

# CELL organelles

# Remember:

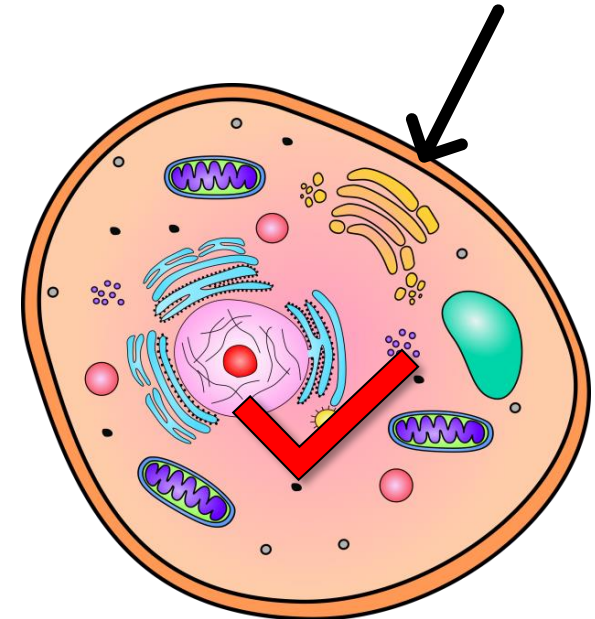
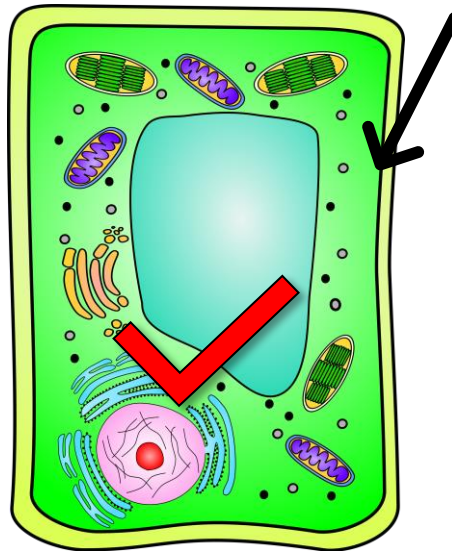
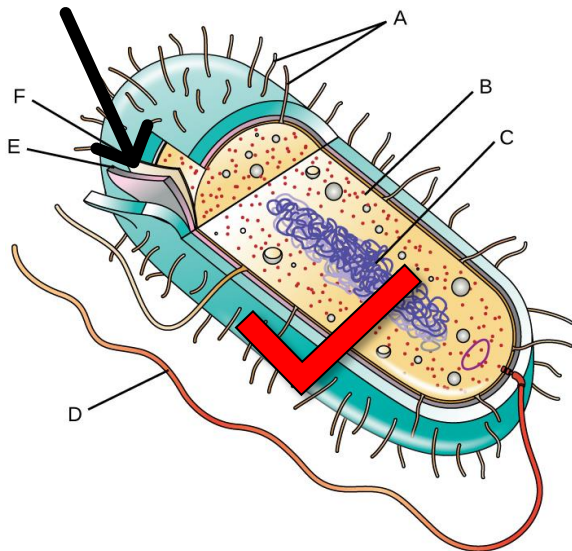
- ❑ All organisms are made of cells
  - Prokaryotic or Eukaryotic
- ❑ All cells contain organelles- structures within cells that perform special functions
- ❑ Today we will learn about the different organelles, what they do, and in what cells they are found in

# Our Focus:

- ❑ For each organelle, we will discuss its function (job) and the cells they are found in:
  - Prokaryotic (like bacteria)
  - Eukaryotic
    - Plants or Animals  
(Remember: fungi and protists are eukaryotes too, but we are not focusing on those)

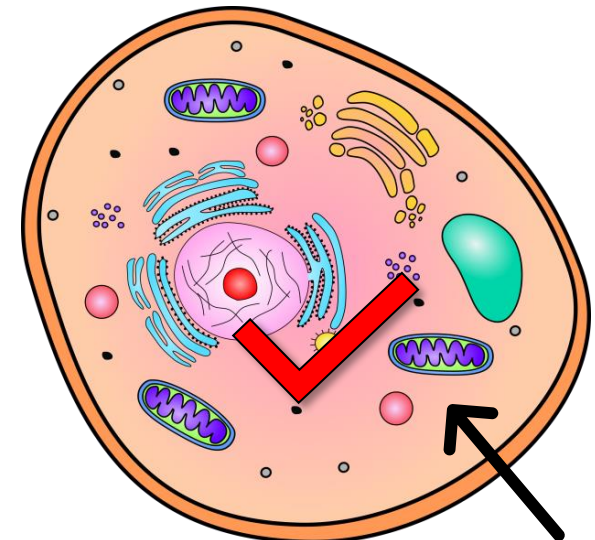
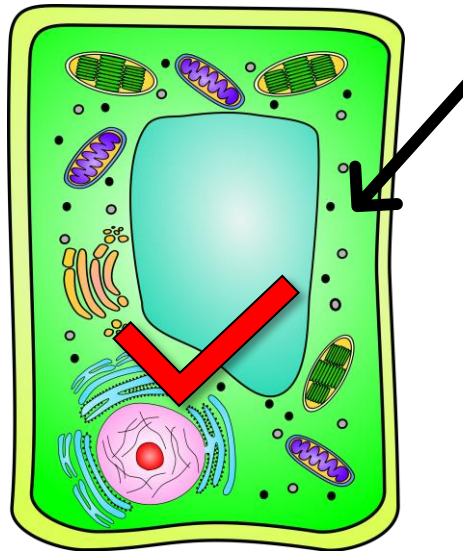
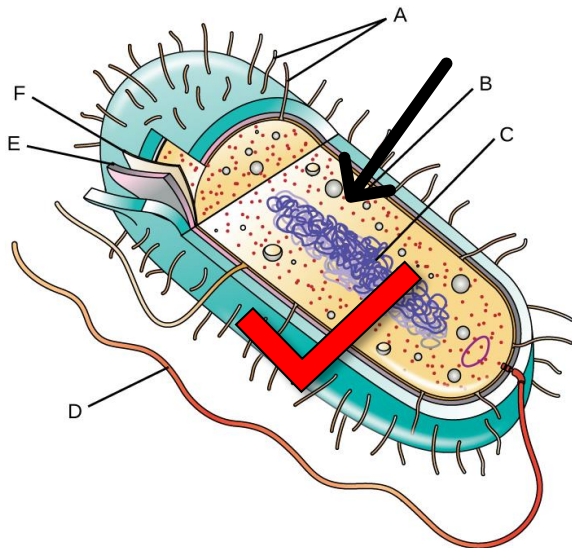
# Cell Membrane:

