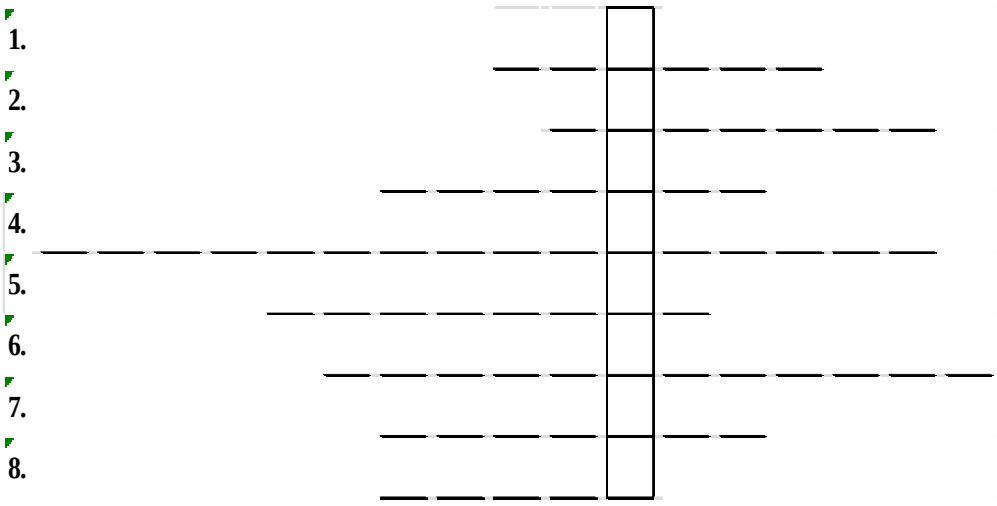
NAME_____ DATE_____ CLASS_____

STUDY GUIDE Chapter 21

Chemical Changes in Matter

Solve the puzzle below by writing the term in the diagram that fits each definition. You will find another term spelled vertically in the black box.



Hints

1. The arrow in a chemical equation means produces or _____ .
2. means dissolved in water
3. combination of chemical symbols used to represent a compound
4. well-defined example of a chemical change (2 words)
5. substances produced in a chemical reaction
6. numbers before a symbol that represent the relative number of atoms taking part in a reaction
7. letters used to represent elements
8. substances that react to produce a chemical change

Some symbols that are used in chemical equations are listed in the first column of the table below. Complete the table by writing in the second column the term represented by each symbol.

Symbol	Meaning
(→)	
(cr)	
(l)	
(g)	
(aq)	

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REINFORCEMENT Chapter 21

Chemical Changes in Matter

Use the equations to answer the questions.

$Zn(cr) + S(cr) \longrightarrow ZnS(cr)$

1. What are the reactants in this chemical reaction?_____
2. What is the product?_____
3. What is the state of both the reactants and the products?_____
4. According to the law of conservation of mass, if the total mass of the product in this chemical reaction is 14 grams, what must the combined masses of the reactants be?_____

$2H_2(g) + 0_2(g) \longrightarrow 2H_20\ (l)$

5. What is the product in this reaction?_____
6. What are the reactants?_____
7. What are the states of the reactants in this reaction?_____
8. What is the state of the product?_____
9. What do the coefficients tell you about the ratio of the reactants?_____
10. How many units of the product are produced?_____

Write chemical equations for the following reactions.

11. Two units of solid sodium plus one unit of chlorine gas produce two units of sodium chloride, a solid.

_____

12. One unit of methane gas, CH_4, plus two units of oxygen gas produce one unit of carbon dioxide gas, CO_2, and two units of liquid water.

_____

13. One unit of aqueous aluminum sulfate plus three units of aqueous barium chloride yield two units of aqueous aluminum chloride plus three units of solid barium sulfate.

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