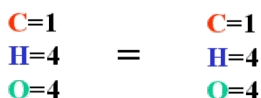
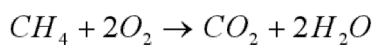
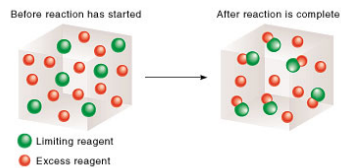
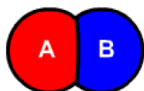
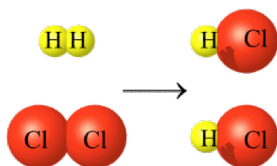


REACTIONS / MOLES / STOICHIOMETRY



Chemical Reaction

Atoms are REARRANGED to form a different substance



- Changes the way atoms are joined together

- Atoms **CANNOT** be created or destroyed!



Indicators of a Reaction

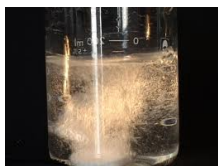
1) TEMPERATURE CHANGE



2) COLOR CHANGE



3) GAS FORMATION



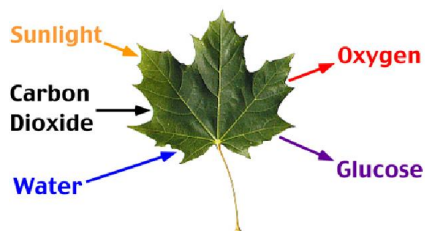
4) PRECIPITATE



Chemical Equation

Representation of a chemical reaction

- **REACTANTS:** starting materials $2H_2 + O_2 \rightarrow 2H_2O$
 $\boxed{\quad\quad\quad}$ $\boxed{\quad\quad\quad}$
reactants *products*
- **PRODUCTS:** ending materials



REACTANTS → **PRODUCTS**

Symbols in Equations

+ separates the reactants or products

→ separates reactants from products

⇌ indicates a **reversible** reaction

(s) solid

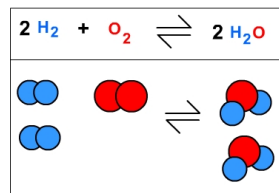
(g) gas

(l) liquid

(aq) aqueous or **water** solution

Δ indicates **heat** is supplied

CATALYST: speeds up reaction but is NOT a reactant or product



Rules for Writing Equations

- 1) Reactants must be on the **LEFT**
- 2) Products must be on the **RIGHT**
- 3) Correct formulas (and symbols) should be written
- 4) An arrow should separate the products from reactants