- AKA Plasma membrane
- **Found in:** All Cells
  - Prokaryotic- Yes
  - Eukaryotic- Yes (Both plant and animal)
- **Function:** Maintains homeostasis by controlling what enters and leaves the cell



# Cytoplasm:

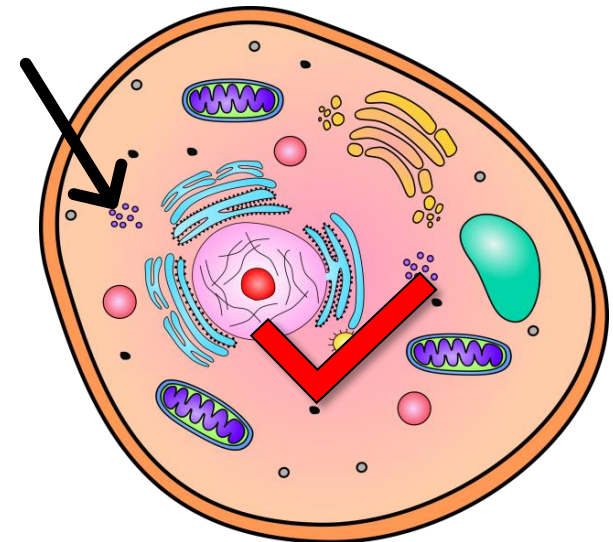
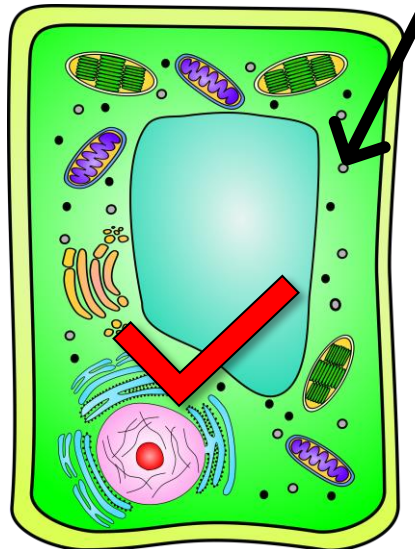
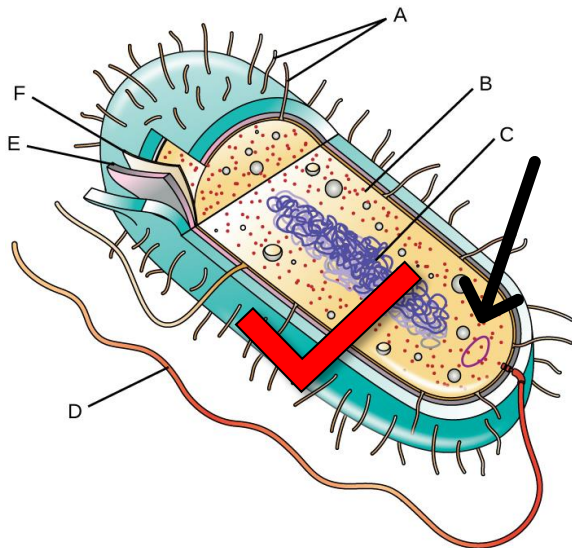
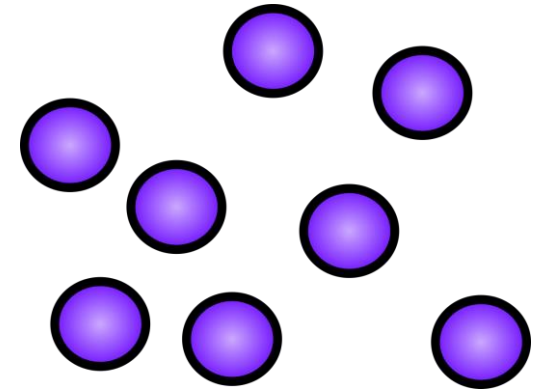
- Gel-like substance inside the cell
- **Found in:** All Cells
  - Prokaryotic- Yes
  - Eukaryotic- Yes (Both plant and animal)
- **Function:** It suspends the organelles and provides an environment for chemical reactions within the cell





