BIOCHEMISTRY VA BIOLOGY SOL Cheat Sheet

by grnpony via cheatography.com/55578/cs/14773/

PROPERTIES OF WATER

POLARIY
- Water has positive and negative "ends
- This properties allows cohesion, adhesion, surface tension

Adhesion
- ability of water to stick to other molecules

Cohesion
- ability of water to stick to itself (other water molecules)

High Specific Heat
- ability of water to resist temperature change

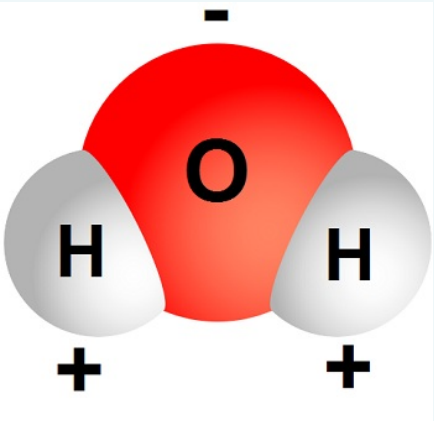
Surface Tension
- the tension of the surface film of a liquid caused by the attraction of the particles in the surface layer.

Water is a UNIVERSAL SOLVENT
-Water is capable of dissolving a variety of different substances

Capillary Action
- is the ability of a liquid to flow in narrow spaces without the assistance of, or even in opposition to gravity

Water's abilities are due to its polarity creating hydrogen bonds

Water Molecule



Notice that the Oxygen is Negative and the Hydrogens are Positive

Reactions

$$H_2 + O_2 \rightarrow H_2O$$

reactants products

Vocabulary

Solutes	the minor component in a solution, dissolved in the solvent.
Solvents	the liquid in which a solute is dissolved to form a solution.
Solution	a liquid mixture in which the minor component (the solute) is uniformly distributed within the major component (the solvent).

Why is this important for the real world?

The properties of water make it suitable for organisms to survive in during differing weather conditions.

Ice freezes as it expands, which explains why ice is able to float on liquid water.

During the winter when lakes begin to freeze, the surface of the water freezes and then moves down toward deeper water; this explains why people can ice skate on or fall through a frozen lake.

If ice was not able to float, the lake would freeze from the bottom up killing all ecosystems living in the lake.

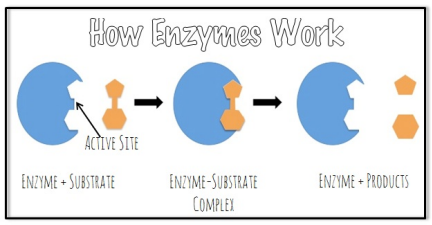
However ice floats, so the fish are able to survive under the surface of the ice during the winter.

The surface of ice above a lake also shields lakes from the cold temperature outside and insulates the water beneath it, allowing the lake under the frozen ice to stay liquid and maintain a temperature adequate for the ecosystems living in the lake to survive.

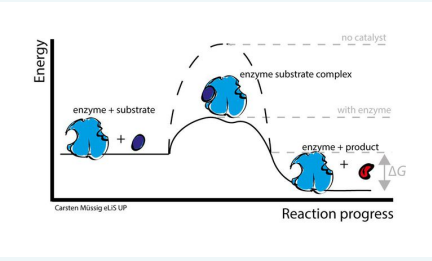
Enzymes - ASE

Enzymes are proteins that act as catalyst to speed up chemical reactions

Enzyme Structure



Enzyme Graph



Biochemistry

All ORGANIC compounds must contain Carbon (C).

The MACROMOLECULES

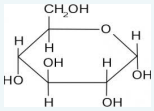
CARBOH-YDRATES C H O ends in -OSE	Monomer - Monosaccharide (Glucose) Polymer - Polysaccharide (Starch) Main source of fast energy
PROTEINS C H O N	Monomer - Amino Acids Polymer - Polypeptides Used for structure, to trasnport things in/out of cell and as a catalyst to speed up reactions - enzyme

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The MACROMOLECULES (cont)

LIPIDS (Fats) C H O	Monomer - Fatty Acids Used to store energy, create insulation and water proofing, in membranes, hydrophobic Fats, Oils Waxes
NUCLEIC ACIDS C H O N P	Monomer - NUCLEOTIDES DNA and RNA Stores and transmits genetic information

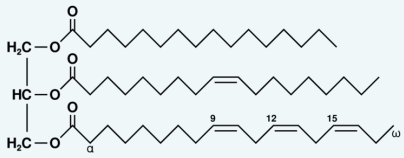
Carbohydrate



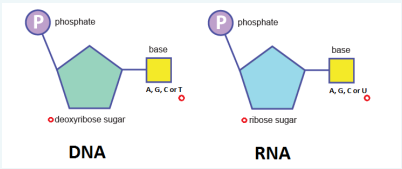
Proteins



Lipids



Nucleic Acids



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