Bio I

Notes: Biochemistry

- Basic elements of life

- CHNOPS (carbon, hydrogen, nitrogen, oxygen, phosphorous, sulfur): Found in all living things; difference is that they are in different proportions

- Carbohydrates (pg. 162)

- Structure: made up of C, H and O; have a ratio of 1:2:1 (C:H:O)

- Function: great source of energy and provides structure in plants.

- Three types of carbohydrates:

* Monosaccharide: simplest sugar (composed of one sugar unit); an example is glucose

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* Disaccharide: composed of two sugar subunits; an example is Sucrose

* Polysaccharide: composed of many sugar subunits:

- Cellulose: structural carbohydrate in plants

- Starch: energy storage in plants

- Glycogen: energy storage in animals

- Lipids: Fats and Oils (pg. 164)

- Structure: made up of C, H and O, but no general formula.

- Composed of fatty acid and glycerol subunits

- Fatty acids can be saturated or unsaturated.

Saturated	Unsaturated
Solid at room temperature	Liquid at room temperature
Found in animals	Found in plants
Contains single bonds	Contains one to many double bonds

- Function: energy storage and key component in cell membranes

- Proteins (pg. 164)

- Structure: made up of C, H, O, N, S

- Composed of amino acid subunits held together by peptide bonds.

- Function: most abundant organic compound in all living things; used to construct hair fibers, tissue and enzymes.

- Nucleic Acids (pg. 167)

- Structure: made up of C, H, N, O, and P

- Composed of nucleotide subunits

- Function: Hereditary