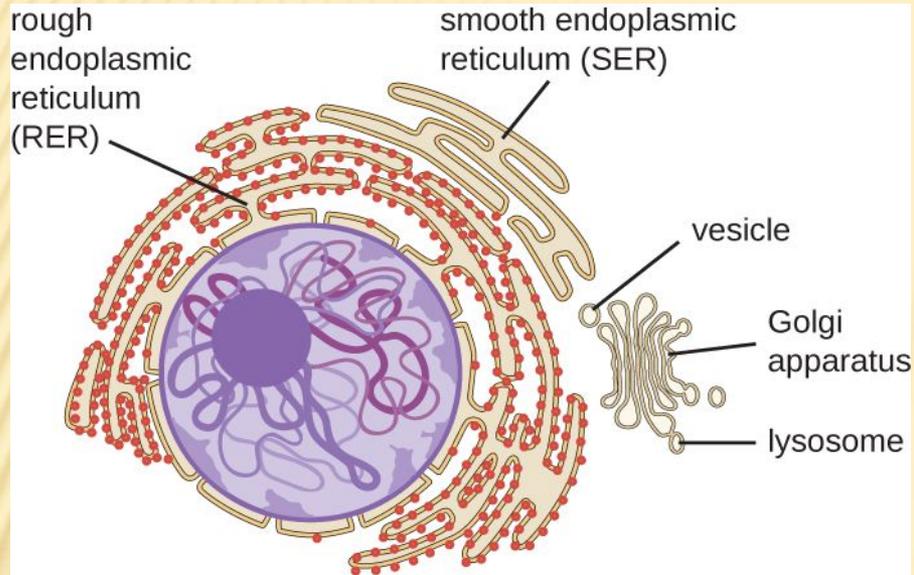
- Jelly-like substance
- Holds organelles in place and allows substances to easily move throughout cell



