St Sebastian's Primary School—Science

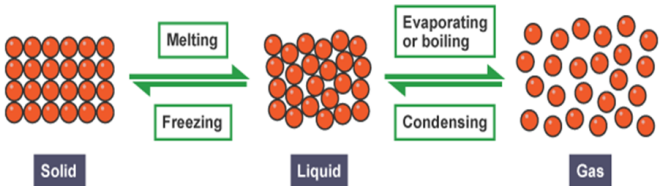
Topic: Properties & changes in materials - states of matter | Year 5 | **Strand:** Chemistry

What will I know by the end of the unit?

Materials

Materials can be sorted in a variety of ways based on their properties. The properties of materials can include transparency, flexibility and whether they are a conductor or insulator of heat and electricity.

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).



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

A new material is always formed after an irreversible change such as toast.

Mixtures

A **mixture** is created when two or more materials are combined and can be **separated** using methods such as **sieving, filtration** and **evaporation.**

Sometimes when a **solid (solute)** is mixed with a **liquid (solvent)** it will dissolve to form a **solution.**

The solid seems to disappear in the solution.

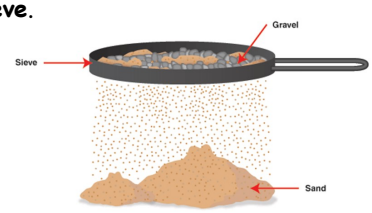
A **soluble** material can dissolve however an **insoluble** material cannot dissolve.

More will dissolve in a hot liquid rather than a cold liquid.

When no more solid can dissolve, the solution becomes

Sieving

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



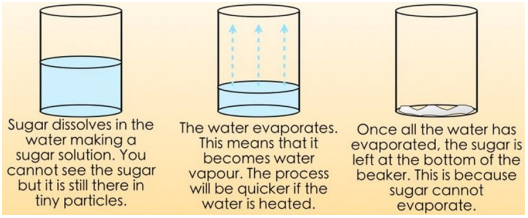
Filtering

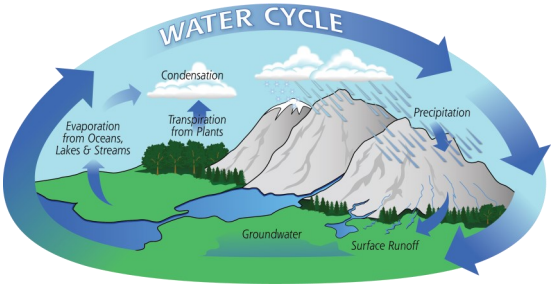
An insoluble solid can be separated from a liquid when passed through a **filter**. The liquid can pass through the filter whilst the solid particles are trapped in the filter.



Evaporating

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.





Vocabulary

Conductor	A material which allows heat or electricity through.
Crystallisation	A natural process separating a solid from a liquid or gas.
Dissolve	When something solid mixes with a liquid and becomes part of the liquid.
Evaporation	The process of turning from a liquid to a gas.
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 like water or oil.
Magnetism	Capable of being magnetised or attracted by a magnet.
Melting	Changing from a solid to a liquid due to heat.
Reversible	Able to be reversed back to its original state.
Saturated	When a substance cannot dissolve any more.
Sieving	The process of separating 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 in.
Thermal	Heat.

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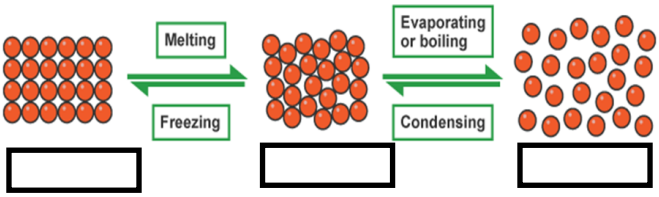
Topic: Properties & changes in materials - states of matter | Year 5 | **Strand:** Chemistry

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Materials can be _____ , _____or _____. In some _____ the bonds between particles break when surrounded by a _____; this allows the liquid to absorb the _____; when this happens, the solid is called a solute, the liquid is called a _____ and the result is a _____; 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).



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Mixtures

A _____is created when two or more materials are combined and can be _____ using methods such as _____, _____ and _____.

Sometimes when a _____ **(solute)** is mixed with a _____ **(solvent)** it will dissolve to form a _____.

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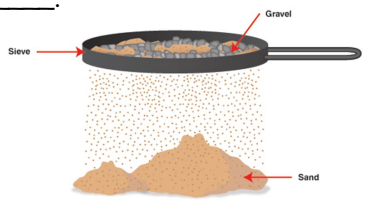
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Sieving

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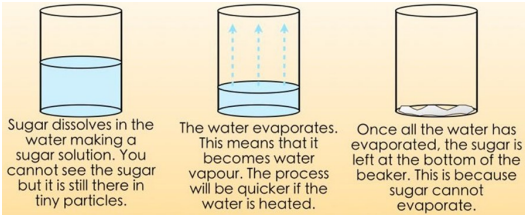
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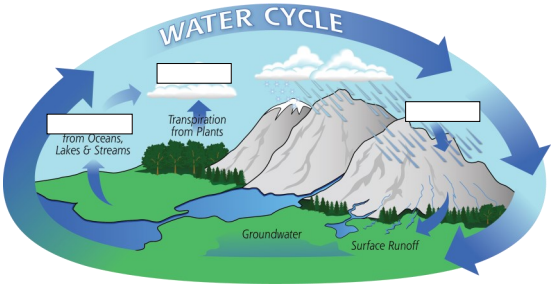
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	When something solid mixes with a liquid and becomes part of the liquid.
Evaporation	
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	Does not dissolve in a liquid.
	A substance which does not readily allow the passage of heat or sound.
Irreversible	

	A substance that flows freely like water or oil.
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