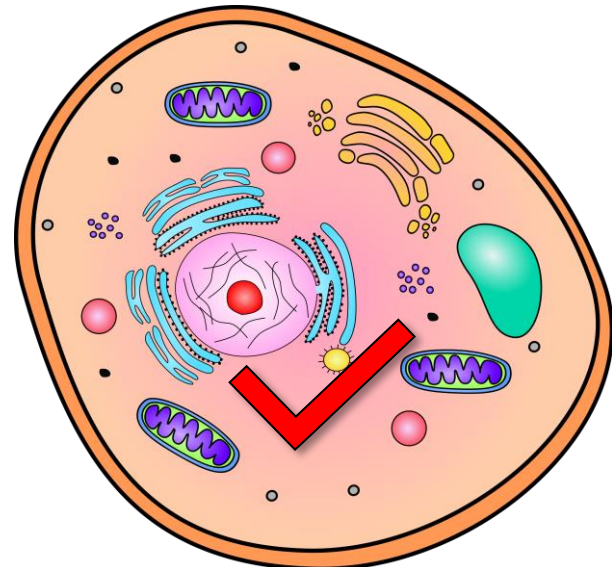
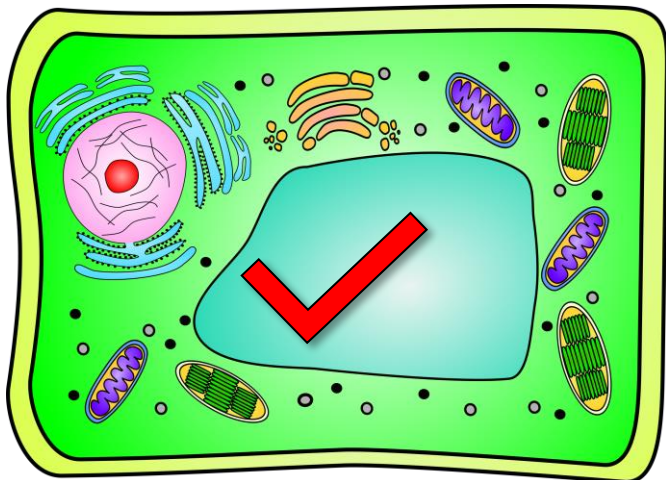
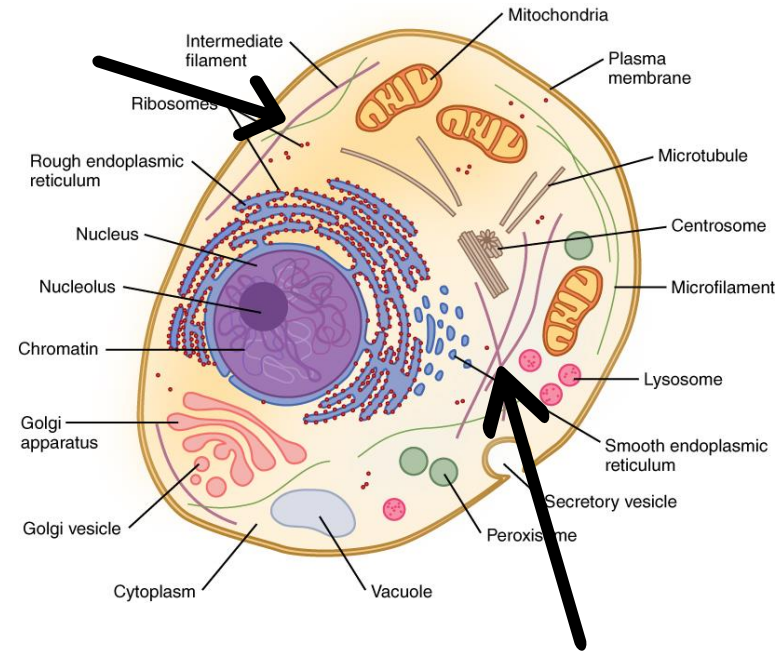
# Ribosomes:

- **Found in:** All Cells
  - Prokaryotic- Yes
  - Eukaryotic- Yes (both plants and animals)
    - Floating in cytoplasm and on ER
- **Function:** Makes proteins



# Cytoskeleton:

- A network of proteins found throughout the cell
- **Found in:** Eukaryotic Cells
  - Both plants and animals
- **Function:** Provides structure for cells and movement of organelles

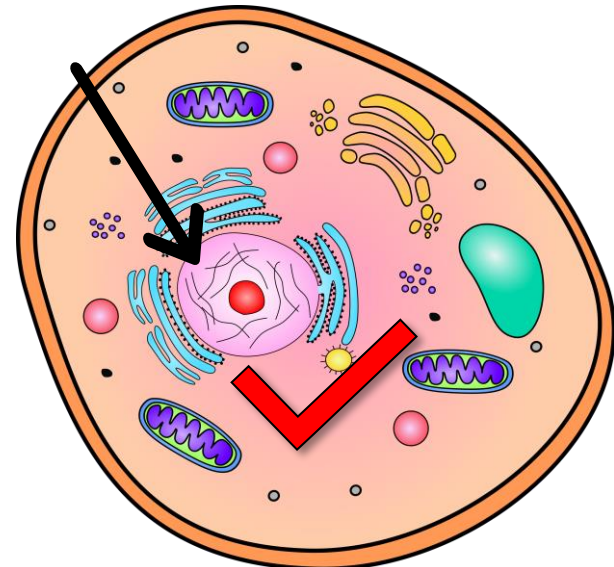
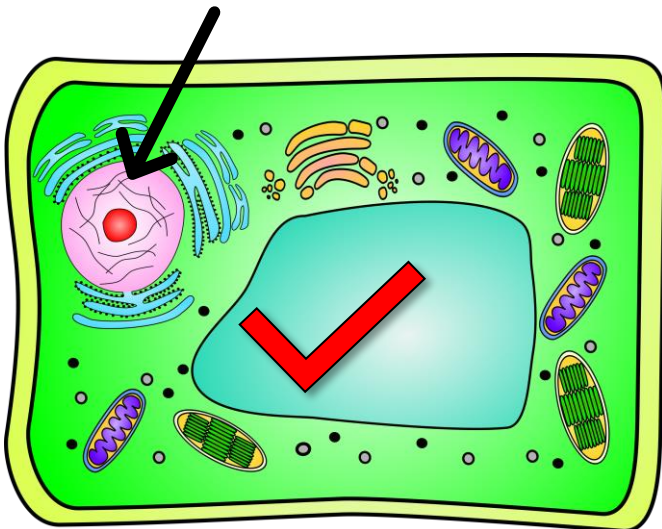
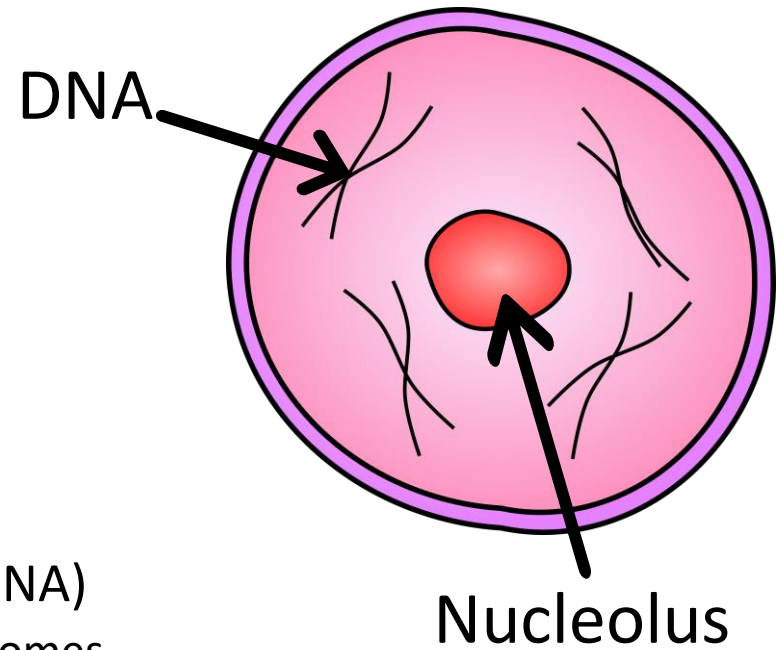


