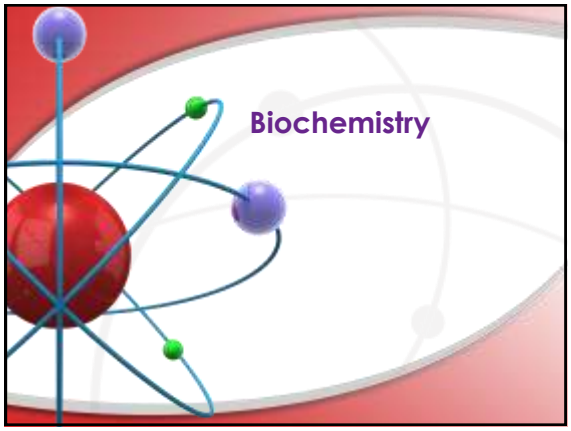
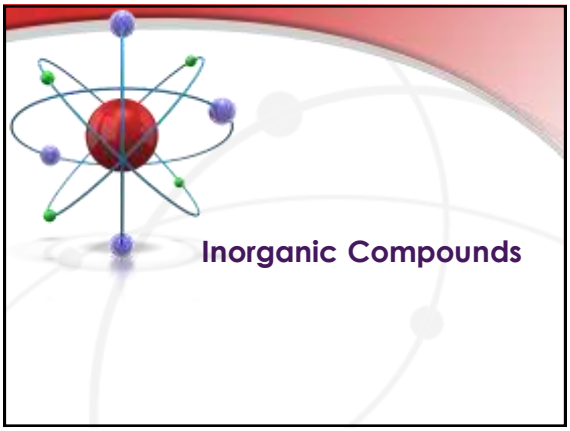




Inorganic Compounds

- Lack carbon
- tend to be small, simple molecules
- May be ionic or covalent
- examples
  - water
  - salts
  - many acids and bases

Water

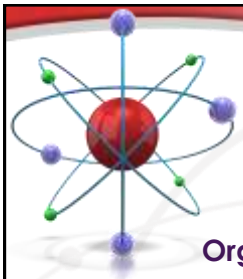
- Polar molecule
- High heat capacity
- "Universal" solvent
- Chemical reactivity
- Cushioning

Salts

- ionic compounds
- The salts of many metallic elements are found throughout the body such as those containing:
  - Calcium
  - Phosphorus

Salts

- Dissociate in water
  - Sodium and potassium ions are important for nerve impulses
  - iron forms part of hemoglobin which transports oxygen in the blood
- electrolytes
  - substances that conduct electrical current in solution



Organic Compounds

Carbohydrates

- primary source of chemical energy
- sugars and starches

Carbohydrates

- Simple
  - monosaccharides
    - monomers (building blocks) of more complex carbohydrates
  - dissaccharides
    - made up of two monosaccharides
    - they combine through dehydration synthesis
      - glucose + fructose = sucrose
      - glucose + galactose = lactose
      - glucose + glucose = maltose

Simple Sugars

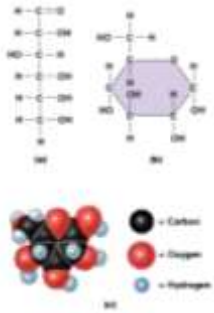


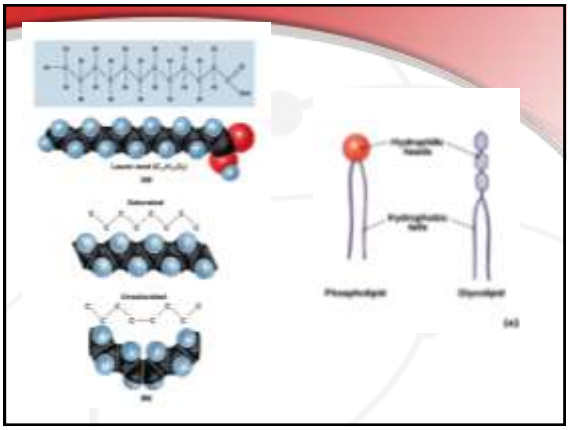
Figure 2-10

Carbohydrates

- Complex
  - Polysaccharides
  - Many monosaccharides
  - Energy storage
    - Starch
    - Glycogen

Lipids

- Large, diverse group
- Triglycerides
  - Stored energy
  - Protection
  - Insulation
- Phospholipids
  - Cell membranes
  - Transport of lipids



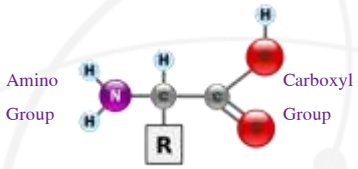
Lipids

- Steroids
  - Ring structure
  - Cholesterol
    - Basis of all body steroids
  - Vitamin D
    - Necessary for bone growth and function
  - Sex hormones
    - Necessary for normal reproductive function

Proteins

- Over 50% of organic matter in body
- High variable function
  - Structure
  - Transport
  - Antibodies
  - Enzymes
  - Contraction
  - Hormones
  - Storage
- Combinations of amino acids

Amino Acids



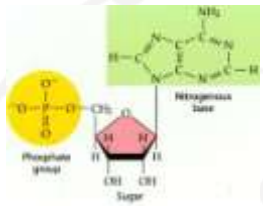
Enzymes

- Biological catalysts
  - substance that increases the rate of a reaction without being used up in the process

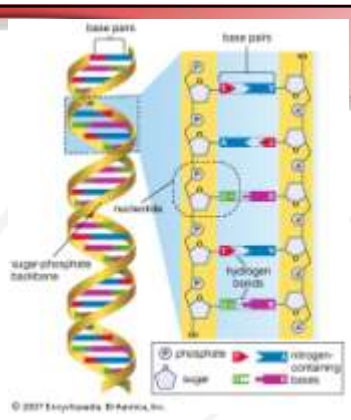
Nucleic Acids

- transmit hereditary materials from one generation to another
- directors of the cell's activities

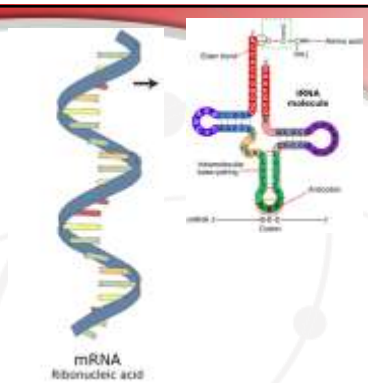
Nucleotides



DNA



RNA



ATP

- Chemical Energy
  - Only energy cell can use
- Modified nucleotide