

Year 5 Knowledge Organiser – Mysterious materials

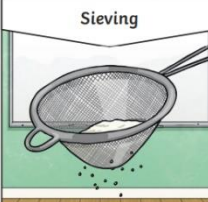

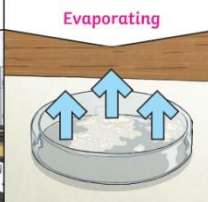
What is it made of?

Key vocabulary

Materials	The substance that something is made out of, e.g. wood, plastic, metal.
Transparency	A transparent object lets light through so the object can be looked through, for example glass or some plastics.
Solids	One of the three states of matter. Solid particles are very close together, meaning solids, such as wood and glass, hold their shape.
Liquids	This state of matter can flow and take the shape of the container because the particles are more loosely packed than solids and can move around each other. Examples of liquids include water and milk.
Gases	One of the three states of matter. Gas particles are further apart than solid or liquid particles and they are free to move around. A gas fills its container, taking both the shape and the volume of the container. Examples of gases are oxygen and helium.
Evaporation	When a liquid turns into a gas or vapour
Condensation	Small drops of water which form when water vapour or steam touches a cold surface, such as a window
Dissolving	The process when a substance is mixed with a liquid
Reversible	Possible to change or turn back.
Irreversible	Impossible to reverse, turn back, or change.
Soluble	Able to be dissolved

Key Knowledge



Reversible changes, such as mixing and dissolving **solids** and **liquids** together, can be reversed by:

Sieving 	Filtering 	Evaporating 
Smaller materials are able to fall through the holes in the sieve, separating them from larger particles.	The solid particles will get caught in the filter paper but the liquid will be able to get through.	The liquid changes into a gas , leaving the solid particles behind.


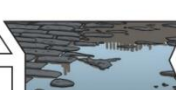


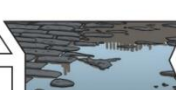

Irreversible Changes

Often result in a new product being made from the old material.

For example **burning wood produces ash**


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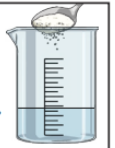
Changes of State

solid 	The solid melts . 
liquid 	The liquid freezes . 
The gas condenses . 	gas The liquid evaporates . 

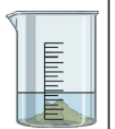
Dissolving

A solution is made when **solid** particles are mixed with **liquid** particles. **Materials** that will dissolve are known as soluble. **Materials** that won't dissolve are known as insoluble. A suspension is when the particles don't dissolve.

Sugar is a soluble **material**.



Sand is an insoluble **material**.



Key Knowledge

Different **materials** are used for particular jobs based on their properties: **electrical conductivity**, flexibility, hardness, insulators, magnetism, solubility, **thermal conductivity** & transparency



For example, glass is used for windows because it is hard and transparent. Oven gloves are made from a thermal insulator to keep the heat from burning your hand.



Materials can be grouped based on their properties using more complex vocabulary.

Magnetic 	Transparent 	Permeable 
Soluble 	Insoluble 	Impermeable 
		Flexible 