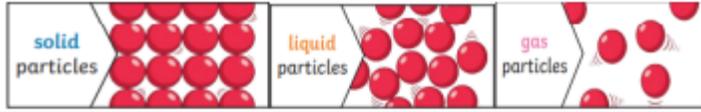


Magic and Mayhem



A solid melts to form a liquid.
A liquid freezes to form a solid.

A liquid evaporates to form a gas.
A gas condenses to form a liquid.

A solution is formed when solid particles are mixed with liquid particles.

Materials that dissolve are known as soluble.
Materials that don't dissolve are known as insoluble.

Mixing and dissolving can be reversed by sieving, filtering and evaporating.

An example of a reversible change is melting ice into water OR boiling water to form steam.

An example of an irreversible change is burning wood to produce ash OR heating an egg to cook it.



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

Sieving	Filtering	Evaporating
		
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.

Irreversible changes often result in a new product being made from the old materials (reactants).

	Burning wood produces ash.		Mixing vinegar and milk produces casein plastic.
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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.

Sand is an insoluble material.



Sugar is a soluble material.

How to group materials based on their properties using more complex vocabulary.	 magnetic  transparent  flexible  permeable  soluble  insoluble
What are thermal insulators and conductors?	<ul style="list-style-type: none"> Materials which are good thermal conductors allow heat to move through them easily. Thermal conductors are used to make items that require heat to travel through them easily, such as a saucepan which requires heat to travel through to cook food. Thermal insulators do not let heat travel through them easily. Examples of thermal insulators include woollen clothes and flasks for hot drinks.  thermal insulator  thermal conductor



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What are electrical insulators and conductors?	<ul style="list-style-type: none"> Electrical conductors allow electricity to pass through them easily while electrical insulators do not. Electrical insulators have a high resistance which means that it is hard for electricity to pass through these objects.  electrical insulator  electrical conductor
What is dissolving?	<ul style="list-style-type: none"> When the particles of a solid mix with the particles of a liquid, this is called dissolving. The result is a solution. Materials that dissolve are soluble. Materials that do not dissolve are insoluble.  dissolving  solution  soluble  insoluble
Can materials be separated after they have been mixed?	<ul style="list-style-type: none"> Some materials can be separated after they have been mixed based on their properties- this is called a reversible change. Some methods of separation include the use of a magnet, a filter (for insoluble materials), a sieve (based on the size of the solids) and evaporation. When a mixture cannot be separated back into the original components, this is called an irreversible change. Examples of this include when materials burn or mixing bicarbonate of soda with vinegar.

Essential vocabulary	
change of state	A change of state is the change of a substance from one physical form to another.
mixture	a substance made by mixing other substances together.
dissolve	the definition of dissolve is to cause a solute to pass into a solution.
solution	A mixture of two or more substances.
soluble	Soluble substances are substances that dissolve in water.
Insoluble	Insoluble substances are substances that don't dissolve in water.
reversible change	A reversible change is a change that can be undone or reversed.
irreversible change	A reversible change is a change that cannot be undone or reversed.