All of the rest of the organelles are considered to be “membrane bound” organelles (surrounded by a membrane). Therefore, they are *only found in eukaryotic cells*.



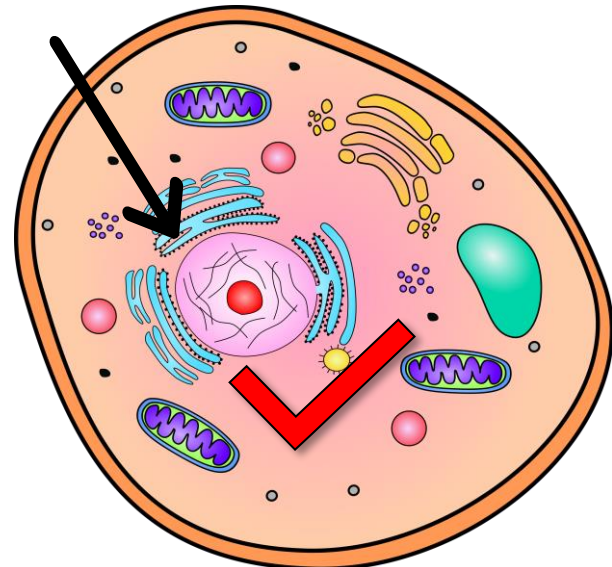
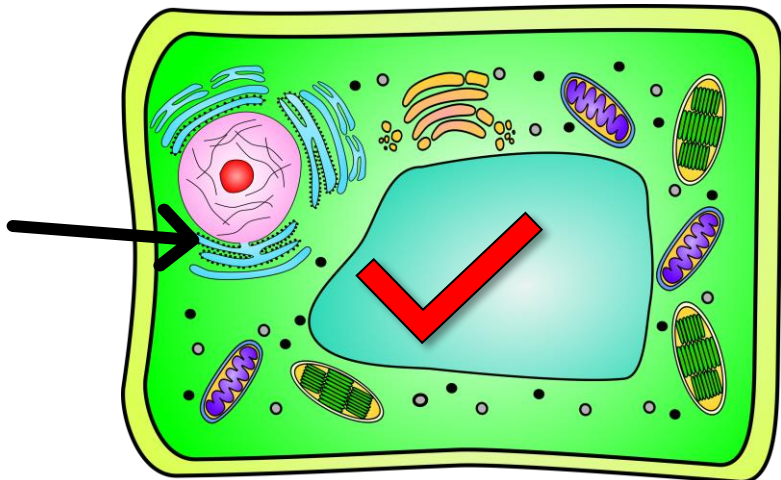
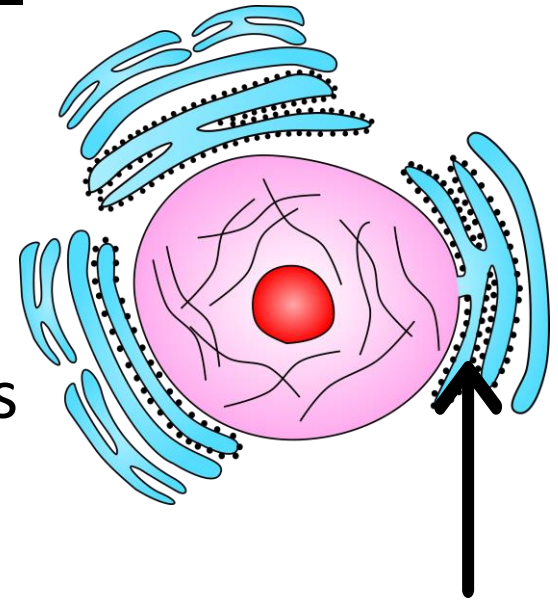
# Nucleus:

- Surrounded by a nuclear membrane
- **Found in:** Eukaryotic Cells
  - Both plants and animals
- **Function:** Stores genetic information (DNA)
  - Nucleolus is found within and makes ribosomes



