

Year 5 Knowledge Organiser Science – Properties and Changes of Materials

Key Vocabulary

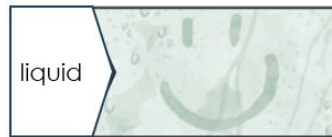
solids	Solid particles are very close together, meaning they hold their shape (wood, glass etc).
liquids	Liquid particles can move around each other. They can flow and take the shape of a container.
gases	Gas particles are further apart and are free to move around.
melting	The process of heating a solid until it changes into a liquid.
freezing	The process of cooling a liquid until it changes into a solid,.
evaporating	When a liquid turns into a gas or vapour.
condensing	When a gas, such as water vapour, cools and turns into a liquid.
conductor	A material that heat or electricity can easily travel through. Most metals are both types of conductors.
insulator	A material that does not let heat or electricity through. Wood and plastic are insulators.

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.



The solid **melts**.

The liquid **freezes**.



The liquid **evaporates**.

The gas **condenses**.



Key Knowledge

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

sieving



Smaller materials can fall through the holes in the 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.

evaporation



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

Key Knowledge

Irreversible changes

Irreversible changes often result in a new product being made from the old material. For example, burning wood produces ash. Mixing vinegar and milk makes casein plastic.

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.

Sugar is a soluble material.



Sand is an insoluble material.

