## Oct 2, 2019

**Chapter 6: Chemical Reactions** 

### Types of Chemical Equations:

- Word vs Chemical

Graphite can be transformed into Up diamond by applying a temperature of °C.

## **Chemical Reactions**

#### What is a chemical reaction?

- change that takes place when a substance(s) (reactants) change into one or more new substances (products).
- Each individual substance's chemical formula is separated from others by a plus sign.
- the reactants are separated from the products by an arrow \_\_\_\_\_ (read aloud as yields)

#### What is a chemical equation?

 a written representation of a chemical reaction using chemical formulas for reactant and products

$$HCI + NaOH \longrightarrow NaCI + H_2O$$
"reactants" "products"
(starting materials) (finishing materials)

#### What is a word equation?

 one way of representing a chemical equation using the names of reactants and products instead of chemical formulas

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hydrochloric acid + sodium hydroxide — sodium chloride + water

"reactants" "products"

(starting materials) (finishing materials)
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#### **Examples:**

Write the word and chemical equation to represent the following:

a) when zinc metal reacts with hydrochloric acid, hydrogen gas and zinc chloride are formed.

zinc + hydrochloric acid 
$$\longrightarrow$$
 hydrogen + zinc chloride Zn+ HCl  $\Rightarrow$  H<sub>2</sub> + ZnCl<sub>2</sub>

b) when dissolved calcium chloride reacts with dissolved magnesium phosphate, magnesium chloride and calcium phosphate are made.

 $C_{4}^{2+}C_{1}^{1-} + M_{3}^{2+}PO_{4}^{3-} \longrightarrow M_{3}^{2+}C_{1}^{1-}C_{4}^{2+}PO_{4}^{1} \longrightarrow M_{5}^{2}C_{1}^{1-}C_{5}^{2+}PO_{4}^{1}$ 

# Word Equations WS