Name_____ Date_____ Block____

ChemThink: Chemical Reactions

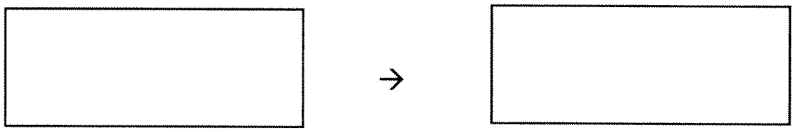
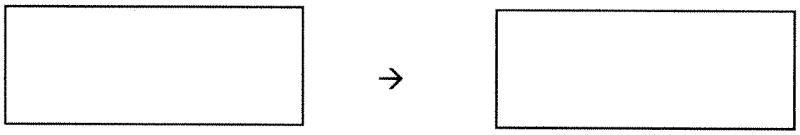
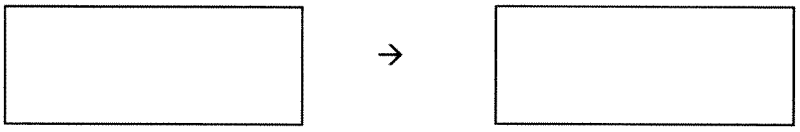
DUE DAY 45
1/22 - 1/23
(A) (B)

Lesson Objectives:

1. Describe chemical reactions by writing balanced chemical equations

Directions:

1. Go to www.chemthink.com . Log in using your user name and password.
2. Click on **Chemical Reactions**. Click on **Chemical Reactions**. Click on **Tutorial**.
3. When you are finished with the **Tutorial** (and taking notes); click on **Try the Questions**.

What are the starting materials called?	_____
What are the materials that are left at the end called?	_____
What does the → represent?	_____ _____
Reaction 2 – draw a picture of the reactants and the products.	
Reaction 3 – draw a picture of the reactants and the products.	
Summary of Reaction **Draw a picture of the reaction where a bond is being formed.**	Reaction 1 
What do all 3 reactions have in common?	• There is a _____ of bonds. • Chemical reactions always involve breaking _____, _____ bonds or both.
How do we represent reactions using symbols?	• We list the substances present **before** a reaction has taken place. These are called _____. • The arrow is added to show that a _____ _____ has occurred. • Then we list the substances present at the end of the reaction. These are called _____.
Use symbols to write the chemical equations for all 3 reactions.	Reaction 1 _____ Reaction 2 _____ Reaction 3 _____

What is always true in a chemical reaction?

- There can never be any _____ atoms or _____ atoms when the reaction is over.
- Chemical reactions only rearrange the _____ in the atoms that are already there.

Making water from hydrogen and oxygen...

- We **are / are not** limited to using only 1 molecule of each of our reactants. We can use as many as we need.

Write the balanced equation for the reaction of hydrogen and oxygen AND count the number of atoms on both sides of the →.

Balanced equation: _____

Reactants #		Products #
	Hydrogen Atoms	
	Oxygen atoms	

- In order to be balanced, each atom on the reactant side must also be present on the _____ side.
- This is known as the Law of Conservation of _____.
- There must be all of the same _____ (and thus the same _____) before and after the reaction.

Looking at the equation $Cu + O_2 \rightarrow CuO$, why doesn't the mass on the reactant side equal the mass on the product side?

_____

_____

Write the balanced equations.

___ Cu + ___ O_2 → ___ CuO

___ CH_4 + ___ O_2 → ___ H_2O + ___ CO_2

___ N_2 + ___ H_2 → ___ NH_3

___ $KClO_3$ → ___ KCl + ___ O_2

___ Al + ___ O_2 → ___ Al_2O_3

Summary

- Chemical reactions always involve _____ bonds, _____ bonds, or both.
- The **Law of Conservation of Mass** requires that the same atoms must be present _____ and _____ the reaction.
- To balance a chemical equation, you must change the _____ in front of each atom or molecule until there are the same numbers of each type of atom _____ and _____ the reaction.

Try the questions!

Finish the Question Set successfully for credit.