Name: _____

Period: _____

# Chapter 20 and 21 Review

**Vocabulary** - *Know the following vocabulary and how to apply them.*

| | | | |
|---|---|---|---|
| 1. Endothermic | A. Mass is never created or destroyed, only transformed; mass of reactants must equal the mass of the products. | 1. Closed System | A. An experimental setup that does not capture the products. |
| 2. Exothermic | B. A reaction that produces more energy than it uses, so it gets hot. | 2. Open System | B. The reactant that is the first to be used up and stops the reaction. |
| 3. Law of Conservation of Mass | C. Says that in chemical reactions gases can form. | 3. Products | C. An experimental setup that traps the products so they can't escape. |
| 4. Principle of Definite Proportions | D. A reaction that uses more energy than it makes, so it gets cold. | 4. Reactants | D. What is made in a chemical reaction; on the right side. |
| | E. Compounds and molecules occur in only one way. | 5. Limiting Reactant | E. The chemicals that interact together to make a chemical reaction. |

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**Physical vs Chemical Change** —

*Know how to tell the decide between physical and chemical changes and give evidence for your decision.*

**Circle** the indicators of a physical changes.
**Underline** the indicators of a chemical change.

| | | |
|---|---|---|
| Melts | Makes bubbles | Changes color |
| Changes smell | Ripped | Temperature changes |
| Boils | Turns cloudy | Cutting |
| Breaks | Dissolves | Changes taste |

What two household chemical cleaners must you never mix:

Why?

When bubbles are created in chemical reaction what is really being formed?

When a liquid turns cloudy in a chemical reaction what is really being formed?

| | **Physical or chemical change?** | **Evidence to support your conclusion** |
|---|---|---|
| Sugar dissolved in water | _____ | _____ |
| Wood burning | _____ | _____ |
| Digestion | _____ | _____ |
| Water boiling | _____ | _____ |
| Two liquids bubble when mixed | _____ | _____ |

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Review

**Reading, Balancing, and Classifying Chemical Reactions -**

*Know how to read a chemical reaction: reactants on the left; products on the right; arrow means "produces" or "makes".*
*Know how to read how many atoms exist in a part of a chemical reaction.*
*Know how to balance chemical reactions and **why**.*
*Know how to classify a chemical reaction as addition, decomposition, combustion, single or double displacement.*

| $Li_2O + MgCl_2 \rightarrow 2LiCl + MgO$ | $2C_3H_7OH + 9O_2 \rightarrow 6CO_2 + 8H_2O$ |
|---|---|
| *Circle* the second reactant: _____ | *Name* the first product: _____ |
| *Underline* the first product: _____ | How many carbons on the reactant side? _____ |
| How many Lithiums on the product side? _____ | How many hydrogens on the product side? _____ |

| **Type of Reaction** | **Balance the reactions:** |
|---|---|
| _____ | ____ $Na_2(SO_4)$ + Mg→ ____ Na + ____ $Mg(SO_4)$ |
| _____ | ____ $Na_2SO_4$ + ____ $BaCl_2$ → ____ $BaSO_4$ + ____ NaCl |
| _____ | ____ $CuSO_4$ + ____ Al → ____ $Al_2(SO_4)_3$ + ____ Cu |
| _____ | ____ $P_4$ + ____ $O_2$ → ____ $P_2O_5$ |
| _____ | ____ $C_2H$ + ____ $O_2$ → ____ $CO_2$ + ____ $H_2O$ |

Study Helps for the Test:

Website (address below): Study at home, in Mr. Murray's room, or in the library.
- Balancing of Chemical Reactions website
- Types of Reactions Practice Quiz
- Chapter 20 and 21 Printable Flashcards

Tutoring with Mr. Murray before and after school or at lunch.