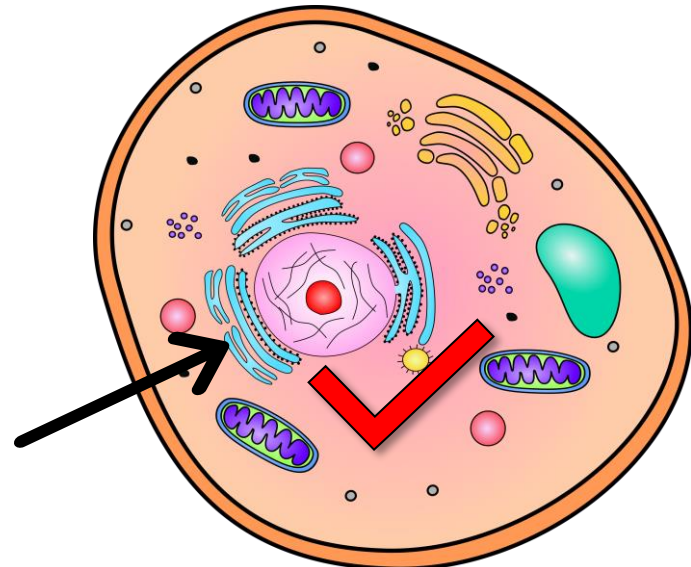
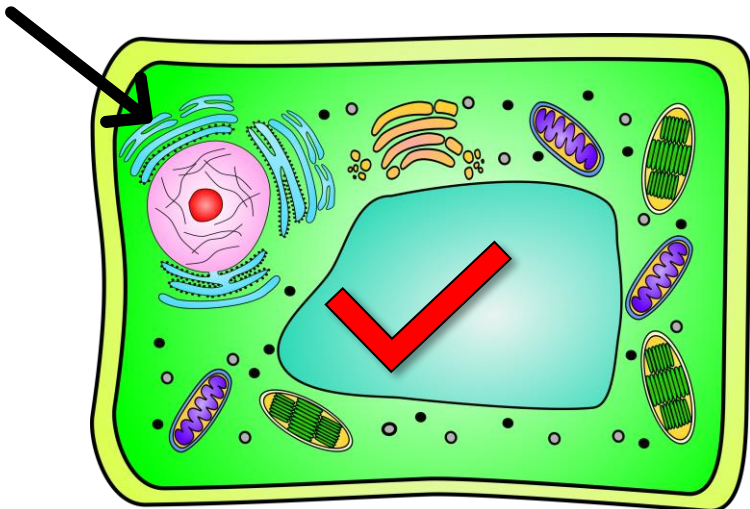
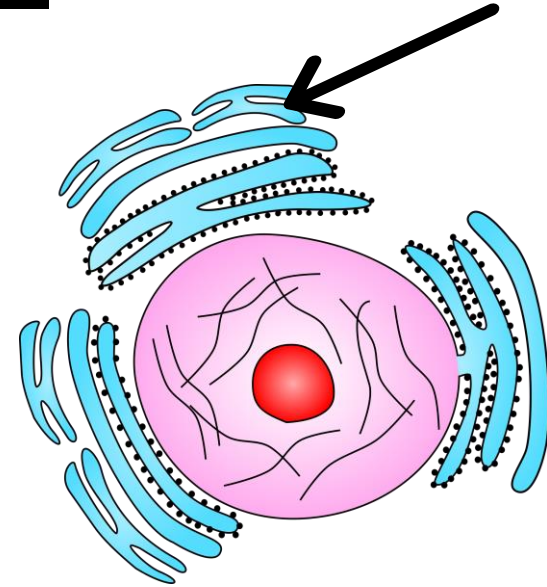
# Rough Endoplasmic Reticulum (ER):

- “Rough” because of ribosomes
- **Found in:** All eukaryotic cells
  - Both plants and animals
- **Function:** Makes and transports proteins



# Smooth Endoplasmic Reticulum (ER):

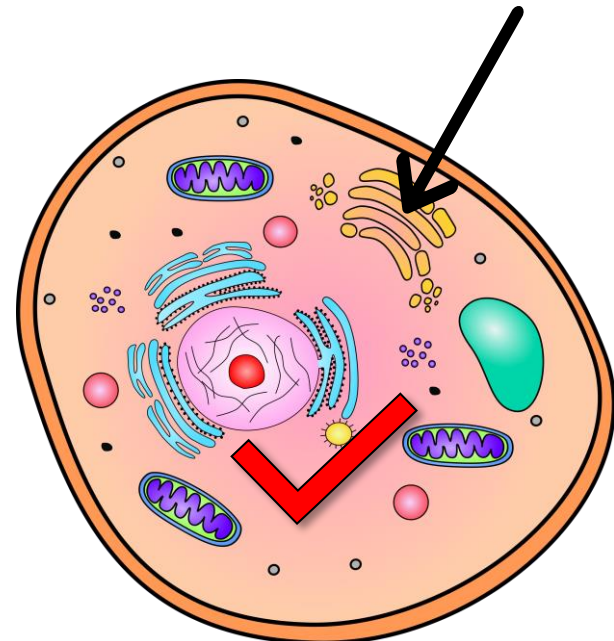
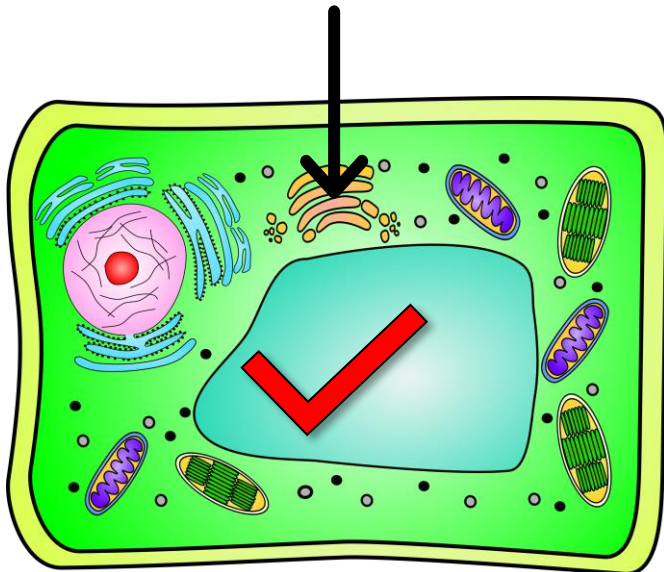
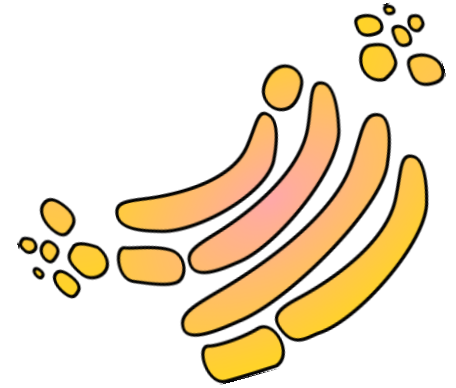
- **Found in:** All eukaryotic cells
  - Both plants and animals
- **Function:** Makes lipids and membranes
  - Also detoxifies (liver)
  - Stores calcium (muscle)