endoplasmic reticulum

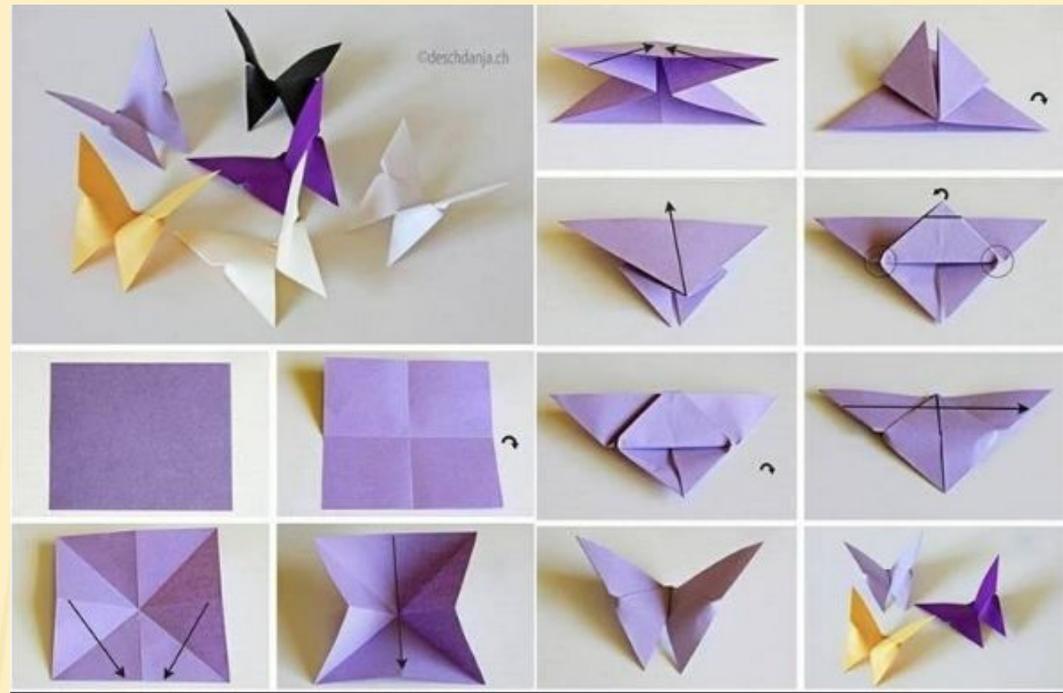


endoplasmic reticulum



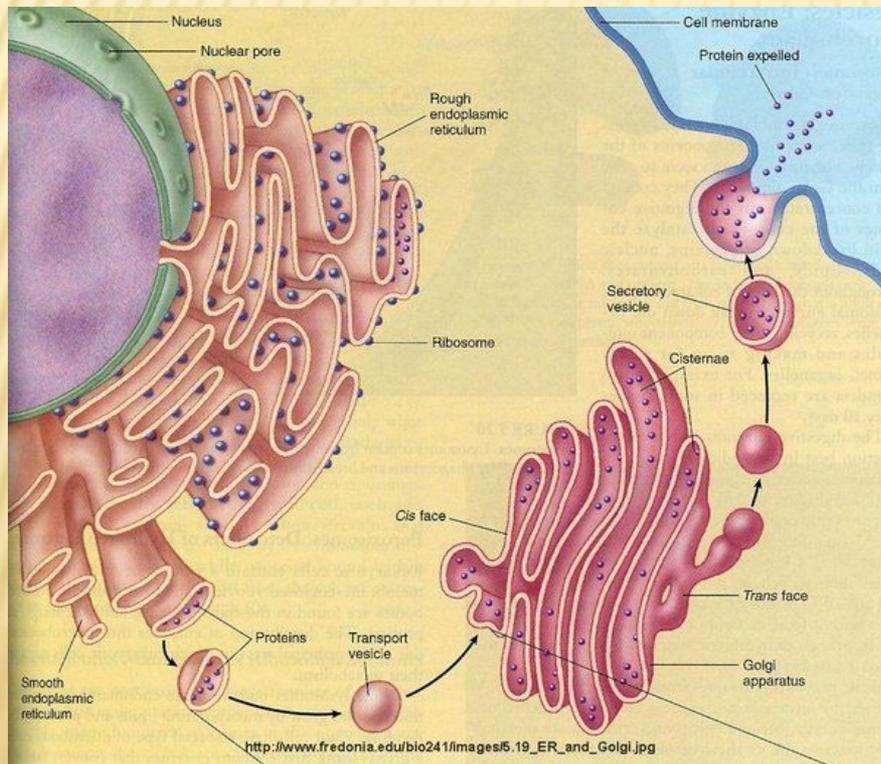
- Moves substances from one part of the cell to another (delivery system)
- Rough: contains ribosomes
- Smooth: no ribosomes

golgi apparatus



Golgi Apparatus

- **Folds and packages proteins that are released from the rough endoplasmic reticulum**



- **proteins stay inside cell or are shipped out**

ribosomes

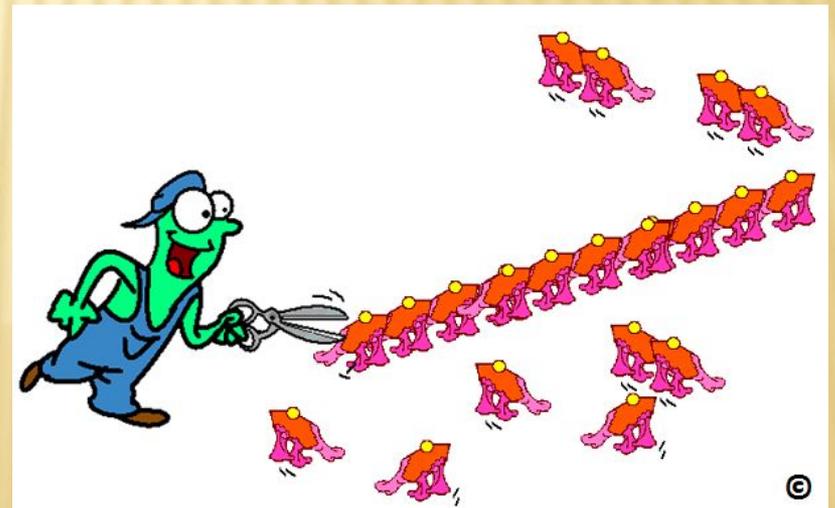
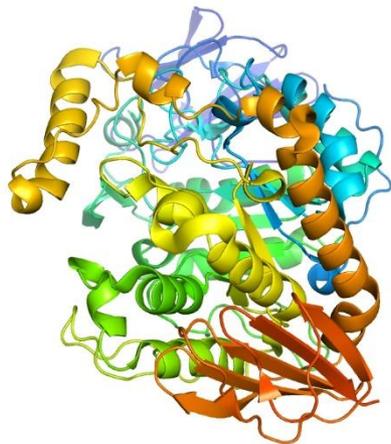


