Macromolecules

Two types of nucleic acids:
- deoxyribonucleic acid (DNA) and ribonucleic acid (RNA)

Flow of information within a cell: nucleic acids = polymers of nucleotides

DNA Structure

Hydrogen bonds form between A-T and C-G pairs.

Cartoon of base pairing

Cartoon of double helix
Macromolecules

Carbohydrates
- *Monosaccharides

Linear and ring forms:

Abbreviated ring structure

Macromolecules

*Disaccharides
glycosidic linkage

*Polysaccharides
- Storage
- Structural

Macromolecules

Lipids
- Hydrophobicity based on structure

Fats store energy
- *Glycerol
- *Fatty acid

Fats can be:
- Saturated
- Unsaturated

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Introduction to Cells

How we study cells:

- **Light microscope**
  - *magnification*
  - *resolving power*
- **Electron microscope**
  - *Transmission (TEM)*
  - *Scanning (SEM)*

Two basic types:

A view of the cell:

- All cells are membrane bound, possess ribosomes and contain DNA.
- Plasma membrane.
  - Outside of cell
  - Inside of cell
  - Red blood cell

Hydrophilic region

Hydrophobic region

Proteins

Phospholipid

Carbohydrate side chain
Two categories of cells:
- prokaryotic
- eukaryotic

Additional components of any cell:
- cytoplasm
- cytosol

All cells possess ribosomes

All cells contain DNA

Kingdom Monera – archaebacteria and eubacteria

- plasma membrane
- ribosomes
- nucleoid
- cell wall
- capsule
- pili