

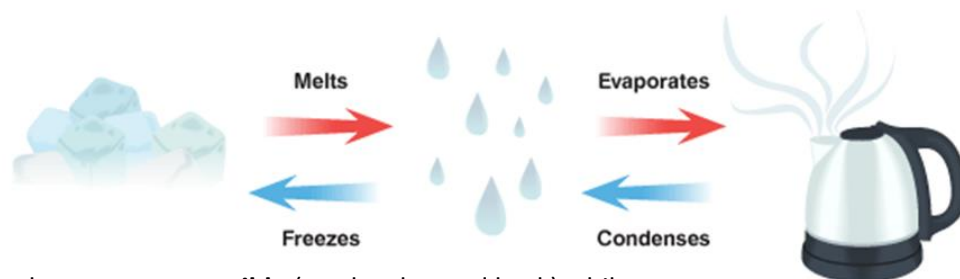
Science Knowledge Organiser Y5/6 – Materials



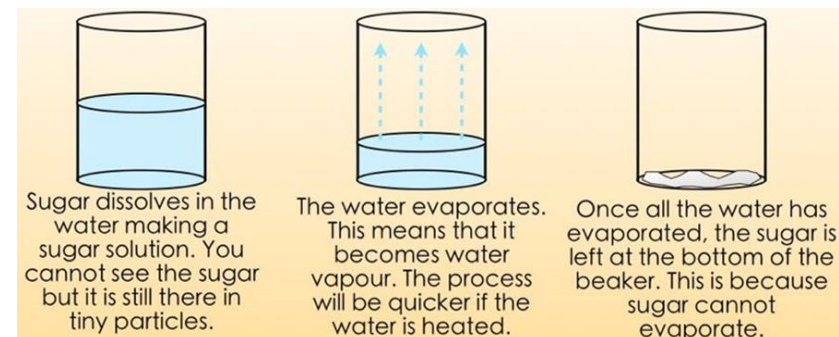
Key Vocabulary	
Absorbent	Able to soak up liquid easily
Conductor	A material or device which allows heat or electricity to carry through
Dissolve	When something solid mixes with a liquid and becomes part of the liquid
Evaporation	The process of turning from liquid to vapour
Filtering	When a solid is removed from a liquid
Gas	An air-like fluid substance which expands freely to fill any space available
Insoluble	Does not dissolve in a liquid
Insulator	A substance which does not readily allow the passage of heat or sound
Irreversible	Cannot be reversed back to its original state
Liquid	A substance that flows freely but can be measured by volume e.g. water or oil
Material	The matter from which a thing is or can be made from
Opaque	Not able to be seen through, not transparent
Reversible	Able to be reversed back to its original state
Sieving	The process of separating solids or a solid from a liquid
Solid	Firm and stable in shape, not a liquid or fluid
Soluble	Able to be dissolved, especially in water
Solute	Something that is dissolved in liquid
Solution	A mixture where a solid has dissolved into a liquid
Solvent	A liquid in which a solute is dissolved
Thermal	Relating to heat
Transparent	Allows light to pass through so that objects behind can be seen

Materials can be **solids**, **liquids** or **gases**. In some solids the bonds between particles break when surrounded by a liquid; this allows the liquid to absorb the solid; when this happens, the solid is called a **solute**, the liquid is called a **solvent** and the result is a **solution**; when a solid does **dissolve** in a liquid it is described as being **soluble** in that solvent (e.g. sugar in water); when it cannot it is **insoluble** (e.g. sand in water).

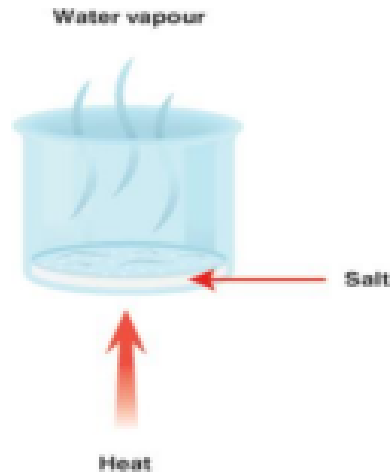
When sugar is mixed with water, it forms a **solution**. The sugar seems to disappear in the water. If the solution is boiled, the solid can be recovered. The water will **evaporate** into a **gas** and the solid will be left behind.



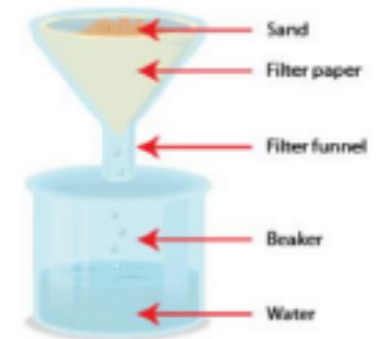
Some changes are **reversible** (can be changed back) whilst others are **irreversible** (cannot be reversed)



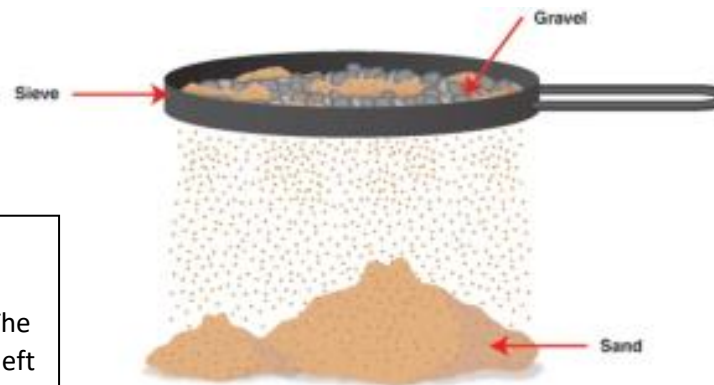
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An insoluble solid can be separated from a liquid when passed through a **filter**. The liquid can pass through the filter whilst the solid particles are trapped in the filter.



By **dissolving** salt in water we make a **solution**. The salt dissolves (seems to disappear) into the water. We can separate the salt from the water by boiling a solution. The water will **evaporate** until it is all gone. The salt will be left behind.



A mixture of different solid particles can be separated using a **sieve**.

Assessment

- To group every day materials according to their properties
- To plan an absorbency enquiry
- To carry out and evaluate an absorbency enquiry
- To revise the three states of matter
- To investigate solubility of materials
- To suggest how mixtures can be separated
- To carry out a solutions enquiry (dissolving or retrieving substances)
- To investigate thermal conductivity
- To separate materials using sieves
- To understand changes that are irreversible and why
- To discuss how new materials are formed

