Vocabulary: Cell Types

Vocabulary

- ATP – adenosine triphosphate, a molecule that provides energy for cellular processes.
  - Energy is released when an ATP molecule is converted to an ADP (adenosine diphosphate) molecule.
- Bacteria – unicellular organisms that contain cell walls and ribosomes but do not contain a nuclear membrane around their genetic material or other organelles common to plant and animal cells.
- Carbon dioxide – a colorless, odorless gas that is produced during respiration and combustion (burning).
  - Carbon dioxide is used by plants during photosynthesis.
  - The chemical formula of carbon dioxide is CO_2.
- Cell – the smallest structural and functional unit of all organisms that is said to be alive.
- Cellular respiration – a process by which energy is released from food.
  - When oxygen is present, oxygen and glucose combine to produce energy in the form of ATP molecules. The by-products of cellular respiration in the presence of oxygen are carbon dioxide and water.
  - When oxygen is not present, a smaller amount of energy is produced from the breakdown of glucose. Possible by-products include lactic acid and alcohol.
- Compound light microscope – an instrument used to magnify small objects. Two or more lenses (an eye piece and one of several objective lenses) collect light and bend it to create the larger image.
- Eukaryote – an organism in which the genetic material inside of cells is contained within a distinct nucleus.
- Multicellular – consisting of many cells.
  - Animals, plants, most fungi, and some protists are multicellular.
- Muscle cell – a long, contractile cell that forms the muscles of the body.
  - Muscle cells contract (shorten) and relax (lengthen) to produce movement.
- Neuron – a cell that is able to transmit nerve impulses (signals) from one part of the body to another.

- Organelle – a cell structure that performs a specific function.
    - Some examples of organelles are nuclei, cell membranes and chloroplasts.
        - A nucleus is an organelle that contains DNA and controls the cell by regulating when genes are turned on and off.
        - The cell membrane surrounds and protects the cell by regulating what can go in and out.
        - Chloroplasts are organelles that perform photosynthesis.
- Photosynthesis – the process by which light energy is used to combine water and carbon dioxide to produce glucose and oxygen.
- Prokaryote – single celled organisms that do not contain distinct nuclear membranes around their genetic material.
    - Bacteria are prokaryotes.
- Protist – eukaryotic organisms that are neither fungi, plants nor animals.
    - Most protists are unicellular.
    - Examples of protists are amoeba, *Paramecium* and *Euglena*.
- Red blood cell – a cell that uses hemoglobin to carry oxygen to the cells and tissues of the body. Red blood cells also carry carbon dioxide back to the respiratory organs.
- Root hair cell – a cell found in the roots of plants that absorbs water and nutrients from the soil.
- Tissue - a group of similar cells that work together to carry out a specific function.
    - Together, several groups of tissues can form an organ.
- Unicellular – consisting of a single cell.
    - Unicellular organisms include bacteria, microalgae, and most protists.
- White blood cell – Cells in the blood that protect against invading pathogens.
    - White blood cells are part of the immune system.