Ribosomes



- Hook together amino acids to form proteins (protein synthesis)
- Smallest and most abundant organelle

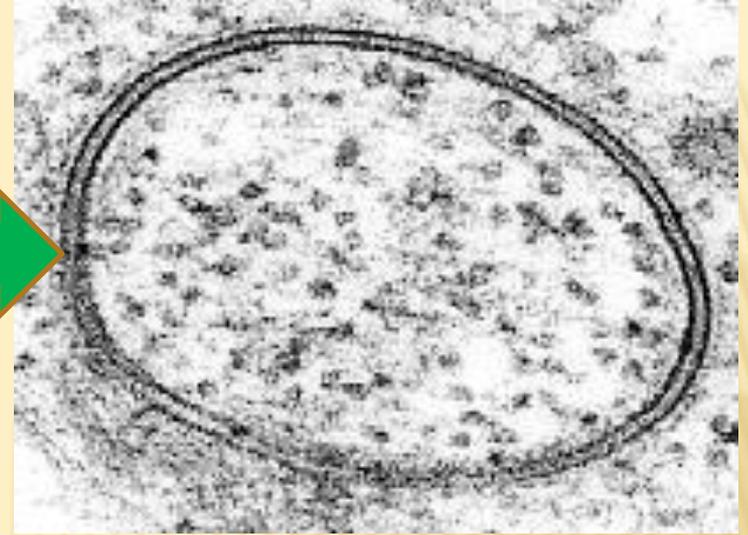
amylase protein



cell membrane



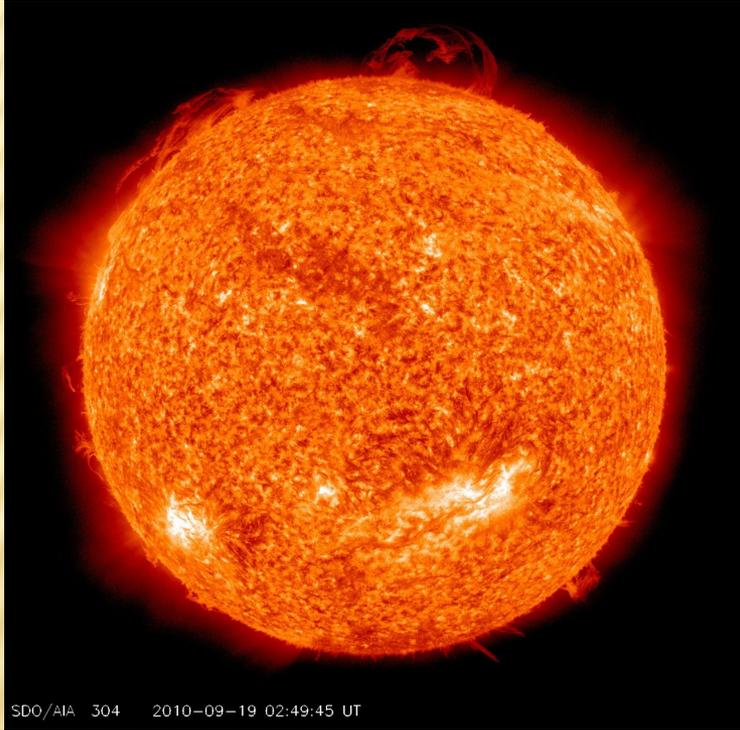
Cell Membrane



- Controls which substances enter and leave the cell (selectively permeable)
- Made of phospholipids and proteins



