

Vocabulary

Key Concepts

Section 6.1 Atoms, Elements, and Compounds

- atom (p. 148)
- compound (p. 151)
- covalent bond (p. 152)
- electron (p. 148)
- element (p. 149)
- ion (p. 153)
- ionic bond (p. 153)
- isotope (p. 150)
- molecule (p. 152)
- neutron (p. 148)
- nucleus (p. 148)
- proton (p. 148)
- van der Waals force (p. 155)

MAIN Idea Matter is composed of tiny particles called atoms.

- Atoms consist of protons, neutrons, and electrons.
- Elements are pure substances made up of only one kind of atom.
- Isotopes are forms of the same element that have a different number of neutrons.
- Compounds are substances with unique properties that are formed when elements combine.
- Elements can form covalent and ionic bonds.

Section 6.2 Chemical Reactions

- activation energy (p. 158)
- active site (p. 160)
- catalyst (p. 159)
- chemical reaction (p. 156)
- enzyme (p. 159)
- product (p. 157)
- reactant (p. 157)
- substrate (p. 160)

MAIN Idea Chemical reactions allow living things to grow, develop, reproduce, and adapt.

- Balanced chemical equations must show an equal number of atoms for each element on both sides.
- Activation energy is the energy required to begin a reaction.
- Catalysts are substances that alter chemical reactions.
- Enzymes are biological catalysts.

Section 6.3 Water and Solutions

- acid (p. 164)
- base (p. 164)
- buffer (p. 165)
- hydrogen bond (p. 161)
- mixture (p. 163)
- pH (p. 165)
- polar molecule (p. 161)
- solute (p. 163)
- solution (p. 163)
- solvent (p. 163)

MAIN Idea The properties of water make it well suited to help maintain homeostasis in an organism.

- Water is a polar molecule.
- Solutions are homogeneous mixtures formed when a solute is dissolved in a solvent.
- Acids are substances that release hydrogen ions into solutions. Bases are substances that release hydroxide ions into solutions.
- pH is a measure of the concentration of hydrogen ions in a solution.

Section 6.4 The Building Blocks of Life

- amino acid (p. 170)
- carbohydrate (p. 168)
- lipid (p. 169)
- macromolecule (p. 167)
- nucleic acid (p. 171)
- nucleotide (p. 171)
- polymer (p. 167)
- protein (p. 170)

MAIN Idea Organisms are made up of carbon-based molecules.

- Carbon compounds are the basic building blocks of living organisms.
- Biological macromolecules are formed by joining small carbon compounds into polymers.
- There are four types of biological macromolecules.
- Peptide bonds join amino acids in proteins.
- Chains of nucleotides form nucleic acids.