

CHAPTER 4**Balancing Chemical Equations****BLM 2-18****Goal** • Practise writing skeleton equations and balanced equations.

1.

Word equation	iron + sulphur $\rightarrow$ iron(II) sulphide
Skeleton equation	
Balanced equation	

2.

Word equation	calcium + oxygen $\rightarrow$ calcium oxide
Skeleton equation	
Balanced equation	

3.

Word equation	calcium oxide + carbon dioxide $\rightarrow$ calcium carbonate
Skeleton equation	
Balanced equation	

4.

Word equation	copper(II) oxide $\rightarrow$ copper + oxygen
Skeleton equation	
Balanced equation	

5.

Word equation	barium chloride + potassium sulphate $\rightarrow$ barium sulphate + potassium chloride
Skeleton equation	
Balanced equation	

6.

Word equation	potassium + water $\rightarrow$ potassium hydroxide + hydrogen
Skeleton equation	
Balanced equation	

Use with textbook pages 202–203, 206–211.

Chemical reactions and chemical equations

Rewrite the following sentences as chemical word equations. Then write the skeleton equation and balance the equation.

1. Iron combines with oxygen to form rust, which is also known as iron(II) oxide.

Word equation: _____

Balanced equation: _____

2. A solution of hydrogen chloride reacts with sodium carbonate to produce carbon dioxide, sodium chloride, and water.

Word equation: _____

Balanced equation: _____

3. When aluminum metal is exposed to oxygen, a metal oxide called aluminum oxide is formed.

Word equation: _____

Balanced equation: _____

4. Water reacts with powered sodium oxide to produce a solution of sodium hydroxide.

Word equation: _____

Balanced equation: _____

5. Hydrogen gas reacts with nitrogen trifluoride gas to form nitrogen gas and hydrogen fluoride.

Word equation: _____

Balanced equation: _____

6. Chromium(III) sulphate reacts with potassium carbonate to form chromium(III) carbonate and potassium sulphate.

Word equation: _____

Balanced equation: _____

7. Potassium chlorate when heated becomes oxygen gas and potassium chloride.

Word equation: _____

Balanced equation: _____

8. A piece of metallic zinc is placed in a blue solution of copper(II) sulphate. A reddish brown layer of metallic copper forms in a clear solution of zinc sulphate.

Word equation: _____

Balanced equation: _____

Use with textbook pages 202-211.

Word equations

Write the skeleton equation for each of the following reactions. Then balance each of the following chemical equations.

1. hydrogen + oxygen $\rightarrow$ water

2. iron(III) oxide + hydrogen $\rightarrow$ water + iron

3. sodium + water $\rightarrow$ sodium hydroxide + hydrogen

4. calcium carbide + oxygen $\rightarrow$ calcium + carbon dioxide

5. potassium iodide + chlorine $\rightarrow$ potassium chloride + iodine

6. chromium + tin(IV) chloride $\rightarrow$ chromium(III) chloride + tin

7. magnesium + copper(II) sulphate $\rightarrow$ magnesium sulphate + copper

8. zinc sulphate + strontium chloride $\rightarrow$ zinc chloride + strontium sulphate

9. ammonium chloride + lead(III) nitrate $\rightarrow$ ammonium nitrate + lead(III) chloride

10. iron(III) nitrate + magnesium sulphide $\rightarrow$ iron(III) sulphide + magnesium nitrate

11. aluminum chloride + sodium carbonate $\rightarrow$ aluminum carbonate + sodium chloride

12. sodium phosphate + calcium hydroxide $\rightarrow$ sodium hydroxide + calcium phosphate
