

Melissa Mayo

Atoms: build living things and non living things made of 3 parts -
 protons: + neutrons: + electron: -

Biochemistry

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Element: substance made up entirely by one type of atom

- H - Hydrogen
- C - Carbon
- O - Oxygen
- N - Nitrogen
- P - Phosphorus
- Cl - Chlorine
- S - Sulfur

Important Inorganic Compounds
 - water - most abundant or common inorganic molecule
 - salts
 - Acids & Bases (pH)
 It is important to maintain pH in some parts of the body

Organic Compounds
 contain Carbon and Hydrogen **TOGETHER**

Compound: combination of 2 elements

ex - $C_6H_{12}O_6$
 Glucose
 is organic

pH - the measure of how acidic or basic a solution is

Inorganic compounds
 contain Carbon and Hydrogen **TOGETHER**

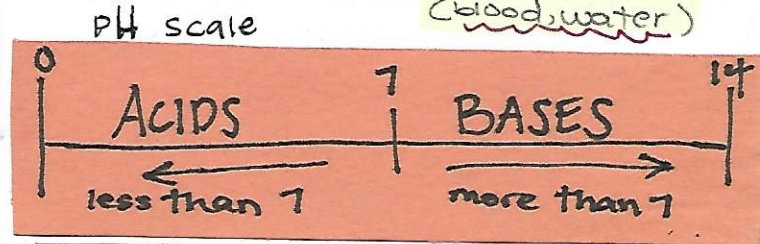
Acids have a pH between 0-6 and a High Concentration of H^+ ions. **Bases** have a pH between 8-14 and a high concentration of OH^- ions. **Neutral solutions** have a pH of 7 (blood/water)

BUFFERS - mixtures of solutions that help maintain pH

Important Organic Compounds

Monomers - smaller subunits or building blocks that make up larger molecules
 → **POLYMERS**
 join together to make **MACROMOLECULES**

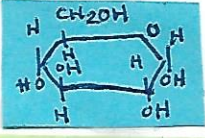
Carbohydrates - Ex - bread, pasta, sugars
 Elements - Carbon, Hydrogen, Oxygen (1:2:1) → makes it organic
 Function - for immediate energy source
 Monomers - monosaccharides
 Polymers - disaccharides and polysaccharides
 3 types:
 1. Mono - simple sugars like glucose, galactose, fructose
 2. Diss. - sugars composed of two monosaccharides like sucrose, maltose, and lactase.
 3. Poly - complex sugars (many mono. put together)
 Ex - plants store excess sugar as starch, animals store excess sugar as glycogen



GLUCOSE usually has ring shape

- Acidic**
 Shampoo, tomatoes, vinegar
Basic
 Antacid, oven cleaner

EX - bead = monomer, necklace = polymer / macromolecule



LIPIDS (ex - butter, oil, waxes, phospholipids)

Elements - Carbon, Hydrogen, Oxygen
 Function -
 1. long term energy storage
 2. parts of cell membrane
 3. insulation
 4. steroids are chemical messengers
 Monomer - glycerol & 3 fatty Acids
 Macromolecule - Lipids
 Lipids can be saturated or unsaturated
 - solid at room temp. → liquid at room temp.

PROTEINS - ex: fish, meat, eggs

Elements - Carbon, Hydrogen, Oxygen, Nitrogen, Sulfur
 Function -
 1. control rate of reactions
 2. regulate cell processes ex - hormones
 3. some are used to form bones and muscles
 4. transport material ex - proteins & hemoglobin
 5. Insulin - controls the amount of sugar in your blood
 Monomers - Amino Acids joined by a peptide bond → transports oxy. through blood
 Polymers - Protein / polypeptide
 Another type of protein is an enzyme. They act as a catalyst, which speed up chemical reactions. Enzymes end in "ase"