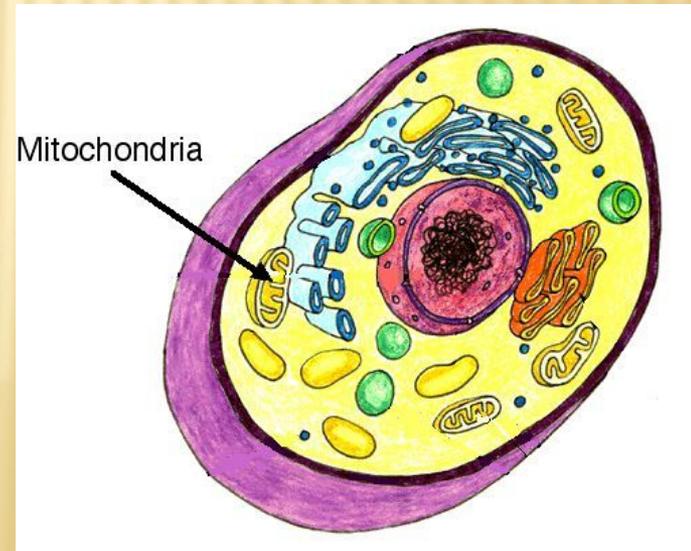
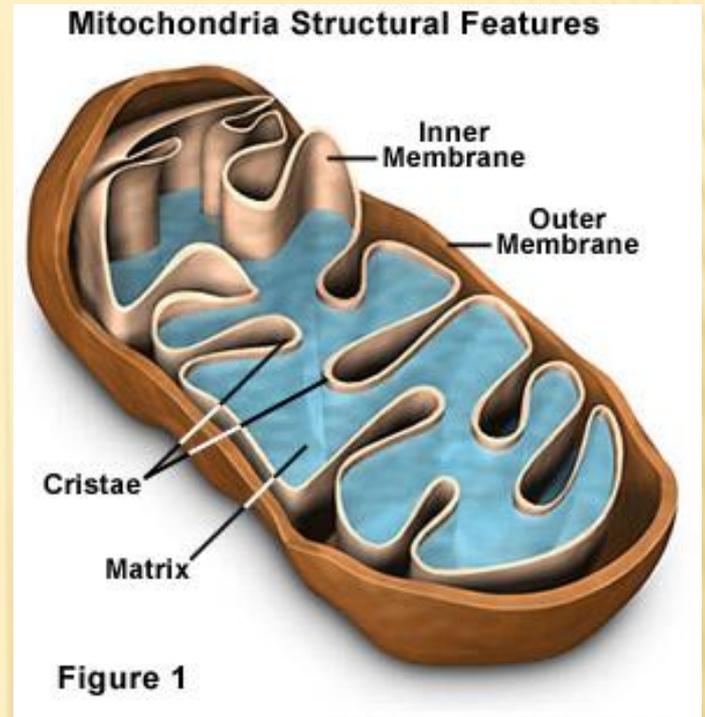
mitochondria



Mitochondria

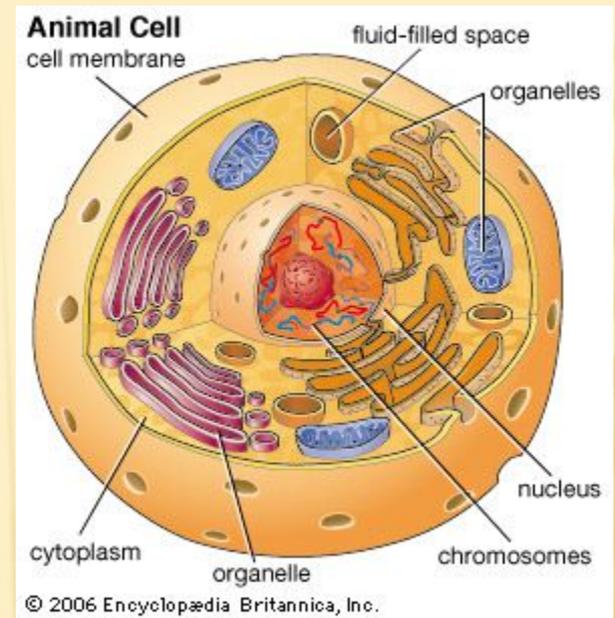
• converts food into energy
(cellular respiration)

• Provides power to the cell



September 11, 2018

Mastery Objective: The students will describe functions of organelles in cells by matching up pictures to organelles they represent.

