

Chapter 5-1: Polymer Principles

Biological Molecules

- Cells join smaller organic molecules together to form larger molecules.
- These larger molecules, **macromolecules**, may be composed of thousands of atoms
 - The four major classes of macromolecules are:

carbohydrates
lipids
proteins
nucleic acids
**Most macromolecules
are polymers**

- Three of the four classes of macromolecules form chainlike molecules called **polymers** (carbohydrates, proteins, nucleic acids).
- Polymers are large molecules made up of repeating subunits called **monomers**.
 - Formed by **condensation or dehydration reactions** – the covalent bonding of monomers with loss of water
 - Requires energy – aided by enzymes
- The covalent bonds connecting monomers in a polymer are disassembled by **hydrolysis**.
 - Covalent bonds between monomers are broken by adding water.