CHAPTER 3 The Molecules of Cells

OBJECTIVES

Introduction to Organic Compounds and Their Polymers

Introduction
Explain how spider silk is produced. Describe the special properties of spider silk that help silk capture prey.
3.1 Explain why carbon is unparalleled in it ability to form large, diverse molecules.
3.1 Define organic compounds, hydrocarbons, a carbon skeleton, and an isomer.
3.2 Describe the properties of and distinguish between the four functional groups of organic molecules.
3.3 List the four classes of macromolecules, explain the relationship between monomers and polymers, and compare the processes of dehydration synthesis and hydrolysis.

Carbohydrates
3.4-3.7 Describe the structures, functions, properties, and types of carbohydrate molecules.

Lipids
3.8-3.10 Describe the structures, functions, properties, and types of lipid molecules.

Proteins
3.11-3.18 Describe the structures, functions, properties, and types of proteins.
3.19 Describe the major achievements of Linus Pauling.

Nucleic Acids
3.20 Compare the structures and functions of DNA and RNA.