
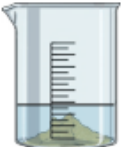

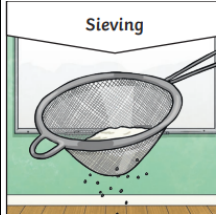
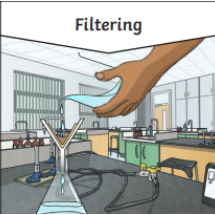
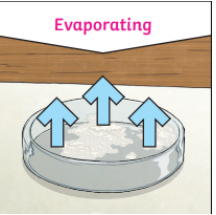
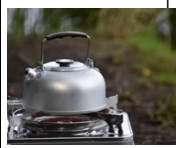







Key Knowledge	
Why are different materials used?	Different materials are used for particular jobs based on their properties: electrical or thermal conductivity or insulation, flexibility or rigidity, hardness or softness, magnetism, solubility or insolubility, transparency, translucency or opacity.
States of matter	There are three common states of matter – solid, liquid and gas. The particles in solids are closely packed in a regular pattern; in liquids more loosely packed; in gases the particles are far apart.
What is a solution?	When a solid (solute) dissolves in a liquid (solvent), it forms a solution and the material can no longer be seen. Materials that dissolve are known as soluble. Materials that do not dissolve are insoluble. <div style="display: flex; align-items: center; justify-content: space-around;"> <div style="text-align: center;"> <p>Salt is soluble in water: it dissolves.</p>  </div> <div style="text-align: center;"> <p>Sand is insoluble in water: it does not dissolve.</p>  </div> </div>
What is a reversible change?	If a change is made to a material but it can be changed back to its original state, it is a reversible change. Water is frozen to form ice; the ice can be melted to get the water back. This is a reversible change. Dissolving, evaporating and condensing are all reversible changes. 
What is an irreversible change?	If a material is changed and cannot be changed back to its original state, it is an irreversible change. When you make a cake, you add raw eggs. Once the cake is cooked, you cannot get the raw eggs back. This is an irreversible change. Rusting, burning and concrete setting are all irreversible changes.
How can I separate mixtures?	Reversible changes, such as mixing and dissolving, can be reversed by sieving, filtering or evaporation.

Investigate
Grouping materials with similar properties. Which materials are good thermal conductors, and which are thermal insulators? Which solids are soluble in water, and which are insoluble? Does salt dissolve in liquids other than water? Explore separation processes. Identify reversible and irreversible processes.

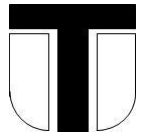
Separation Processes		
<p>Sieving</p> 	<p>Filtering</p> 	<p>Evaporating</p> 
Changing Materials		
Some reversible processes		
		
Some irreversible processes		
		

Key Vocabulary	
Condensing	When a gas cools and turns into a liquid.
Conductor	A material which allows heat or electricity to move through it
Dissolve	When a solid mixes with a liquid and becomes part of the liquid.
Evaporating	When a liquid turns into a gas.
Flexible	Flexible materials bend easily without breaking.
Freezing	When a liquid cools and turns into a solid.
Gas	An air-like fluid substance which expands freely to fill any space available.
Insoluble	Cannot be dissolved in a liquid
Insulator	A material which does not readily allow the passage of heat, sound or electricity
Irreversible change	A change that cannot be reversed: the materials cannot go back to their original state. If I make some bread, I cannot get the flour back again.
Liquid	A substance that flows freely, taking up the shape of the container it is in.
Magnetic	Magnetic materials will be attracted to a magnet.
Melting	When a solid is heated and changes into a liquid.
Opaque	Opaque materials let no light through and cannot be seen through.
Reversible change	A change that can be reversed. E.g. Dissolving salt in water: the salt can be returned to its original state by evaporating the water.
Solid	A substance that holds its shape.
Soluble	Can be dissolved in a liquid.
Translucent	A material which allows some light to pass through.
Transparent	A material which allows all the light to pass through it; objects behind it can be seen clearly.



Science

Theale Primary School



Topic: Materials

Year: 5
