WLHS/Biology/Oppelt

Name _____

Biomolecule Review Worksheet

ORGANIC MOLECULES

Organic molecules are the molecules which exist in all living things. They are life's building blocks. All things are formed from these organic molecules. There are four categories of organic molecules: Carbohydrates, lipids, proteins and nucleic acids.

1. How are organic molecules related to all living things? _____

2. Name four categories of organic molecules which form the basis of all living things.
   a. _____ c. _____
   b. _____ d. _____

Organic molecules have four common characteristics. First, they are all carbon based, meaning they all contain carbon. They are formed from just a few elements which join together to form small molecules which join together, or bond, to form large molecules. The third characteristic of all organic molecules is that each is kind of organic molecule is built from a single type of building block. For example, the building block of carbohydrates is sugar, the building block of lipids is fatty acids, the building block of protein is amino acids and the building block of nucleic acids is the nucleotide. When these building blocks are joined together, they form a large molecule (polymer), just as bricks joined together form a wall. For example, sugars join together form a carbohydrate.

3. All of the organic molecules are based on which element? _____

4. Many times, the molecules join to form long chains with what kind of backbone? _____

5, How are the building blocks of organic molecules like bricks? _____

_____

6. What is the building block of each of the four classes of organic molecules? _____

7. What is a polymer? _____

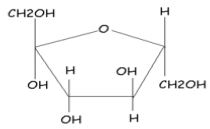
The last common characteristic of all organic molecules is that their form determines their function. That means that their shape determines how they will behave and how they will react with other molecules. For example, the order of amino acids in a protein will determine the shape and function of the protein just as the order of words in a sentence shapes the meaning of the sentence.

8. What determines how organic molecules will look and behave?

9. What are the four common characteristics of all organic molecules?

CARBOHYDRATES

Carbohydrates are the most common organic molecule because they make up most plant matter. They are made from carbon, hydrogen and oxygen. Their building block a single sugar called a monosaccharide. Sugars (monosaccharides) consist of carbon rings. When two monosaccharides, or sugars, combine, they form a disaccharide (di = two). When more than two monosaccharides join together, a polysaccharide (poly = many) is formed.



Fructose

10. What are the elements contained in carbohydrates?_____