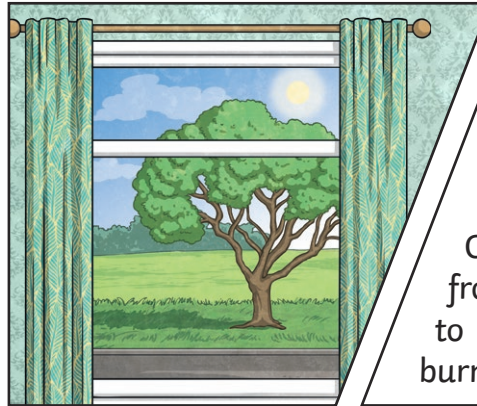


Key Vocabulary	
<b>materials</b>	The substance that something is made out of, e.g. wood, plastic, metal.
<b>solids</b>	One of the three states of matter. <b>Solid</b> particles are very close together, meaning <b>solids</b> , such as wood and glass, hold their shape.
<b>liquids</b>	This state of matter 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 <b>liquids</b> include water and milk.
<b>gases</b>	One of the three states of matter. <b>Gas</b> particles are further apart than <b>solid</b> or <b>liquid</b> particles and they are free to move around. Examples of <b>gases</b> are oxygen and helium.
<b>melting</b>	The process of heating a <b>solid</b> until it changes into a <b>liquid</b> .
<b>freezing</b>	When a <b>liquid</b> cools and turns into a <b>solid</b> .
<b>evaporating</b>	When a <b>liquid</b> turns into a <b>gas</b> or vapour.
<b>condensing</b>	When a <b>gas</b> , such as water vapour, cools and turns into a <b>liquid</b> .

**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.



**Changes of State**



**solid**

The **solid** melts.



**liquid**

The **liquid** freezes.



**liquid**

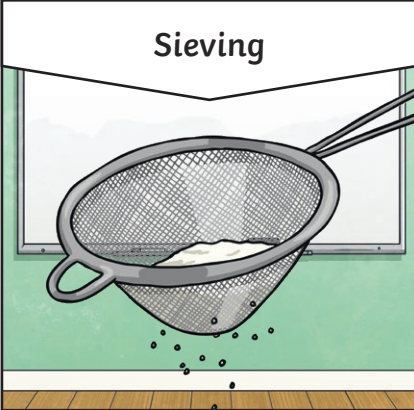
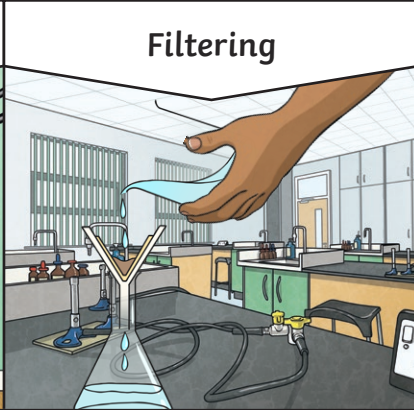
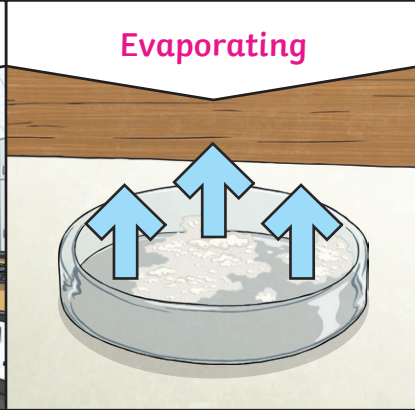
The **gas** condenses.



**gas**


The **liquid** evaporates.

Key Vocabulary	
<b>conductor</b>	A <b>conductor</b> is a material that heat or electricity can easily travel through. Most metals are both thermal <b>conductors</b> (they <b>conduct</b> heat) and electrical <b>conductors</b> (they <b>conduct</b> electricity).
<b>insulator</b>	An <b>insulator</b> is a material that does not let heat or electricity travel through them. Wood and plastic are both thermal and electrical <b>insulators</b> .
<b>transparency</b>	A <b>transparent</b> object lets light through so the object can be looked through, for example glass or some plastics.

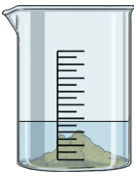
Key Knowledge		
Reversible changes, such as mixing and dissolving <b>solids</b> and <b>liquids</b> together, can be reversed by:		
<b>Sieving</b>	<b>Filtering</b>	<b>Evaporating</b>
		
Smaller <b>materials</b> are able to fall through the holes in the sieve, separating them from larger particles.	The <b>solid</b> particles will get caught in the filter paper but the <b>liquid</b> will be able to get through.	The <b>liquid</b> changes into a <b>gas</b> , leaving the <b>solid</b> particles behind.

**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.

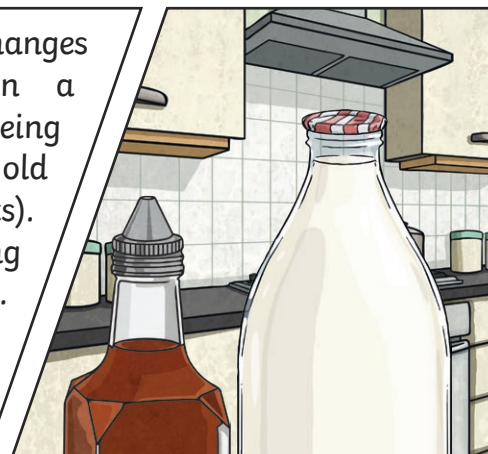
Sugar is a soluble **material**.



Sand is an insoluble **material**.




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.



To look at all the planning resources linked to the Properties and Changes of Materials unit, [click here](#).