

TOPIC 1: Biochemistry and the Molecules of Life

Please use the podcast from Council Rock High School for TOPIC 1 to guide you. The podcast can be found at <http://www.crsd.org/Page/31715>

1. What does it mean for a compound to be organic?
2. Water is (circle one) **polar** / **nonpolar** because the electrons are not evenly shared.
3. What two properties of water are mentioned?
 - a.
 - b.
4. What is the difference between a monomer and polymer?
5. Dehydration synthesis _____ water to _____ a bond, while hydrolysis _____ water to _____ a bond.
6. Carbohydrates have a ___: ___: ___ ratio of the elements C:H:O. Carbohydrates are the main _____ source for a cell.
7. What are the two monomers of lipids?
 - a.
 - b.
8. Lipids make up the majority of the cell _____.
9. Nucleic acids have the following elements: _____. Nucleic acids store our _____.
10. Amino acids (the monomers of a protein are made up of what three parts?)
 - a.
 - b.
 - c.
11. How do enzymes act as biological catalysts?

Macromolecule	Elements	Monomer and polymer	Roles
Carbohydrates	CHO	Monosaccharide/ polysaccharide	Quick/main source of energy
Lipids	CH and a little O	Glycerol and fatty acid/lipid	Long-term source of energy; cell membrane
Nucleic acids	CHOPN	Nucleotide / nucleic acid	Genetic material
Proteins	CHOSN	Amino acid / polypeptide or protein	Structure and enzymes