

What you should already know...

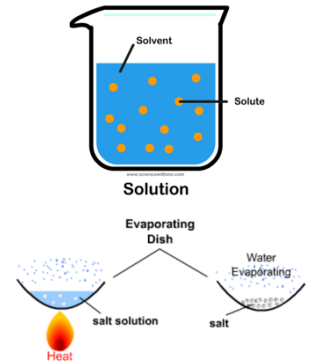
- Materials are substances that items are made from.
- The properties of materials make them useful for different **purposes**.
- Materials have more than one **property** and can be natural or synthetic. Properties can include hardness, solubility, flexibility, conduction and magnetism.
- There are three main **states of matter**: solids - liquids - gases
- The state of matter of a material can change through processes such as **freezing** and **boiling** (energy).



Solutions and Separation

A solution is a specific type of mixture where one substance is dissolved into another

- A **solvent** is a substance that dissolves a solid, liquid or gaseous solute
- A **solute** is the substance distributed in the solvent. When it dissolves, it looks as though it has disappeared but in fact it has been broken down to become part of the liquid.
- Some **mixtures** and **solutions** can be separated - e.g. through processes such as sieving or filtering. Salt and water can be separated though evaporation.

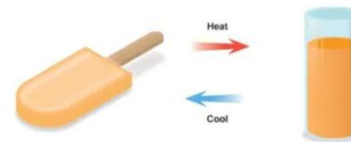


Grouping Materials by Properties

Property	YES	NO
Electrical Conductor	copper, aluminium, water, silver and gold	glass, wood, plastic, rubber, oil and diamond
Magnetic	steel, nickel, iron, cobalt and platinum	wood, plastic, rubber, wool and glass
Transparent	glass, water and clear plastic	wood, rubber, coloured plastic, iron, oil and copper
Waterproof	plastic, rubber, metal and glass	paper, wool, sponge and fabric

Reversible and Irreversible Changes

REVERSIBLE



- There are many ways in which materials can be changed for example through heating and cooling.
- Some changes can be reversed (the material can be returned to its previous form). These are known as reversible changes.

IRREVERSIBLE



- Other changes are irreversible. This means that changes cannot be undone with examples of this being such as burning, cooking or baking.
- Irreversible changes will often include the creation of a new material (e.g. cement) which cannot be reversed.

