

# CHEMISTRY DAILY PLAN

**Class:**

**Date:**

**Subject:** *Balancing Chemical Equations*

**Time:**

Balancing the equation is the putting proper coefficients in front of the molecules and by that way getting equal number of the same atom in reacting parts and products part.

Let us balance the equation of;  $C_2H_4 + O_2 \rightarrow CO_2 + H_2O$

- In an equation write 1 as a coefficient for the most complex substance. (many atoms)
- 1/2, 3/2, 5/4... only can be used for elements which are found molecular structure. Like  $O_2$ ,  $N_2$ ,  $H_2$ ,  $Cl_2$ ,  $P_4$ ...  
Not like  $H_2O$ ,  $NH_3$ ...



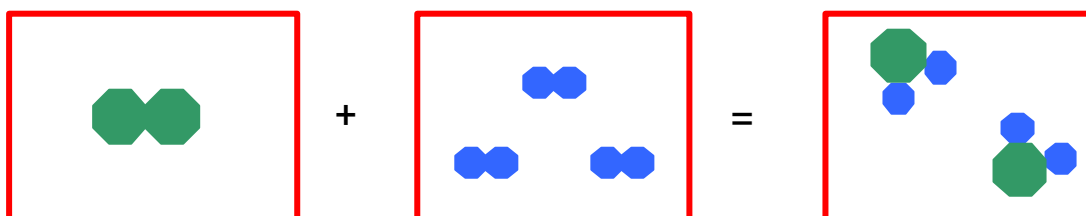
**Example 1:** Balance the following reactions.

- $H_2SO_4 + Al(OH)_3 \Rightarrow Al_2(SO_4)_3 + H_2O$
- $Fe_2O_3 + HCl \Rightarrow FeCl_3 + H_2O$
- $C_3H_7OH + O_2 \Rightarrow CO_2 + H_2O$

**Example 2:** If the following reactions are balanced. Determine the formula of X?

- $2X + 5/2 O_2 \Rightarrow 2NO + 3H_2O$
- $10HNO_3 + 4Zn \Rightarrow NH_4NO_3 + 3H_2O + 4X$
- $P_2O_5 + 3H_2O \Rightarrow 2X$

## INTERPRETATION OF COEFFICIENTS OF CHEMICAL EQUATION



**$N_2$**   
1 molecule  
2 molecules  
10 molecules  
1 million

**$3H_2$**   
3 molecules  
6 molecules  
30 molecules  
3 million

**$2NH_3$**   
2 molecules  
4 molecules  
20 molecules  
2 million

**n**  
1 mol  
10 mol

**3n**  
3 mol  
30 mol

**2n**  
2 mol  
20 mol

The substance that contains  $6.02 \times 10^{23}$  particles is called one mole.

**Mass**  
28 g  
280 g

6 g  
60 g

34 g  
340 g

The mass of one mole of atom is called atomic weight.

**At STP (Standard Temperature and Pressure) for only gases.**

1 volume  
10 volume

3 volume  
30 volume

2 volume  
20 volume