**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_\_**

Chapter 6-Guided Notes

Chemical Reactions!

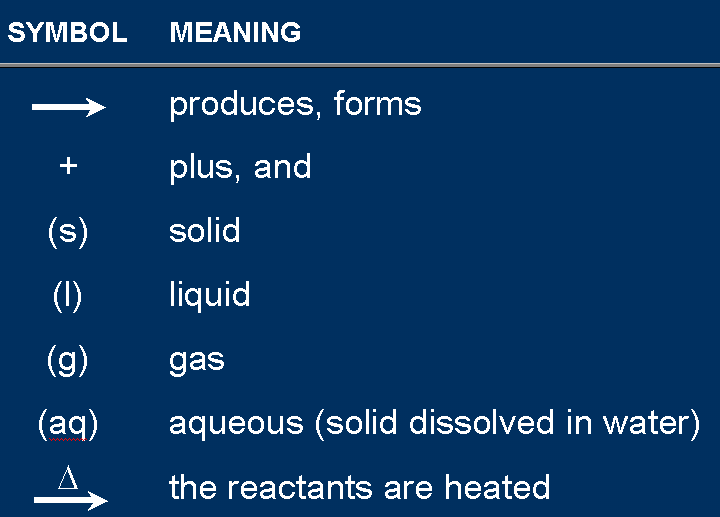
Signs of a Chemical Reaction

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Law of Conservation of Mass

* \_\_\_\_\_\_\_\_\_\_\_\_ is neither \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a chemical reaction
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Atoms can only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Draw the picture on the slide below:

Chemical Equations

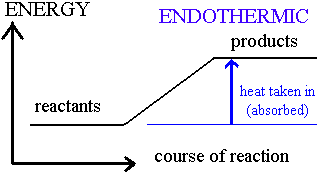
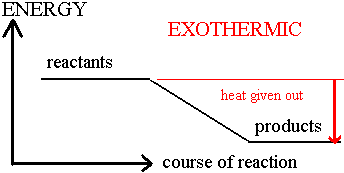


Energy and Reactions

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ must be \_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_ bonds
* Energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_when bonds are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* This energy can be in the form of \_\_\_\_\_\_\_\_\_\_\_\_ as well as other things like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_energy: the energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_when a chemical compound \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to produce a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Endothermic vs Exothermic

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-a chemical reaction that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_energy is needed to \_\_\_\_\_\_\_\_\_\_\_\_ the bonds in the \_\_\_\_\_\_\_\_\_\_\_\_ than is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by forming bonds in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Examples:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-a chemical reaction that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_is given off in the reaction as a \_\_\_\_\_\_\_\_\_\_\_\_\_; heat is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the surroundings
  + \_\_\_\_\_\_\_\_\_\_\_\_ energy is \_\_\_\_\_\_\_\_\_\_\_\_\_ by forming products than is needed to \_\_\_\_\_\_\_\_\_\_\_\_\_ the bonds of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Reaction Profiles:



Types of Chemical Reactions

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Types:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Example:

General formula:

* A &B can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A & B \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Another example:

Types:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Example:

General formula:

* Kind of like the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Start with only \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and break down into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ parts
* If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(two things making it up), it breaks down into \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Others are harder to tell and you DON’T need to worry about these!!!

Types:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Example:

General Formula:

* \_\_\_\_\_\_\_\_\_ element \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a compound
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ element will take the place of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ one (ACTIVITY SERIES-DO NOT NEED TO KNOW THIS!)
* When have a alkali metal with water, write like this:
* This will make it look like other single replacement reactions and will help you out! Just remember diatomics (H will have to be H2)

Types:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Example:

General formula:

* Ions in two compounds \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_ of one compound combines with \_\_\_\_\_\_\_\_\_\_\_\_ of the other
* Occurs when a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ forms
* Precipitate-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that comes out of solution during this type of reaction

Types:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* The \_\_\_\_\_\_\_\_\_\_\_\_of any substance in \_\_\_\_\_\_\_\_\_ to produce \_\_\_\_\_\_\_\_\_\_\_
* Substance A is usually an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (made of C & H)
* Must have \_\_\_\_\_\_\_\_\_\_\_\_\_\_ for \_\_\_\_\_\_\_\_\_ combustion (we will just assume everything is complete combustion)

Example:

When A is organic:

General:

Writing and Balancing Chemical Reactions

Steps

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Helpful Tips!

* Balance \_\_\_\_\_\_\_\_\_\_\_ element at a time
* Update \_\_\_\_\_\_\_ atoms counts after adding a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* If an element appears more than once per side, balance it \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Balance polyatomic ions as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Balancing Example: Aluminum and Copper (II) chloride react to form copper and aluminum chloride.

Writing Equations:

Describing Equations:

* Individual atom =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Covalent substance = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Ionic substance =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3CO2 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2Mg 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4 MgO 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describing Equations:

Zn(s) + 2HCl (aq) 🡪 ZnCl2(aq) + H2(g)

Law of Definite Proportions:

* A compound \_\_\_\_\_\_\_\_\_\_\_\_\_ contains the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the same proportions, regardless of how the compound is made or how much of the compound is formed

Mole Ratios

* The \_\_\_\_\_\_\_\_\_\_\_\_ amount of moles of substance required to produce a given amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a chemical reaction
* Look at this chemical equation:
* The mole ration from the BALANCED REACTION is \_\_\_\_\_\_\_\_ of H2O : \_\_\_\_\_\_ moles H2 : \_\_\_\_\_\_\_\_\_\_\_\_\_\_ O2
* Example: Determine the mass of hydrogen gas (H2) and oxygen gas (O2) produced by 4 moles of water in the following chemical reaction

H2O🡪 H2 + O2

Rates of Change

Factors affection reaction rate

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-how \_\_\_\_\_\_\_\_ the reaction goes from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Factors affecting reaction rate:
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Temperature

* Most reactions go \_\_\_\_\_\_\_\_\_\_\_ at a \_\_\_\_\_\_\_\_\_\_\_\_ temperature
* This is because of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Higher temperature means molecules going \_\_\_\_\_\_\_\_, more likely to \_\_\_\_\_\_\_

Surface Area

* A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reactions
* Solids that have a \_\_\_\_\_\_\_\_\_\_\_\_ surface area react more \_\_\_\_\_\_\_\_\_\_\_\_ because more particles come in contact with the other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Concentration

* Most reactions go \_\_\_\_\_\_\_\_\_\_\_\_\_\_ at a \_\_\_\_\_\_\_\_\_\_\_\_\_ concentration

Pressure

* Reactions go \_\_\_\_\_\_\_\_\_\_\_\_ at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pressure
* Gases are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at higher pressures because it has been \_\_\_\_\_\_\_\_\_\_\_\_\_\_ into a \_\_\_\_\_\_\_\_\_\_\_ volume and have \_\_\_\_\_\_\_\_\_\_\_\_\_ collisions

Size & Shape

* Massive, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Because of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Bigger molecues move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Catalyst

* A substance that changes the \_\_\_\_\_\_\_\_\_\_\_ of a chemical reaction without being \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Does not play a role in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Catalysts-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_