Balancing Chemical Equation

Oxygen + Hydrogen → Water

$O_2 + 2H_2 \rightarrow 2H_2O$

	Reactant side		*Product side*	
# of atoms	O	H	O	H
	1X2=2	2X2=4	2X1=2	2X2=4

- Now it is balanced.

MORE EXAMPLES:

- __Ca + __O_2 → __CaO_2
- __ N_2 + __ H_2 → __ NH_3
- __ Cu_2O + __ C → __ Cu + __ CO_2

Balancing equations Practice

Are the following chemical equations balanced? Show your work by counting up atoms of each element on reactant and product side.

* extra credit for correctly balancing the unbalanced ones!!

$C_2H_4 + 2H_2 \rightarrow C_2H_6$

$3Fe + 2H_2O \rightarrow Fe_3O_4 + 2H_2$

$3Na + O_2 \rightarrow 2Na_2O$

$C_2H_6 + 3O_2 \rightarrow 2CO_2 + 2H_2O$

$Na_2SO_4 + CaCl_2 \rightarrow CaSO_4 + NaCl$

Notes: Chemical Equations

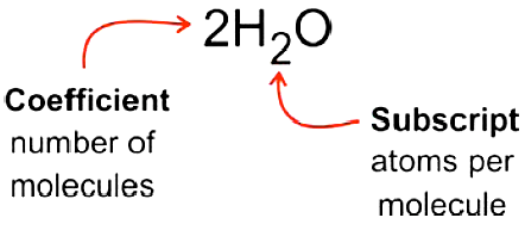
- A **chemical equation** is an abbreviated way to show the exact numbers of atoms and compounds in a chemical reaction.
- The arrow shows the direction the reaction goes, from reactants to products.

Oxygen + Hydrogen → Water

$O_2 + H_2 \rightarrow H_2O$

Reactants → **Products**

- Since there is one more oxygen atom on the reactant side than there is on the product side, the reaction equation is not balanced.



- Total # of each atom = CoefficientXSubscript
  - Total # of H atoms in this molecule: 2X2 = 4
  - Total # of O atoms in this molecule: 2X1 = 2