

## The Chemical Reaction

Reactants combine or change to form products



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Chemical A    react with    Chemical B    to form    Chemical C

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### Law of Conservation of Mass

- Mass of the products must equal the mass of the reactants
- Number of atoms of each element must be the same before and after the reaction
- A balanced chemical equation is written when Coefficients are used to maintain the correct number of atoms

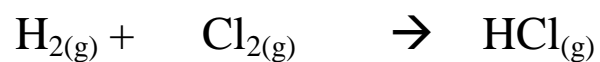
### Steps to balancing equations

#### 1. Word Equation

Hydrogen + Chlorine  $\rightarrow$  hydrogen monochloride

- Remember some elements are **DIATOMIC**
- H, O, F, Br, I, N, Cl are actually H<sub>2</sub>, O<sub>2</sub>, F<sub>2</sub>, Br<sub>2</sub>, I<sub>2</sub>, N<sub>2</sub>, Cl<sub>2</sub>

## 2. Skeleton Equation



- this is correctly written but the atoms of each element before the reaction not equal to the number of atoms after the reaction

## 3. Balanced Chemical Equation

- only coefficients can be added to balance the number of atoms

