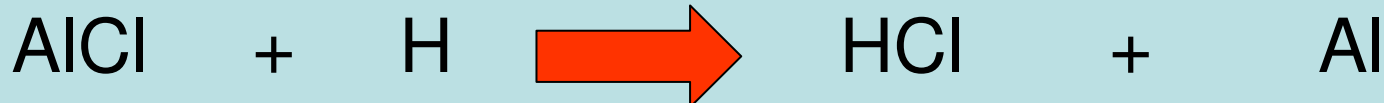


# Steps to balancing Chemical equations

1. Make sure all compounds and elements on the reactant and product sides of the equation are written correctly.

Example:

**Wrong:**



**Right:**



2. Check for diatomic molecules. They can not be written as a single element they must have a 2 subscript.

Diatomic molecules include: Chlorine  $\text{Cl}_2$ , Bromine  $\text{Br}_2$ , Fluorine  $\text{F}_2$ , Iodine  $\text{I}_2$ , Oxygen  $\text{O}_2$ , Nitrogen  $\text{N}_2$ , and Hydrogen  $\text{H}_2$

Right:



Hydrogen is a diatomic molecule and must have a 2 subscript.

3. List each element on each side of the arrow



Al = 1 atom

Cl = 3 atoms

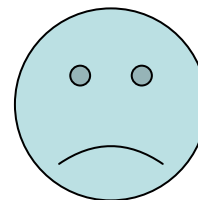
H = 2 atoms

Al = 1 atom

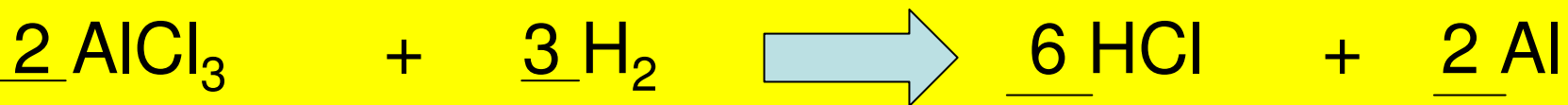
Cl = 1 atoms

H = 1 atoms

Unbalanced



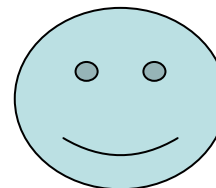
4. Add coefficients to balance the equation so you have the same number of atoms of each element on both the reactant and product side of the equation.



Al = ~~1~~ 2 atom  
Cl = ~~3~~ 6 atoms  
H = ~~2~~ 6 atoms

Al = ~~1~~ 2 atom  
Cl = ~~1~~ 6 atoms  
H = ~~1~~ 6 atoms

Balanced



Coefficients multiply all the atoms of the element or compound they are in front of

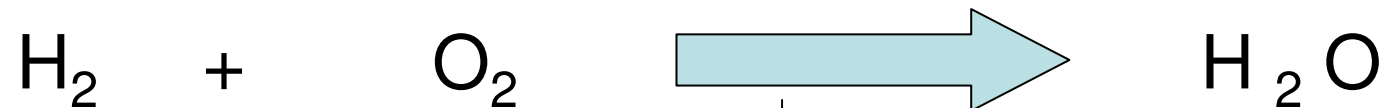
# *Remember*

**Never** change a  
formula to balance  
an equation.



Try this one:

Hydrogen plus oxygen yields water



H =

O =

H =

O =

Reactant

Product