

WINK SHEET— Biochemistry and Enzymes

Theme:

The essential functions of a cell involve chemical reactions that take place between many different types of molecules (including carbohydrates, lipids, proteins and nucleic acids) and are catalyzed by enzymes.

Expectations:

- * Construct explanations of how the structures of carbohydrates, lipids, proteins, and nucleic acids (including DNA and RNA) are related to their functions in organisms.
- * Plan and conduct investigations to determine how various environmental factors (including temperature and pH) affect enzyme activity and the rate of biochemical reactions.

Objectives: On a scale of 0-5, with 0 being “I know absolutely nothing” and 5 being “I am exceptionally confident in my ability,” please rank your understanding of each objective at the end of the unit.

- _____ Characteristics of the Carbon atom make it essential to the structure of organic compounds
- _____ Identify Monomers and Polymers of Organic molecules
- _____ Identify Organic Molecules based on their structure
- _____ Classify organic molecules based on their caloric value
- _____ Identify the function of the four major groups of macromolecules
- _____ The role of activation energy in the processes of chemical reactions
- _____ The role of enzymes as biological catalysts
- _____ Factors that will affect the rate of enzyme reactions
- _____ The relationship between enzyme structure and function

Textbook: We will be covering pages 32-58 in your textbook. Please mark which statements apply to your use of the textbook on this unit.

- _____ I read the entire reading for this chapter
- _____ I read part of the reading for this chapter
- _____ I used the textbook to assist in my understanding of vocabulary from this unit
- _____ I used the textbook to assist in my understanding of the objectives
- _____ We have a text book?
- _____ Other _____

Vocabulary:

- | | | |
|---------------------|--------------------------|---------------------|
| • Matter | • Lipid | • Caloric Value |
| • Element | • Nucleic Acid | • Enzyme |
| • Atomic number | • DNA | • Catalyst |
| • Covalent Bond | • RNA | • pH |
| • Ionic Bond | • Carbohydrates | • activation energy |
| • Nucleus | • Monosaccharide | • active site |
| • Electrons | • Glycerol | • buffer |
| • Organic Molecules | • Fatty Acid | • substrate |
| • Monomer | • Saturated Fatty Acid | |
| • Polymer | • Unsaturated Fatty Acid | |
| • Proteins | | |
| • Amino acid | • Amino Acid | |

Activities:

- Macromolecules Foldable and Concept Map
- Caloric value Lab
- Macromolecules Lab
- Enzymes as catalysts Lab
- Adjusting the rate of enzyme function lab
- Playdough enzymes