Writing and Balancing Equations Name

I. Writing Word Equations

Write the **word equation** that takes place when the following happen:

1) A piece of wood burns, forming carbon dioxide gas and water vapor.

2) Sodium metal and chlorine gas combine to form table salt.

3) Hydrogen gas and Oxygen gas combine to form water.

4) Zinc metal and Hydrochloric acid react to form zinc chloride and hydrogen gas.

5) Sodium metal reacts violently on contact with water, forming a sodium oxide and hydrogen gas.

Now work backwards: write a **description** of what is happening from the following equations:

6) HCl (liquid) + Mg (metal) >>>> $MgCl_2$ + H_2 (gas)

7) C_3H_8 (propane gas) + O_2 (gas) >>>> CO_2 (gas) + H_2O (liquid) + Heat

8) $C_6H_{10}O_5$ (wood) + O_2 (gas) >>>> CO_2 (gas) + H_2O (liquid) + Heat

9) C (solid) + O_2 (gas) >>>> CO_2 (gas) + Heat

II. Writing Chemical Equations

The **reactants** are the compounds and/or elements that combine with each other to form the **products**.

To balance an equation, the reactants (on the left side of the arrow) must be in equal numbers to the products (on the right side of the arrow).

To make an equation balance, check the number of atoms on each side of the equation:

$$4\ Cu + O_2 >>>> 2\ Cu_2O$$

Reactants Side:	*Products Side:*
4 atoms copper	2 units Cu_2O
1 molecule O_2	(made from 4 copper atoms and 2
(containing 2 oxygen atoms)	oxygen atoms)

This equation is balanced because there are an equal number of copper atoms on each side and an equal number of oxygen atoms on each side.