

## Word Equations

Equations are used to show how chemical reactions occur. An equation has products, reactants, and an arrow. Nothing new is created and nothing disappears in a reaction, elements just get moved around.

- The **reactants** are on the left-hand side of the arrow and **react together**.
- The **products** are on the right-hand side of the arrow and are **formed from the reactants**.

## Examples

Acid	+	Alkali	->	Salt + Water
Metal	+	Acid	->	Salt + Hydrogen + Water
Acid	+	Carbonate	->	Salt + Carbon Dioxide + Water
Magnesium	+	Oxygen	->	Magnesium Oxide
Hydrogen	+	Oxygen	->	Water
Water			->	Hydrogen + Oxygen
Copper Carbonate	+	Hydrochloric Acid	->	Copper Chloride + Carbon Dioxide + Water
Hydrochloric Acid	+	Sodium Hydroxide	->	Sodium Chloride + Water

## Common Reactions

There are some chemical reactions which are very common. It is important to be able to recognise and predict these reactions.

1	Acid and Alkali	Produces water
2	Acid and Metal	Produces salt, hydrogen, and water
3	Acid and Carbonate	Produces salt, carbon dioxide, and water
4	Decomposition	Breakdown of a compound into elements
5	Combustion	Means reacting with oxygen; or burning

## Questions

1. Highlight the example reactions. Reactants with one colour and the products another colour.
2. Write the reaction-type number next to each example reaction.
3. How would you test an unknown reaction for Hydrogen?
4. How would you test an unknown reaction for Carbon Dioxide?
5. If an unknown reaction produces water then what type of reaction could it be?
6. If the same reaction also produces carbon dioxide then what type of reaction could it be?
7. When you burn wood on a fire what type of reaction is occurring?
8. Can you see a rule for determining what reactant elements are in the salt products?
9. Write the reaction-type number next to these reactions. Then try to determine the **products**.

Sodium + Oxygen ->

Zinc + Sulfuric Acid -> + + Water

Magnesium + Sulfuric Acid -> + + Water

Hydrogen Chloride -> +

Copper Carbonate + Sulfuric Acid -> + + Water