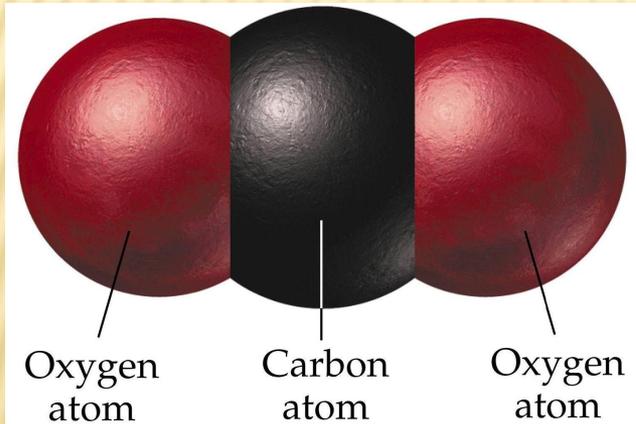
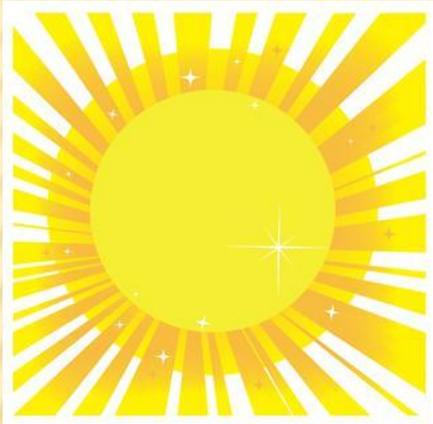


Drill Warm-Up:

Which organelle...

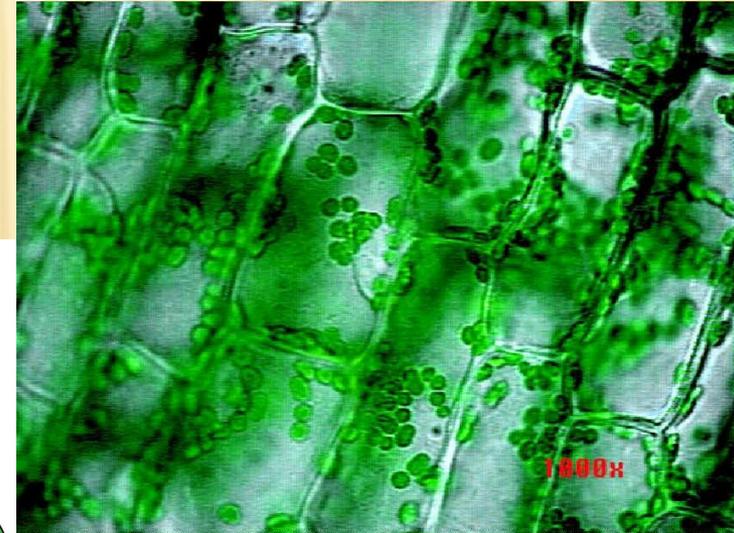
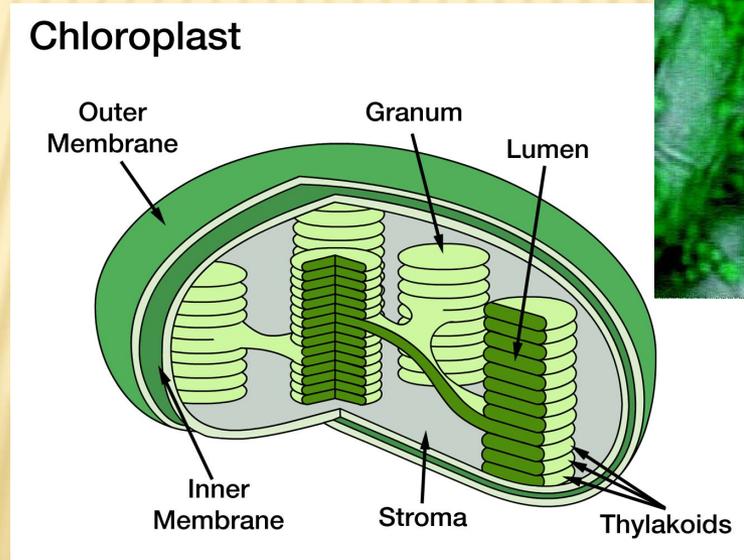
- 1. Provides strength and structure to the cell?**
- 2. Packages and shapes protein?**
- 3. Stores genetic information for the cell?**
- 4. Links together amino acids into proteins?**
- 5. Captures sunlight and converts it to glucose?**

