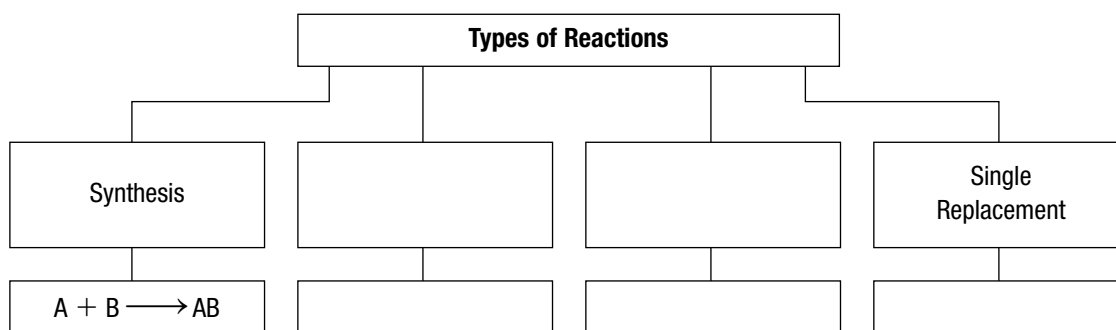


Chapter 7 Chemical Reactions

Section 7.2 Types of Reactions**(pages 199–205)***This section discusses how chemical reactions are classified into different types.***Reading Strategy (page 199)**

Previewing Skim the section and begin a concept map like the one below that identifies types of reactions with a general form. As you read, add the general form of each type of reaction. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

**Classifying Reactions (pages 199–204)**

- Name five general types of chemical reactions. _____

- Circle the letter of each equation that represents a synthesis reaction.
 - $2\text{Na} + \text{Cl}_2 \longrightarrow 2\text{NaCl}$
 - $2\text{NaCl} \longrightarrow 2\text{Na} + \text{Cl}_2$
 - $2\text{H}_2\text{O} \longrightarrow 2\text{H}_2 + \text{O}_2$
 - $2\text{H}_2 + \text{O}_2 \longrightarrow 2\text{H}_2\text{O}$
- Is the following sentence true or false? A decomposition reaction is the opposite of a synthesis reaction. _____
- Write the equation for the decomposition of calcium carbonate into calcium oxide and carbon dioxide. _____
- Circle the letter of the correct answer. Copper reacts with silver nitrate in a single-replacement reaction. What are the products of this reaction?
 - copper(II) nitride and silver oxide
 - copper(II) nitrate and silver
 - copper(II) oxide and silver nitrate
 - copper, nitrogen, and silver oxide

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6. What is a double-replacement reaction? _____

7. Complete the chart by filling in the general forms of the reactions shown.

General Forms	
Single-Replacement Reaction	Double-Replacement Reaction

8. Lead(II) nitrate reacts with potassium iodide to form lead(II) iodide and potassium nitrate. Write the balanced equation for this double-replacement reaction. _____
9. Circle the letter of the correct answer. Calcium carbonate, CaCO_3 , reacts with hydrochloric acid, HCl , in a double-replacement reaction. What are the products of this reaction?
- calcium chloride, CaCl_2 , and carbonic acid, H_2CO_3
 - calcium hydride, CaH_2 , chlorine, Cl_2 , and carbon dioxide, CO_2
 - calcium hydrogen carbonate, $\text{Ca}(\text{HCO}_3)_2$, and chlorine, Cl_2
 - calcium perchlorate, $\text{Ca}(\text{ClO}_4)_2$, and methane, CH_4
10. Is the following sentence true or false? A combustion reaction is a reaction in which a substance reacts with carbon dioxide, often producing heat and light. _____
11. Methane, CH_4 , burns in oxygen to form carbon dioxide and water. Write the balanced equation for this reaction. _____
12. Is the following sentence true or false? The reaction that forms water can be classified as either a synthesis reaction or a combustion reaction. _____

Reactions as Electron Transfers (pages 204–205)

13. What is an oxidation-reduction reaction? _____

14. Calcium reacts with oxygen to form calcium oxide. Which reactant is oxidized in this reaction? _____
15. Is the following sentence true or false? When calcium reacts with oxygen, each calcium atom gains two electrons and becomes a calcium ion with a charge of 2-. _____
16. Is the following sentence true or false? Oxygen must be present in order for an oxidation-reduction reaction to take place.

17. The process in which an element gains electrons during a chemical reaction is called _____.