Chemical Reaction Types Notes Sheet

# **A. What is a chemical reaction?**

## Find this reaction:

## Na2SO4 + CaCl2 🡪  CaSO4 + 2 NaCl

## Now, label the things we know (or should know anyway):

## Circle the subscripts; describe how many of each atom you have using subscripts

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| **Atom (Chemical Symbol as it appears on the periodic table)** | **TOTAL number of atoms for each element** |
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## List **AND NAME** the chemical formulas below:

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| **Chemical Formula** | **Compound Name** |
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## Identify the Cations and Anions in each compound:

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| --- | --- | --- | --- |
| Compound | Cation | Anion | Polyatomic ion (if any) |
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# **B. What don’t we know about chemical reactions?**

## Now, find the chemical reaction:

## **Ca(s) + 2H2O(aq) 🡪 Ca(OH)2(aq) + H2(g)**

## Discuss with your group (3 minutes):

## What do the big numbers **(coefficients)** in front of the compounds mean?

## How do you think **states of matter** are represented in chemical reactions?

## Which side of the arrow would we find **reactants**? Which side of the arrow would we find **products**?

## What do we call elements that bond with themselves and are found in pairs?

# **C. Group these reactions into 5 different groups**

## HINT: All reactions in the same group have similar patterns on the reactant and product side. Try to focus on how elements/atoms/polyatomics are “moving” in the reaction.

## RULES:

## You cannot simply say these all have Oxygen in them. Be specific! Ex: All of these reactions have two reactants (one of them is oxygen) and one product with oxygen.

## You cannot use the coefficients, subscripts, how the paper was cut, or states of matter as part of your criteria

Some questions to help you:

1. Are there any reactions that contain products that are exactly the same? Is O2 a reactant for any of the reactions in this same group that has exactly the same products?
2. How many reactants are there? How many products?
3. How are the reactants rearranged to form the products?
4. Are both reactants compounds?

D. Once, Ms. Tasneem has verified your reaction groups, please copy them in the tables below **AND FILL OUT ONLY YOUR REASONING FOR PUTTING THEM IN THESE GROUPS. We will fill out the last two boxes next class:**

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| Reasons for grouping these together: |
| In general the reaction is as follows: |
| Reaction Type Name:  |

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