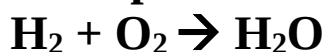


Balancing Equations Notes:

Chemical equations **must** be balanced on both sides according to the Law of Conservation of Mass, which says that matter cannot be created or destroyed. Therefore, atoms that are present on one side of the equation must be present on the other side as well.

Example:



Reactant Product

This equation is unbalanced. Count your atoms on each side!

Reactant side (left):

H = 2

O = 2

Product side (right):

H = 2

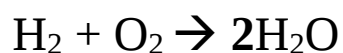
O = 1

*To balance an equation, you can ONLY change the **coefficient** (the big number) at the front of the compound!

We can add a coefficient of **2** in front of the H_2O to get 2 O's.
It will look like this $2\text{H}_2\text{O}$

The coefficient gets multiplied with the subscripts so then we have 4 hydrogens.

Let's recount our atoms again!



Reactant side:

$$\text{H} = 2$$

$$\text{O} = 2$$

Product side:

$$\text{H} = 4$$

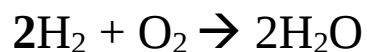
$$\text{O} = 2$$

The equation is still unbalanced. Remember we can ONLY change the coefficient.

How about add a coefficient of **2** in front of the H_2 .

The coefficient gets multiplied with the subscripts so you have 4 hydrogens.

Let's recount our atoms again!



Reactant side:

$$\text{H} = 4$$

$$\text{O} = 2$$

Product side:

$$\text{H} = 4$$

$$\text{O} = 2$$

The new balanced equation: $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$

