

Subject: Science	Year: 5	Unit 3: Properties and Changes of Materials	Links to: Y4 Chemistry
What I Should Already Know:		Unit Specific Vocabulary:	
<p>The names of different materials and their properties.</p> <p>That materials can be solids, liquids and gases and the properties of these.</p> <p>That changes in materials can be reversible or irreversible.</p>		<p>Soluble – able to be dissolved, especially in water</p> <p>Insoluble – cannot be dissolved, especially in water</p> <p>Dissolve – when something solid mixes with a liquid and becomes part of the liquid</p> <p>Solution – is made when one substance dissolves into another</p> <p>Reversible change – can be reversed back to its original state</p> <p>Irreversible change – cannot be reversed back to its original state</p> <p>Transparent – allows light to pass through</p> <p>Thermal conductor - a material or device which allows heat to carry through</p> <p>Electrical conductor – a material or device with allows electricity to carry through</p> <p>Magnetic – capable of being magnetised or attracted by a magnet</p> <p>Solute – A substance that can be dissolved in another i.e. salt or sugar</p> <p>Solvent – A substance in which another dissolves i.e. water</p> <p>Filter – Used to separate an insoluble material from a liquid.</p> <p>Chromatography – a technique to separate a mixture because the parts move at different speeds.</p> <p>Chemical reaction – what happens when some materials are mixed and a new material is made.</p>	
Skills & Enquiry:			
<p>How can I separate mixtures of different materials?</p> <p>What are solvents?</p> <p>Can I use a filter to clean water?</p>			
What I should know by the end of the Unit:			
<ul style="list-style-type: none"> • That some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • Give reasons, based on evidence from comparative fair tests, for the particular uses of everyday materials, including metals, wood and plastic. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate soda. 			

Key Facts:

PARTICLE ARRANGEMENT

Solid – particles packed closely together



Liquid – particles have some space to move

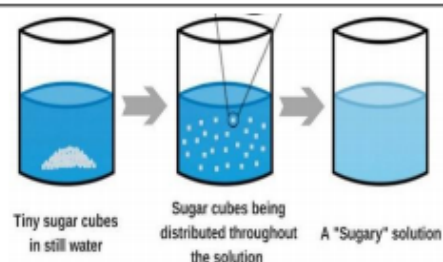
Gas – particles are free to move



DISSOLVING - Sometimes when a solid (solute) is mixed with a liquid (solvent) it will dissolve to form a solution e.g. dissolving sugar in hot tea.

The solid seems to disappear in the solution but it is still there it has just become part of the liquid.

A soluble material can dissolve however an insoluble material cannot dissolve.

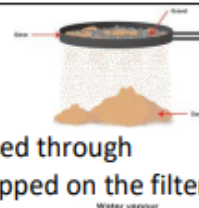


SEPARATING MIXTURES

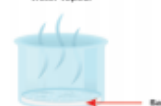
SIEVING – a mixture of different sized solid particles can be separated with a sieve.



FILTERING – an insoluble solid can be separated from a liquid when passed through a filter. The liquid passes through the solid particles are trapped on the filter.



EVAPORATING – if a solution is boiled (heated) the water will evaporate into gas and the solid will be left behind.



Reversible and Irreversible Changes

