



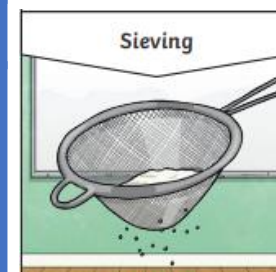
Science - Properties and Changes of Materials

Key Vocabulary

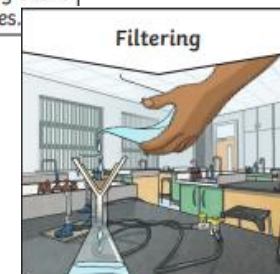
Materials	The substance that something is made out of e.g. wood.
Solids	One of the three states of matter. Solid particles are very close together, meaning solids hold their shape.
Liquids	This state of matter can flow and take the shape of a container because the particles are more loosely packed than solids and can move around each other.
Gases	This is the third state 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 changes into a liquid.
Freezing	When a liquid cools and turns 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 conductor is a material that heat or electricity can easily travel through. Most metals are both thermal conductors (they conduct heat) and electrical conductors (they conduct electricity).
Insulator	An insulator is a material that does not let heat or electricity travel through them. Wood and plastic are both thermal and electrical insulators.
Transparency	A transparent object lets light through so the object can be looked through, for example glass and some plastics.

Key Knowledge

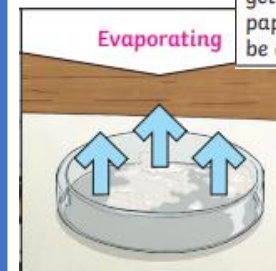
- Different **materials** are used for particular jobs based on their properties. For example, glass is used for windows because it is hard and **transparent**. Oven gloves are made from a thermal **insulator** to keep the heat from burning your hand.
- Reversible changes, such as mixing and dissolving **solids** and **liquids** together can be reversed by: sieving, filtering and **evaporating**.
- Irreversible changes often result in a new product being made from the old **materials** (reactants). For example, burning wood produces ash. Mixing vinegar and milk produces 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.
- A suspension is when the particles don't dissolve.
- Sugar is a soluble material.
- Sand is an insoluble material.



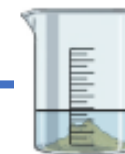
Smaller **materials** are able to fall through the holes in the sieve, separating them from larger particles.



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.



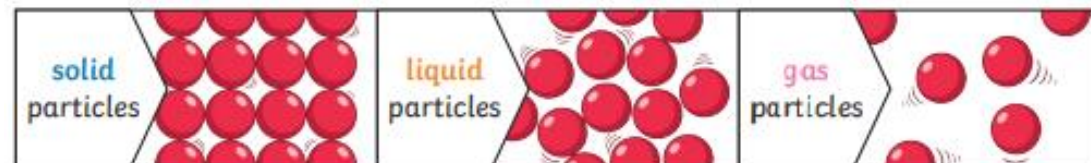
The **solid** melts.

The **liquid** freezes.



The **gas** condenses.

The **liquid** evaporates.



solid

liquid

liquid

gas

solid particles

liquid particles

gas particles