chloroplasts



Chloroplasts

- site of photosynthesis—converts light into glucose (food)
- Contains chlorophyll pigment (green)

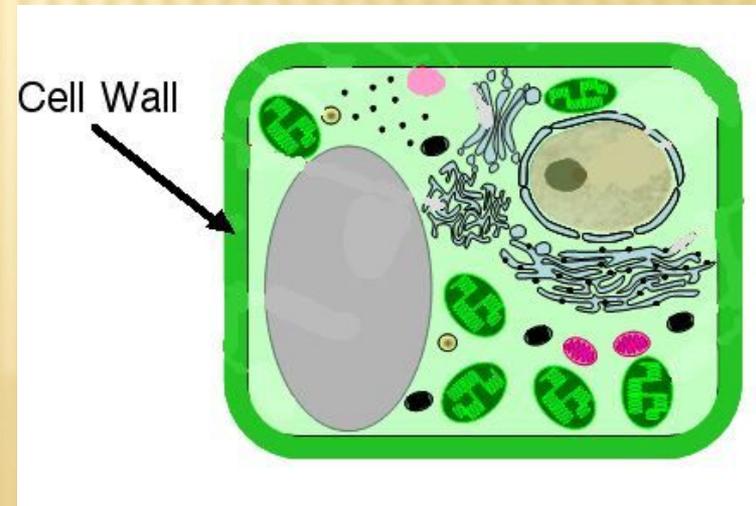
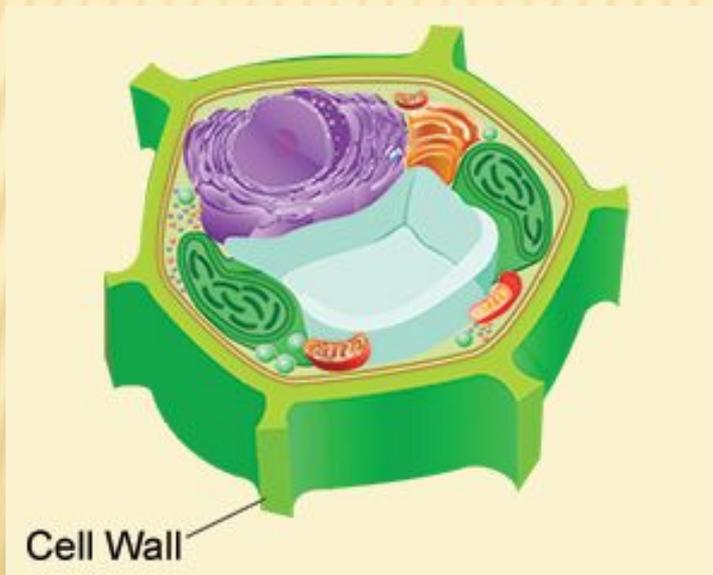


cell wall



Cell Wall

- ✓ Made of cellulose (fiber)
- ✓ provides support for plant cell
- ✓ Protects plant from damage

