

Name: \_\_\_\_\_

## JIGSAW:

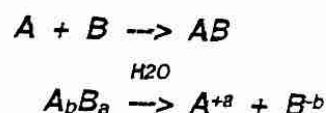
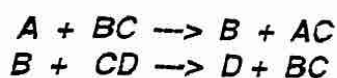
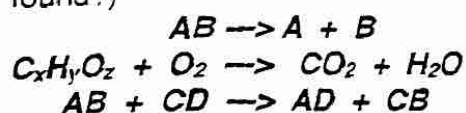
### What do the following reactions have in common?

Use the information so that you can guide your family to learn what you found in your jigsaw group. Please note that the reactions are NOT balanced.

1. Describe any similarities by observing whether the REACTANTS are
  - elements
  - ionic compounds
  - covalent compounds
  - combinations of the above
2. Describe what is happening to the REACTANTS
  - are certain kinds of elements involved in the change? (metals, nonmetals, certain elements OR elements in certain families?)
  - what are these reactants doing? How are they changing?
  - discuss ANY pattern that is consistent in **all** of the examples
3. Come up with a NICK NAME for the reaction that describes the pattern. The name could be a label or a phrase. It can be catchy, cute, funny or serious, but *memorable*.
4. Now, which of the following OFFICIAL reaction names do you think is the most appropriate for these reactions?

combustion (burning of an organic substance)  
single replacement  
double replacement  
decomposition  
synthesis (combination)  
dissociation (ionic compound dissolving in water)

5. Choose from the following general equations (which one most closely describes the pattern you found?)



6. Make sure that everyone in the jigsaw group is in agreement over the answers. If you disagree with the group, say so and argue your idea. Either you will win the rest over, or they will convince you of their answer. **EVERYONE IN THE JIGSAW GROUP MUST AGREE ON ALL FIVE ANSWERS.** When you are all in agreement, call the teacher over to review your findings.

7. When you return to your group, you will be **overseeing** the rest of your family as they go through the same process as you did. (Earth, Fire, Air, Water, in that order.) You are **ONLY TO VERIFY** correct answers, or tell the other members if they are on the wrong track. **DO NOT SHOW OR TELL THEM THE ANSWERS.** You have the authority to help them! **Don't cheat your family members by doing the thinking for them!!!!**

When everyone in the family has completed the notes, work together on the practice problems.

# Types of Reactions

## Example Set

### Set 1



1. Similarities: \_\_\_\_\_

2. What is happening? \_\_\_\_\_

3. Nick name: \_\_\_\_\_

4. Official name: \_\_\_\_\_

5. GENERAL EQUATION for this type: \_\_\_\_\_

## **EARTH**

### Set 2



1. Similarities: \_\_\_\_\_

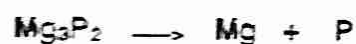
2. What is happening? \_\_\_\_\_

3. Nick name: \_\_\_\_\_

4. Official name: \_\_\_\_\_

5. GENERAL EQUATION for this type: \_\_\_\_\_

### Set 3



1. Similarities: \_\_\_\_\_

2. What is happening? \_\_\_\_\_

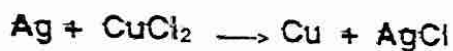
3. Nick name: \_\_\_\_\_

4. Official name: \_\_\_\_\_

5. GENERAL EQUATION for this type: \_\_\_\_\_

# FIVE

4



1. Similarities: \_\_\_\_\_

\_\_\_\_\_

2. What is happening? \_\_\_\_\_

\_\_\_\_\_

3. Nick name: \_\_\_\_\_

4. Official name: \_\_\_\_\_

5. GENERAL EQUATION for this type \_\_\_\_\_

## Set 5



1. Similarities \_\_\_\_\_

\_\_\_\_\_

What is happening? \_\_\_\_\_

\_\_\_\_\_

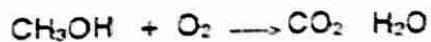
3. Nick name \_\_\_\_\_

4. Official name: \_\_\_\_\_

5. GENERAL EQUATION for this type \_\_\_\_\_

# SIX

## Set 6



1. Similarities \_\_\_\_\_

\_\_\_\_\_

2. What is happening? \_\_\_\_\_

\_\_\_\_\_

3. Nick name \_\_\_\_\_

4. Official name: \_\_\_\_\_

5. GENERAL EQUATION for this type \_\_\_\_\_

# WATER



1. Similarities: \_\_\_\_\_

\_\_\_\_\_ What does the (s) mean? \_\_\_\_\_

2. What is happening? \_\_\_\_\_

3. Nick name: \_\_\_\_\_ 4. Official name: \_\_\_\_\_

5. GENERAL EQUATION for this type: \_\_\_\_\_

## PRACTICE

Indicate which type of chemical reaction (synthesis, decomposition, metallic or halogen single-replacement, double-replacement, dissociation or combustion) is being represented.



# Six Types of Reactions

Name:

On the back of this sheet, SUMMARIZE the six types of reactions by matching the descriptions to the type. Use the Jigsaw notes and PS#30 to help.

## Column A choices:

two ionic compounds

one ionic compound in water

one reactant

metal element and a compound (ionic)

halogen element and a compound (ionic)

organic compound (C and H) and oxygen

two elements

## Column B choices:

*a halogen replaces a different halogen in an ionic compound*

*a compound breaks down into its elements or smaller compounds*

*an ionic compound dissolves in water, breaking into its **charged ions***

*a metal replaces a different metal in an ionic compound*

*the organic compound burns with oxygen to produce carbon dioxide and water (and usually a lot of heat!)*

*the elements combine into a compound*

*The cations (metals) switch places (or the anions, if you want to see it that way :) A ppt forms from one or both of the new combinations.*

# SIX TYPES OF REACTIONS

Name: \_\_\_\_\_

Type of Reaction	A. The reactants are.....	B. This is what happens:
Synthesis		
Decomposition		
Dissociation		
Combustion		
metallic Single Replacement		
halogen Single Replacement		
Double Replacement		