CHAPTER HIGHLIGHTS

Describing Chemical Reactions

Vocabulary
chemical equation
precipitate
coefficient
word equation
formula equation
reversible reaction

- Four observations that suggest a chemical reaction is taking place are the evolution of energy as heat and light, the production of gas, a change in color, and the formation of a precipitate.
- A balanced chemical equation represents, with symbols and formulas, the identities and relative amounts of reactants and products in a chemical reaction.

Types of Chemical Reactions

Vocabulary
synthesis reaction
decomposition reaction
electrolysis
single-displacement reaction
double-displacement reaction
combustion reaction

- Synthesis reactions are represented by the general equation $A + X \longrightarrow AX$.
- Decomposition reactions are represented by the general equation $AX \longrightarrow A + X$.
- Single-displacement reactions are represented by the general equations $A + BX \longrightarrow AX + B$ and $Y + BX \longrightarrow BY + X$.
- Double-displacement reactions are represented by the general equation $AX + BY \longrightarrow AY + BX$.
- In a combustion reaction, a substance combines with oxygen, releasing energy in the form of heat and light.

Activity Series of the Elements

Vocabulary
activity series

- Activity series list the elements in order of their chemical reactivity and are useful in predicting whether a chemical reaction will occur.
- Chemists determine activity series through experiments.