Definition

• Represents, with symbols and formulas, the identities and relative amounts of reactants and products in a chemical reaction.

Characteristics

- Summarizes a chemical reaction.
- Requirements for an equation:
 - Must represent known facts/identities of chemicals.
 - Must contain correct formulas of reactants and products.
 - Law of Conservation of Mass must be satisfied.
 - Balanced using a coefficient.

Chemical Equations

Non-Examples

Examples Types of Equations:

 Word Equations: Reactants and products represented as words.

$$\circ$$
 Ex.)
methane + Oxygen \rightarrow Carbon
dioxide + water

• Formula Equation: Reactants and procducts represented by their symbols and formulas.

○ Ex.) (Not Balanced)

$$CH_4 + O_2 \rightarrow CO_2 + H_2O$$

Balanced:

$$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$$

• Important Symbols:

Symbol	Meaning
\rightarrow	"Yields" results
\leftrightarrow	Reversible reaction
(s)	Chemical is a solid
(1)	Liquid
(aq)	Dissolved in water
(g)	Gas
	Reactants heated
\longrightarrow MnO_2 \longrightarrow	Catalyst present