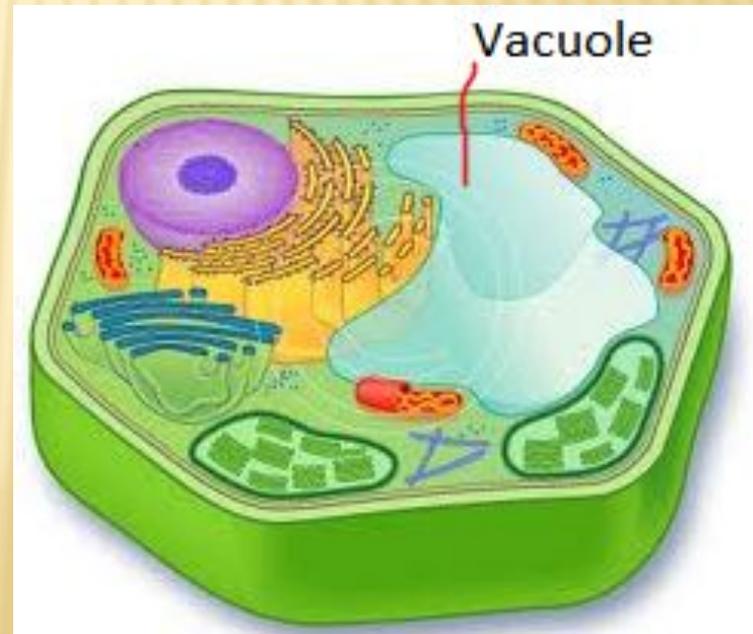


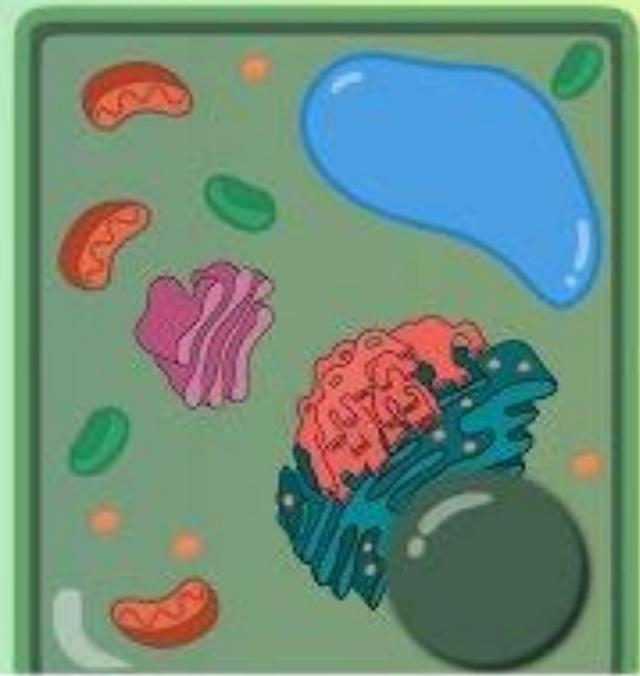
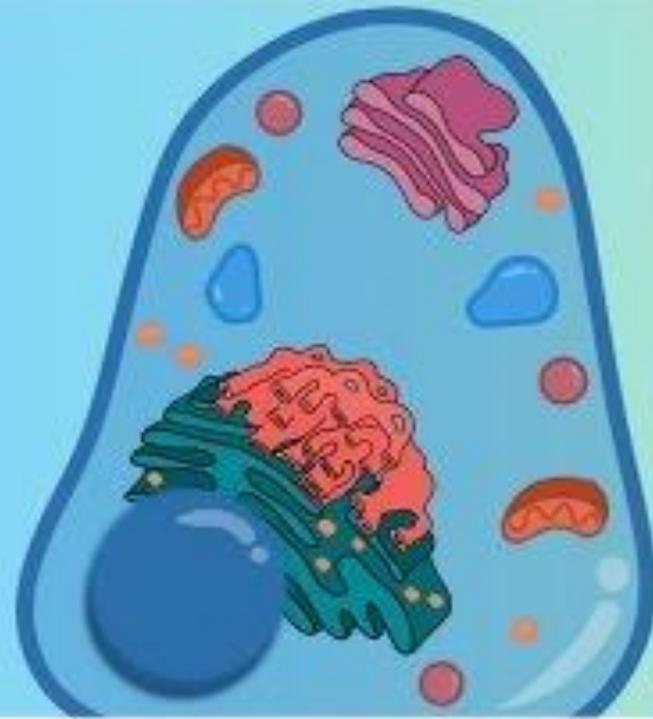
central vacuole



Central Vacuole

- ❖ a 'water sack'--provides pressure so plant can stand upright.
- ❖ Stores water and nutrients





Introduction to Cells

with the Amoeba Sisters

1.



2.



3.



4.



5.

