Chapter 3 Study Guide

# Important Ideas

* Atoms make up four main groups of molecules in living cells. (Modules 3.1-3.16)

# Learning Objectives

Upon successful completion of **Modules 3.1-3.16**

1. Define and recognize examples of organic molecules and distinguish them from inorganic compounds.
2. Compare and contrast the four biomolecule families: carbohydrates, proteins, nucleic acids, and lipids. Identify the following for each family of molecules:
   1. monomer (or subunit) name and structure
   2. polymer name and basic structure
   3. functions
3. Describe the processes by which living organisms build larger biomolecules from smaller ones (dehydration reaction) and break down biomolecules into smaller ones (hydrolysis).
4. Differentiate between the major categories of carbohydrates found in living organisms (=monosaccharide, disaccharide, and polysaccharide) and identify diagrams of each.
5. Differentiate between the major categories of lipids: Fats/triglycerides (saturated and unsaturated), phospholipids, and steroids based on structure and function.
6. Differentiate between DNA and RNA in structure and function.
7. Recognize illustrations of proteins, carbohydrates, lipids, and nucleic acids.
8. Define the following terms: hydrophobic, and hydrophilic.