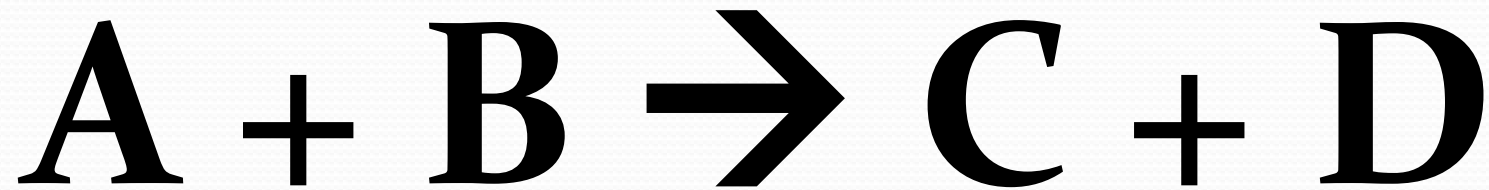


# Balancing Chemical Equations



# The Basics



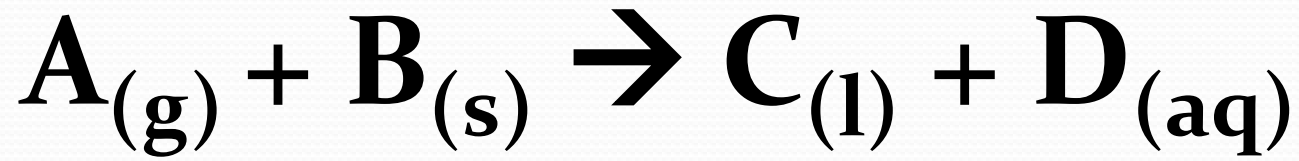
**Reactants**

(starting materials)

**Products**

(ending materials)

# Phases



**g = gas**

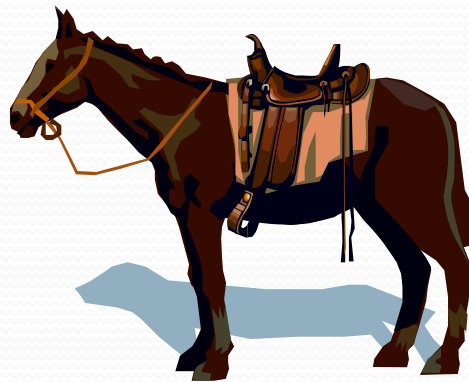
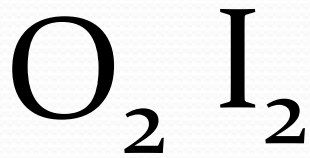
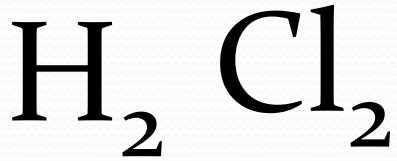
**s = solid**

**l = liquid**

**aq = “aqueous” – ions in water**

# Diatomic Gases

Horses Need  
Oats For Clear  
Brown “Eyes”



# Writing Equations

## Word Equations

Written with the names of the compounds

*hydrogen gas and chlorine gas  
combine to form hydrogen chloride gas*

## Skeleton Equations

Written with formulas



# Balancing Equations

## Law of Conservation of Matter

**Matter is not created or destroyed**

# of atoms for each element before and after the reaction must be equal.



- **Reactants:** 2 H & 2 Cl
- **Products** 2 H & 2 Cl
- The two sides are balanced!

# Rules for Balancing

- 1) Write the skeleton equation
- 2) Count atoms on each side of arrow  
(*look at the subscripts & the coefficients!*)
- 3) Change **coefficients** so the atoms are balanced; **NEVER** change subscripts!
- 4) Make sure coefficients are in lowest ratio possible
- 5) Check your work!

**USE PENCIL!!!**



# **Practice Problems (on handout)**