Science Knowledge Organiser

Properties and Changes of Materials

Key Vocabulary	
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 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. Examples of
	gases are oxygen and helium.
melting	The process of heating a solid until it becomes a
	liquid.
freezing	When a liquid cools and turns into a solid.
evaporating	When a liquid turns into gas or vapour.
condensing	When a gas, such as water vapour, cools and
	turns into a liquid.

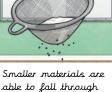
Reversible changes, such as mixing and dissolving solids and liquids, can be reversed by:

Sieving

Filtering

Evaporating





the holes in a sieve,

larger particles.

separating them from

Smaller materials are The solid particles will get caught in the into a gas, leaving filter paper but the liquid will be able to behind. get through.



The liquid changes the solid particles

The Three States of Matter		
Solid	Solid particles	
Liquid	Liquid particles	
Gas	Gas particles	

Topic Links

Alchemy Island - reversible changes and classifying materials.

Sticky Knowledge

Build on knowledge from Year 4:

- Comparing and grouping materials based on their state of matter.
- Some materials can change state.
- Evaporation and condensation occur in the water cycle.

Leave Year 5 with the knowledge that:

- · Materials can be compared and grouped on the basis of their properties, including their hardness, solubility, transparency, conductivity and response to magnets.
- Materials can be separated through the use of filtering, sieving and evaporating.
- There are reversible and irreversible changes.