

**Staplegrave Church School**  
**Knowledge and Skills Progression in Science**  
**Properties and Changes of Materials**

Year group	Knowledge	Skills	Unit
1			
2			
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5	<p>Materials can be <b>grouped</b> according to their basic <b>physical properties</b>. Properties include <b>hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism</b>.</p> <p><b>Reversible changes</b> include <b>heating, cooling, melting, dissolving and evaporating</b>. <b>Irreversible changes</b> include <b>burning, rusting, decaying and chemical reactions</b>.</p> <p>A material's properties dictate what it can be used for. For example, cooking pans are made from metal, which is a good <b>thermal conductor</b>, allowing heat to quickly transfer from the hob to the contents of the pan.</p> <p>Some <b>mixtures</b> can be <b>separated</b> by <b>filtering, sieving and evaporating</b>. Sieving can be used to separate large solids from <b>liquids</b> and some <b>solids</b> from other solids. <b>Filtering</b> can be used to separate small solids from liquids. Evaporating can be used to separate <b>dissolved</b> solids from liquids.</p> <p>Some materials (<b>solutes</b>) will <b>dissolve</b> in liquid (<b>solvents</b>) to form a <b>solution</b>. The solute can be recovered by <b>evaporating</b> off the solvent by <b>heating</b>.</p>	<p>Compare and group everyday materials by their properties, including hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism.</p> <p>Identify, demonstrate and compare reversible and irreversible changes.</p> <p>Describe, using evidence from comparative or fair tests, why a material has been chosen for a specific use, including metals, wood and glass.</p> <p>Separate mixtures by filtering, sieving and evaporating.</p> <p>Explain, following observation, that some substances (solutes) will dissolve in liquid (solvents) to form a solution and the solute can be recovered by evaporating off the solvent.</p>	<p>Properties and Changes of Materials</p>
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