

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



Smaller materials are able to fall through the holes in a sieve, separating them from larger particles.

Filtering



The solid particles will get caught in the filter paper but the liquid will be able to get through.

Evaporating



The liquid changes into a gas, leaving the solid particles behind.

The Three States of Matter	
Solid	<p>Solid particles</p>
Liquid	<p>Liquid particles</p>
Gas	<p>Gas particles</p>

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.