

1. What are the three parts of the cell theory? **(NB 21, TB 62)**
  
2. Be able to describe the differences between different cell types. Fill in the table below with information about the different cell types **(NB 18, 19, 22, TB. 63-64, 66):**

Cell type	Characteristics
Prokaryotic	
Eukaryotic	

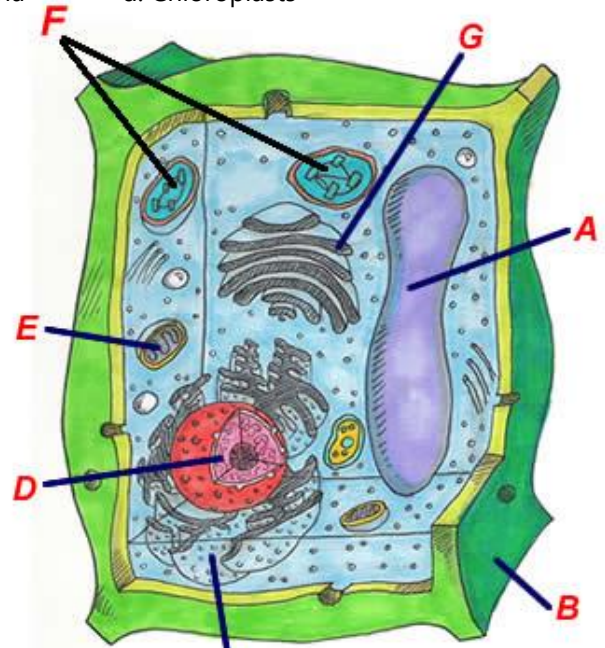
Draw a Venn Diagram to show some similarities and differences in Plant and Animal Cells. (at least 3 in each)

3. Describe the function of the following cell organelles **(NB 22, TB 64, 66)**
  - a. Cell Membrane
  - b. Ribosomes
  - c. Mitochondria
  - d. Endoplasmic Reticulum
  - e. Golgi apparatus
  - f. Lysosomes
  - g. Vacuole
  - h. Nucleus
  
4. The cell membrane is able to transport materials into or out of the cell **(NB 23-26, TB 72-75)** Explain the following terms or processes:
  - a. HOMEOSTASIS
  - b. Osmosis
  - c. Diffusion
  - d. Passive transport
  - e. Facilitated diffusion
  - f. Active transport
  - g. Hypo-, hyper- and isotonic solutions
  
5. Explain the differences in photosynthesis and cellular respiration. **(NB 27-29, TB 52-57)**

**Practice Problems:**

- Which of the following is NOT part of the cell theory?
  - All living things are composed of cells
  - All organisms are composed of cells
  - Cells are the most basic unit of life
  - Cells cannot come from pre-existing cells
- One important difference between prokaryotic and eukaryotic cells is that prokaryotic cells DO NOT have:
  - Ribosomes
  - DNA/RNA
  - Cell membranes
  - Nucleus
- Which of the following is found in plant cells but not in animal cells?
  - Vacuoles
  - Nucleus
  - Mitochondria
  - Chloroplasts

Use the diagram to the right to answer questions 4-7:



- What kind of cell is this? What about the structure of this cell helps you to know that?
- What structure labeled has the job of producing all the cell's energy (ATP)?
- The structure labeled "A" has the function of:
  - Converting sunlight to sugars (photosynthesis)
  - Holding the cell's DNA/RNA
  - Storage
  - Packages cell materials and ships them to other areas
- This structure controls what happens in the cell:
  - Structure "B"
  - Structure "D"
  - Structure "F"
  - Structure "A"
- Circle the words that correctly complete the sentence:** In animals, oxygen (enters/leaves) cells while carbon dioxide (enters/leaves) the cells. Cells utilize (active transport/simple diffusion/osmosis) to move both gasses into and out of the cells.
- \_\_\_\_\_ transport is the process where molecules move from a **low** concentration to a **high** concentration and requires energy from the cell to take place. \_\_\_\_\_ transport does not require energy because the molecules move from **high** concentration to **low** concentration.
- Draw the following scenarios and indicate with arrows which direction water will move:
  - A cell placed in a high sugar solution
  - A cell placed in a solution of pure water
  - A cell placed in an isotonic solution
- Write the chemical formulas for both photosynthesis and respiration and explain how they are related.
- In which cell organelles do photosynthesis and cellular respiration take place?