

**Explain why we are carbon-based organisms**

**Explain and diagram a dehydration synthesis (condensation) reaction. Give an example of a macromolecule made by this reaction.**

**Explain and diagram a hydrolysis reaction. Give an example of a macromolecule made by this reaction.**

**Describe the structure of a monosaccharide**

**Describe the structure of a disaccharide**

**Describe the structure of a polysaccharide**

**Identify a monosaccharide, disaccharide and 3 polysaccharides. Identify the function of each.**

**What characteristic is universal of all lipids?**

**List 7 functions of proteins**

**Describe the 4 levels of protein structure**

**Identify 3 factors that can affect the shape of a protein**

**Identify the monomer of a nucleic acid**

**Diagram the structure of a nucleotide**

**Describe the structure of a nucleic acid**

**Compare DNA to RNA (cite 3 differences)**

**Identify the function of both DNA and RNA**

**Identify 3 groups of lipids**

**Describe the structure and function of fats or oils (triglycerides)**

**Compare a saturated fatty acid to an unsaturated fatty acid**

**Compare an oil to a fat**

**Describe the structure and function of a phospholipid**

**Describe the structure and function(s) of steroids**

**Identify the monomer of a protein**

**Diagram the general structure of an amino acid**

**Identify the function of an enzyme**

**Diagram an enzyme and label the active site**

**What is the energy of activation?**

**Describe HOW an enzyme speeds up a chemical reaction**

**Explain how changes in temperature, pH and concentration can affect the rate of an enzyme reaction**

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**Diagram the structure of a water molecule**

**Explain how water molecules form hydrogen bonds**

**Define a polar molecule...Explain how water fits this definition**

**Explain the properties of water: cohesion, surface tension and adhesion...How do they relate to life?**

**Describe water's ability to moderate temperature...How does this pertain to freezing point and evaporation?**

**Explain how evaporative cooling moderates an organism's temperature**

**Compare the density of ice to water**

**Diagram the types of structures that carbon molecules can form**