

## Chemical Changes (p. 632 – 637)

### I. Describing Chemical Reactions

#### 1. Define the term chemical reaction.

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Chemical Reaction – change in which one or more substances are converted into new substances

#### 2. Define the term reactants.

Ex.  
Forest  
Fire

Reactants – substances that go into a chemical reaction and react

#### 3. Define the term products.

Products – new substances that come out of a chemical reaction and produced

### II. Conservation Of Mass

#### 1. What key discovery did Antoine Lavoisier make concerning chemical reactions?

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Total mass of products = Total mass of reactants

#### 2. Matter is not created or destroyed, but is conserved.

Circle One :

True

False

#### 3. State the law of conservation of mass.

Law Of Conservation Of Mass – matter is not created or destroyed, but is conserved

(Total mass reactants = Total mass of products)

#### 4. Who is known as the father of modern chemistry?

Antoine Lavoisier (late 1700's)

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#### 5. Which group currently names chemical compounds and new elements?

IUPAC (International Union of Pure + Applied Chemistry)

### III. Writing Equations

#### 1. Define the term chemical equation.

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Chemical Equation – way to describe a chemical reaction using chemical formulas + other symbols

**2. Match the chemical equation symbol with the proper meaning.**

- |                         |  |
|-------------------------|--|
| 1. <u>F.</u> →          | A. aqueous; substance dissolved in water |
| 2. <u>D.</u> +          | B. gas                                   |
| 3. <u>G.</u> (s)        | C. reactants exposed to light            |
| 4. <u>I.</u> (l)        | D. plus                                  |
| 5. <u>B.</u> (g)        | E. electric current applied to reactants |
| 6. <u>A.</u> (aq)       | F. yields, produces, or forms            |
| 7. <u>H.</u> heat<br>→  | G. solid                                 |
| 8. <u>C.</u> light<br>→ | H. reactants are heated                  |
| 9. <u>E.</u> elec.<br>→ | I. liquid                                |

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Balance Equations

1.  $H_2O_2 \rightarrow H_2O + O_2$
2.  $Mg + HCl \rightarrow H_2 + MgCl_2$
3.  $Cu + O_2 \rightarrow CuO$
4.  $H_2 + O_2 \rightarrow H_2O$

**IV. Unit Managers**

**1. Define the term coefficients.**

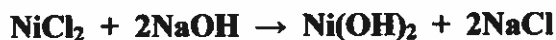
Coefficients - number of units of each substance taking part in a reaction

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**2. How is making a sandwich similar to a chemical reaction?**

1. Ingredients = Reactants
2. Sandwiches = Products
3. # of each kind of Ingredient/Sandwich = Coefficients

**3. Identify the following based on the chemical reaction listed below.**



<u>Reactants</u>	<u>Products</u>
Total # of Ni <u>1</u>	Total # of Ni <u>1</u>
Total # of Cl <u>2</u>	Total # of Cl <u>2</u>
Total # of Na <u>2</u>	Total # of Na <u>2</u>
Total # of O <u>2</u>	Total # of O <u>2</u>
Total # of H <u>2</u>	Total # of H <u>2</u>