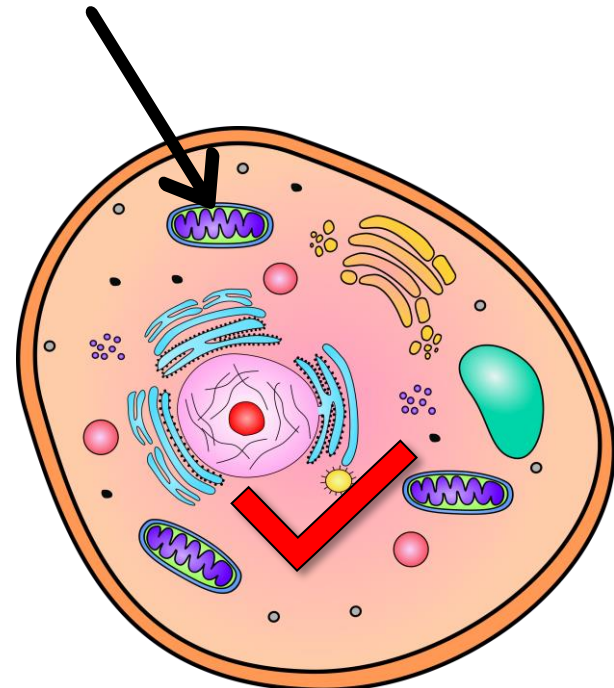
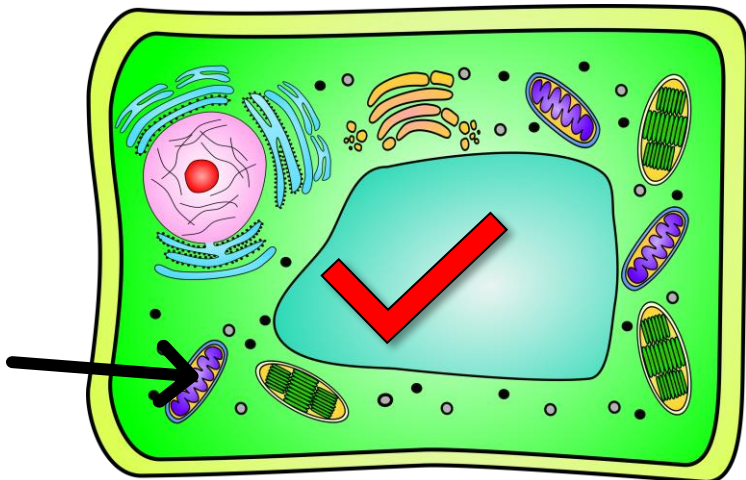
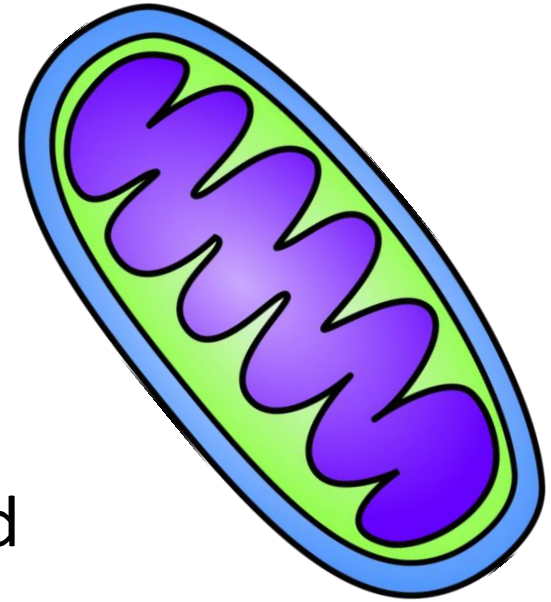
# Golgi Bodies (Golgi apparatus):

- **Found in:** All eukaryotic cells
  - Both plant and animal
- **Function:** Modifies, sorts, and ships proteins
  - Can send proteins to other places within the cell or out of the cell



# Mitochondria:

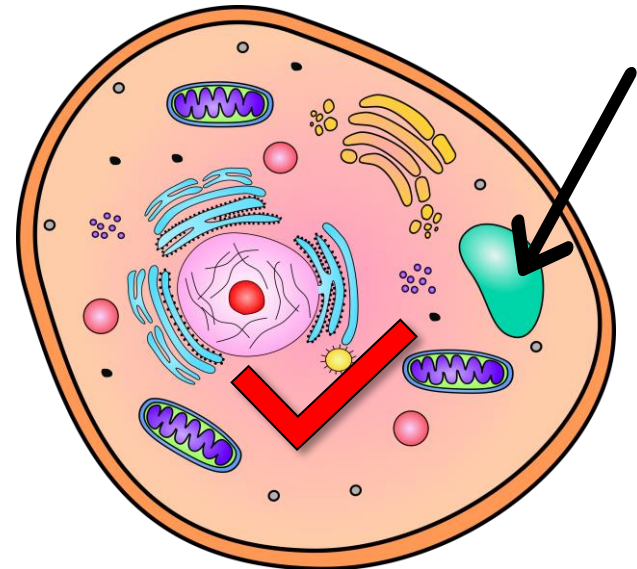
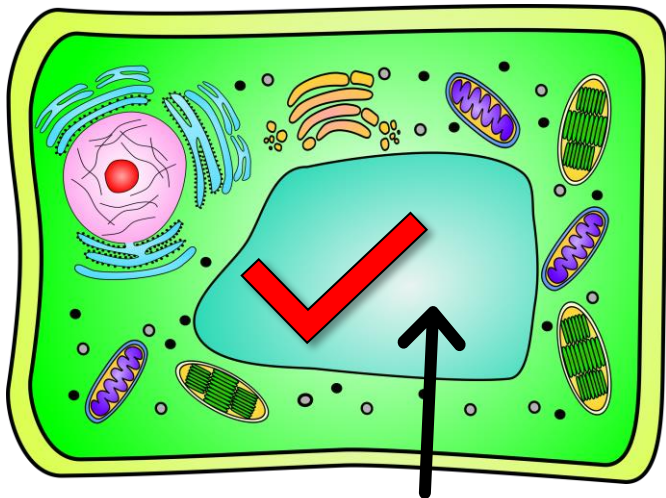
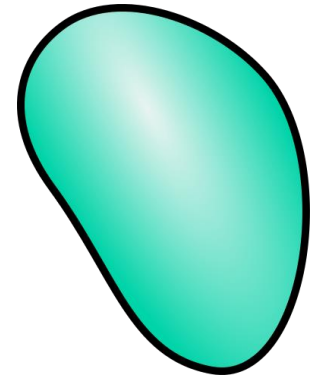
- Mitochondrion is singular
- **Found in:** All eukaryotic cells
  - Both plants and animals
- **Function:** Creates energy (ATP) from food
  - Site of cellular respiration





