**Chemistry of Life**

**Bio-Chemistry** = the study of organic molecules and their function in living organisms

**Organic Molecules**

- **Carbohydrates**
- **Lipids**
- **Nucleic Acids**
- **Vitamins**
- **Proteins**

**Organic Molecule** = substances that are found within living organisms and contain carbon-hydrogen bonds. =major classes are vitamins, carbohydrates, proteins, lipids and nucleic acids

1. **Carbohydrates**
   - **Simple Carbohydrates**
     - Monosaccharides
     - Disaccharides
   - **Complex Carbohydrates**
     - Polysaccharides

**Carbohydrates** = organic molecules made of carbon, hydrogen and oxygen. =the amount of hydrogen atoms in a molecule is usually double the amount of oxygen. = monomers are connected by glycosidic bonds

Function = 1- release energy when needed, 2- store energy, 3- form certain structures.
Nucleotides = the monomers that make up nucleic acids. Made of 3 parts = 1-a sugar 2-a phosphate group 3-organic nitrogen base.

Deoxyribonucleic Acid = found in nucleus in the form of chromosomes (spiralling around histones) = consists of a deoxyribose sugar, a phosphate and four different nitrogenous bases 1-adenine 2-thymine 3-guanine 4-cytosine.

Characteristics = double helix - adenine only pairs with thymine and cytosine only pairs with guanine = they are connected by weak hydrogen bases = controls the structure and function of cells through producing different proteins = responsible for transmitting heredity information from cell to cell and parent to offspring.