

BALANCING EQUATIONS WITH MOLECULAR MODELS LAB**LAW OF CONSERVATION OF MATTER:**

- ATOMS ARE NEITHER CREATED NOR DESTROYED DURING A CHEMICAL REACTION.
- The bonds in reactant molecules break and these atoms rearrange to make new bonds with different atoms resulting in a new compound or compounds.

For each of the chemical equations written below, you will perform the following tasks:

1. Using the molecular model kit, build the reactants (Use color guide to figure out which spheres to use). Ensure all holes are filled by bonds.
2. Draw the models of the reactants
3. Use your reactants to build the products. All atoms of the reactant should be used to build the models of products. If you have any atoms of the reactants left, go back and adjust in such a way that none of the atoms are left over after you build the products. Ensure all holes are filled by bonds
4. Draw the model of the products
5. Write the correct coefficient in front of each product of the chemical equation.

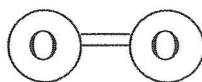
**EXAMPLE:**

## REACTANTS

The coefficient of 2 for H<sub>2</sub> implies that 2 molecules of H<sub>2</sub> are needed to react with 1 molecule of O<sub>2</sub>.



No coefficient for O<sub>2</sub> implies that the Oxygen has a coefficient of 1

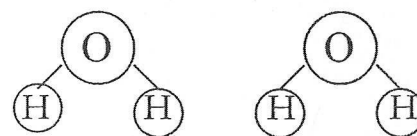


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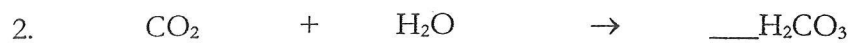


## PRODUCT

2 is the coefficient for H<sub>2</sub>O. It implies that 2 molecules of H<sub>2</sub>O are produced when 2 molecules of H<sub>2</sub> combines with 1 molecule of O<sub>2</sub>.

UNBALANCED CHEMICAL EQUATIONS:

Draw:



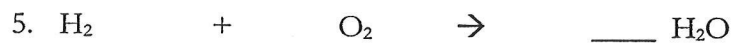
Draw



Draw:



Draw:



Draw

## COLOR GUIDE FOR MOLECULAR MODEL KIT

Black – Carbon (C)

Blue – Nitrogen (N)

Yellow – Hydrogen (H)

Purple – Aluminum (Al)

Green – Chlorine (Cl)

Orange – Sodium (Na)

Red – Oxygen (O)