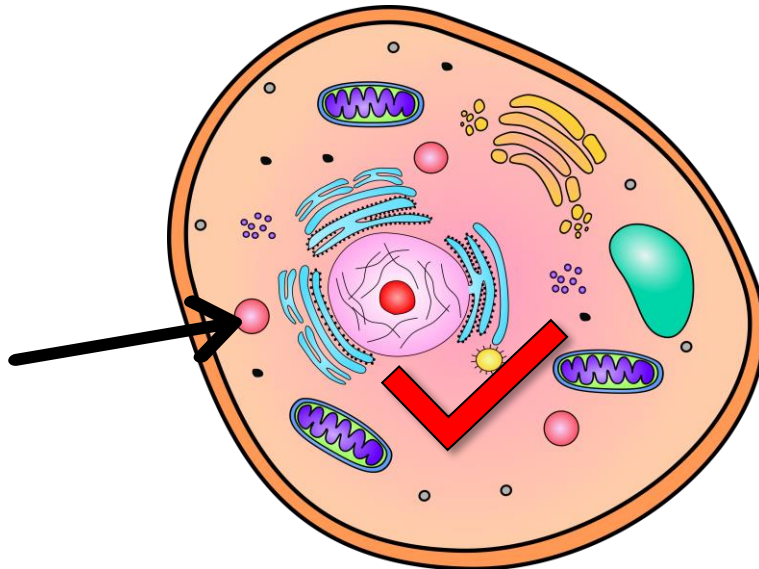
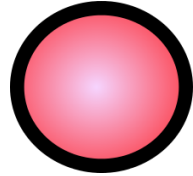
# Vacuole:

- **Found in:** All eukaryotic cells
  - Both plant and animal
- **Function:** Stores food, water, or wastes within the cell
  - \*plant cells have a special vacuole we will discuss



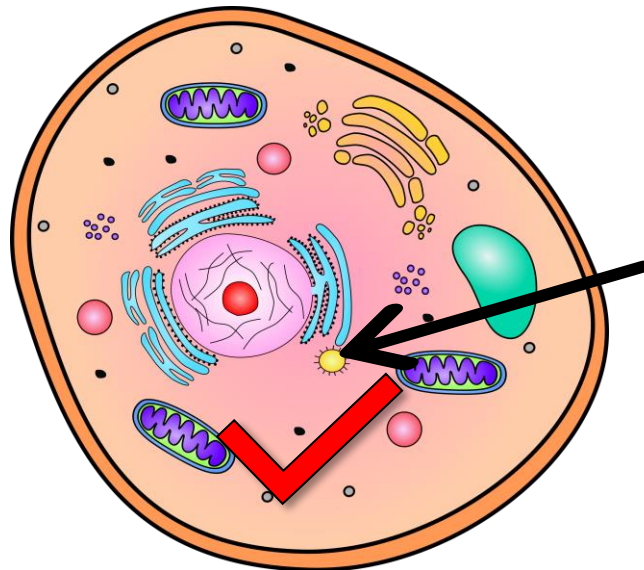
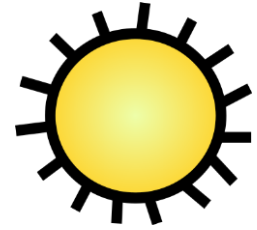
# Lysosomes:

- **Found in:** Animal Cells
  - (May be few in plants but we will discuss only animals)
- **Function:** Uses enzymes to digest bacteria, viruses, and old organelles
  - Old cell parts are recycled



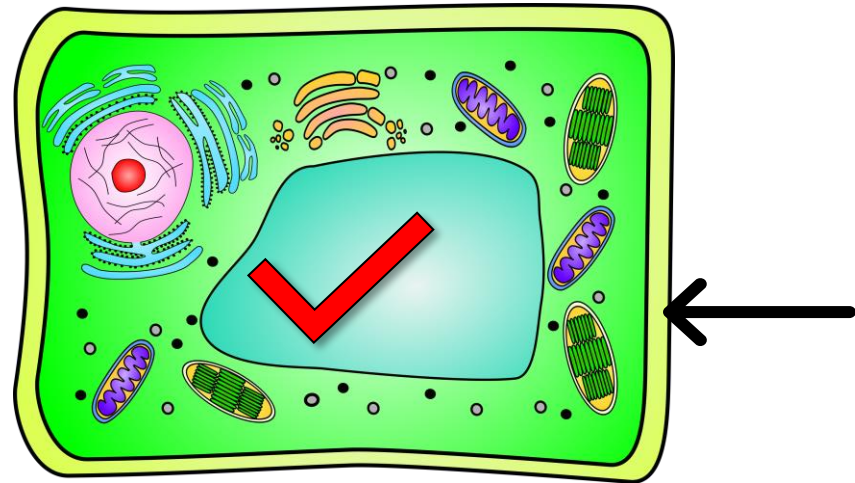
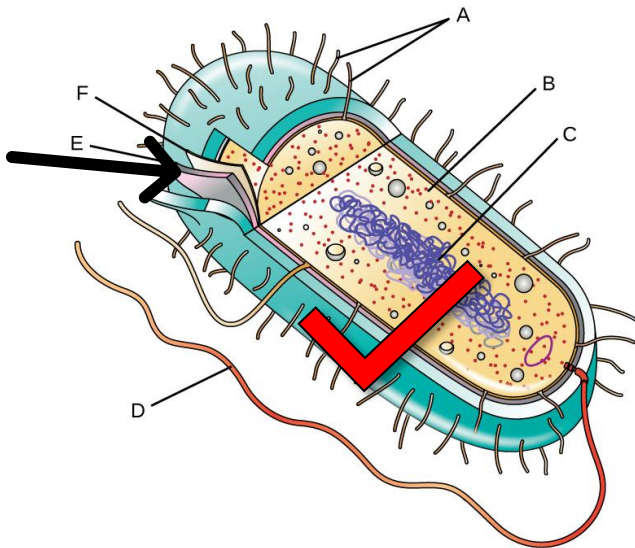
# Centrosome

