

Microbiology Learning Objectives C2
Chemical Principles

1. Describe the structure of an atom and its relation to the physical properties of elements.
2. How does carbon 14 differ from carbon 12? What is the atomic number of each carbon atom? Atomic weight?
3. Define ionic bond, covalent bond, polar covalent bond, hydrogen bond, molecular weight, and mole.
4. What are the three basic types of chemical reactions?
5. What are the properties of water that are important to living systems?
6. Define acid, base, salt, and pH.
7. What is the difference between organic and inorganic compounds?
8. What is a functional group?
9. What are the building blocks of carbohydrates?
10. Differentiate simple lipids, complex lipids, and steroids
11. What are the building blocks of proteins?
12. Identify the building blocks of nucleic acids. How do DNA and RNA differ?
13. Describe the role of ATP in cellular activities. Which can provide more energy for a cell and why: ATP or ADP?