Unit Vocabulary Terms

- Carbohydrate - A group that includes sugar and starch that is used for energy or structure; can be small molecules (monosaccharides or disaccharides) or large molecules (polysaccharides such as starch and cellulose.)
- Proteins - A three-dimensional biological macromolecule constructed from a set of 20 different monomers called amino acids.
- Insulin - Protein compound produced by pancreas and functions as a hormone that allows for the utilization of glucose by cells.
- Hemoglobin - An iron-containing protein in red blood cells that binds to oxygen and carries it throughout the bloodstream.
- Lipids - Family of compounds, including fats, phospholipids, and steroids, that are insoluble in water.
- Phospholipids - Molecules that make up the inner bilayer of cell membranes. They have a polar, hydrophilic head and a nonpolar, hydrophobic tail.
- Steroids - lipid-based hormones containing a four carbon-ring structure. An example would be cholesterol.
- Nucleic acids - Molecules consisting of many nucleotide monomers linked together; contain the genetic information for all life. The two types are DNA and RNA.
- Nucleotide - The building block of a nucleic acid, consisting of a five-carbon sugar bonded to a nitrogenous base and a phosphate group; monomers of nucleic acids.
- DNA (Deoxyribonucleic Acid) - Double-stranded polymer of nucleotides containing the genetic material of all organisms; contains the sugar deoxyribose and four complementary bases (A, T, C, and G).
- RNA (Ribonucleic Acid) - Single-stranded polymer of a nucleotides; critical to production of proteins in all organisms;contains the sugar ribose and four complementary bases (A, U, C and G).
- Enzyme - A class of proteins serving as catalysts that change the rate of a reaction without being consumed by the reaction.
- Amino Acid - An organic molecule that serves as the monomers of proteins. (there are 20 different types)
- Monomer - The subunit that serves as the building block of a polymer.
- Polymer - Large molecule that consists of many monomers linked together.
- Monosaccharide - Monomer of a carbohydrate; The simplest carbohydrate. Also known as simple sugars; the molecular formulas of monosaccharides are generally some multiple of CH_2O. (glucose, fructose, galactose)
- Polysaccharide -A polymer of up to over a thousand monosaccharides. (polymer of a carbohydrate. Examples: starch, cellulose, glycogen, and chitin)
- Starch - A storage polysaccharide in plants consisting entirely of glucose molecules bonded together; polymer of carbohydrate found in plants used to store energy.
- Glucose - A six-carbon sugar ($C_6H_{12}O_6$); the most common monosaccharide in organisms.
- Glycogen - A glucose storage polysaccharide found in the liver and muscle of animals; the animal equivalent of starch.

- Cellulose - A structural polysaccharide of cell walls, consisting of glucose monomers.
- Fatty Acids - A long chain of hydrocarbons. Fatty acids vary in length and in the number and location of double bonds. One of the monomers of a lipid.
- Saturated Fats -A fatty acid in which all carbons are connected by single bonds, thus maximizing the number of hydrogen atoms that can attach to the carbon skeleton.
- Unsaturated Fats - A fatty acid possessing one or more double bonds between the carbons. Such bonding reduces the number of hydrogen atoms attached to the carbon skeleton.
- Catalyst - A substance that lowers the activation energy of a chemical reaction, as a result, the rate of the reaction is accelerated. Enzymes are biological catalysts. Heat and some elements can be non-biological catalysts.
- Product - Ending materials in a chemical reaction.
- Reactant -A starting material in a chemical reaction.
- Specificity - The selective attachment or influence of one substance on another; relates to enzymes being specific for a particular substrate.
- Denaturation - A change in the shape and structure of a protein making it nonfunctional; things that can denature proteins include high temperature, change in pH, high salt concentration.
- Activation Energy - The energy necessary to start a reaction.
- Substrate - The substance on which an enzyme works.
- Active Site - The specific region on an enzyme that to which a substrate attaches.
- Soluble - Able to easily dissolve or go into solution.
- Insoluble - Difficult to dissolve or go into solution.
- Double helix - Shape of a DNA molecule resembling a spiral staircase or twisted ladder.
- Nitrogen Base - An organic compound that contains the element nitrogen; found in DNA and RNA; examples are A, T, C, G, and U.
- Hydrogen Bonds - A weak bond formed between hydrogen and another element such as nitrogen or oxygen.
- Metabolism - The sum of the physical and chemical processes in an organism.
- Organic Compound - Any compound that contains carbon.