- Contains centrioles
- **Found in:** Animal Cells only
- **Function:** Create special structures called spindle fibers that are used in cell division



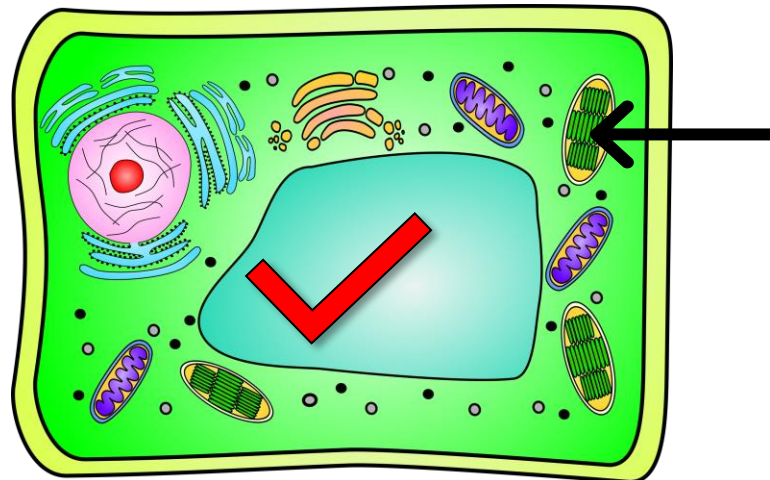
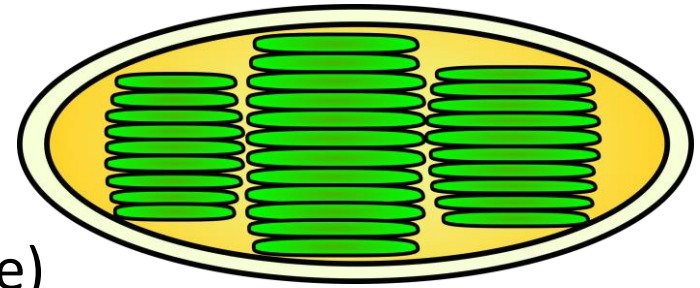
# Cell Wall

- Rigid structure outside of the cell membrane
- **Found in:** Plant cells and Prokaryotic cells
  - Also fungi and algae
- **Function:** Provides shape, structure, and protection for the cell



# Chloroplast

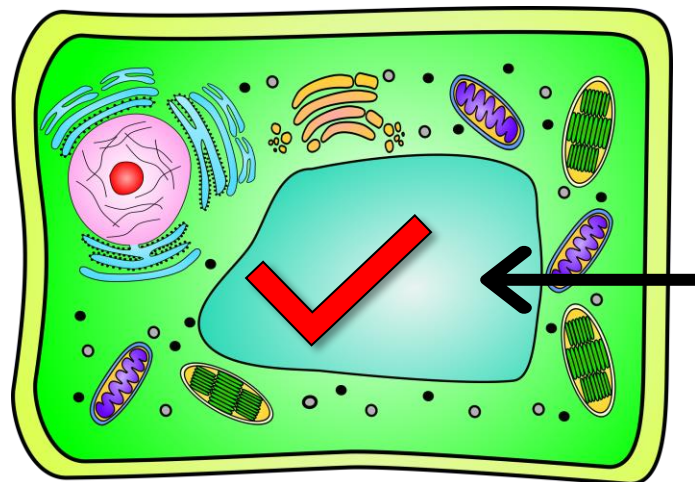
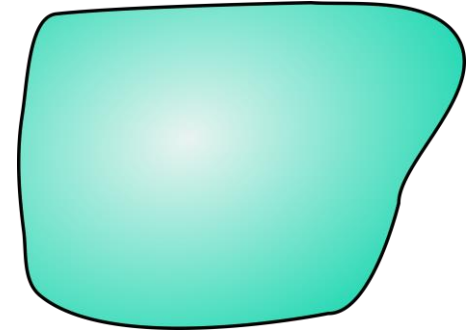
- **Found in:** Plant Cells
  - Other photosynthetic eukaryotes (algae)
- **Function:** Site of photosynthesis
  - Uses the sun's energy to produce food





# Central Vacuole

- **Found in:** Plant Cells
- **Function:** Stores water in order to maintain plant shape
  - Think: If a plant needs water, it wilts.



# Let's Review:



## Introduction to Cells

with the Amoeba Sisters

# Practice!

Get familiar with the cell organelles by coloring the cells according to the table.

**Coloring the Cell:**  
Animal & Plant

Use the key to correctly color the animal and plant cells below. Label which one is an animal cell and which is a plant cell.

Organelle	Color
Cell Membrane	Dark Blue
Cytoplasm	White
Nucleus	Light Purple
Mitochondria	Pink
Vacuole	Gray
Golgi Bodies	Orange
Chloroplast	Light Green
Lysosome	Light
Ribosome	Dark Purple
Rough ER	Red
Smooth ER	Yellow
Cell Wall	Dark Green

