

ACTIVITY 1

1. How would you define a chemical reaction?

Hint: reactants, products, bonds, rearranged, atoms, molecules, new compounds

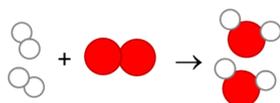
A chemical reaction is a rearrangement of atoms in which one or more compounds are changed into new compounds. The bonds between the atoms in the reactants break and the atoms become rearranged. New compounds are formed and these are referred to as the products

2. State the law of conservation of mass.

The law of conservation of mass is that, in a closed or isolated system, matter cannot be created or destroyed. It can change from one form to another form but mass is conserved.

3. What is the difference between a picture equation, word equation and chemical equation?

PICTURE:



WORD

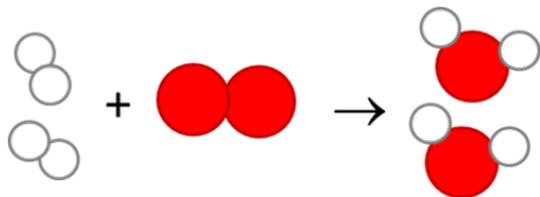
Hydrogen + oxygen → water

CHEMICAL



4. Study the picture equation below. It shows how hydrogen combines chemically with oxygen to form water. Can you write

- the word equation and
- the chemical equation?



a) WORD

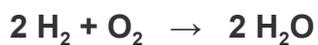
Hydrogen + oxygen → water

b) CHEMICAL



ACTIVITY 2

Study the chemical equation below



1. Name the reactants in this equation **H₂ + O₂** (hydrogen and oxygen)
2. Name the products in this equation **H₂O** (water)
3. Is this a macroscopic, submicroscopic or symbolic representation of a chemical reaction? **symbolic**
4. Using **2 H₂O** explain your understanding of the use coefficient and a subscript.

Numbers *in front of* chemical formulae in the equation. They are called **coefficients**.
(**molecules**)

2 molecules of hydrogen chemically combine / react with one molecule of oxygen and form 2 molecules of water

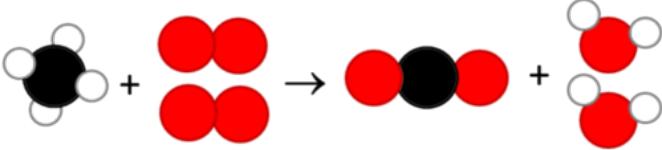
Smaller numbers used *inside and below* the chemical formulae. These are called **subscripts**. (**atoms**)

1 molecule of hydrogen is made up of 2 atoms

1 molecule of oxygen is made up of 2 atoms

1 molecule of water is made up of 2 hydrogen atoms and 1 oxygen atom

ACTIVITY 3

EQUATION	TYPE OF EQUATION
	<p>PICTURE</p>
<p>carbon dioxide + water → glucose + oxygen</p>	<p>WORD</p>
	<p>PICTURE</p>
<p>$\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$</p>	<p>CHEMICAL</p>
	<p>PICTURE</p>
<p>$\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$</p>	<p>CHEMICAL</p>