



<p><u>Working Scientifically Objectives which are covered in this unit:</u></p> <p>Asking questions and recognising that they can be answered in different ways</p> <p>Making observations and taking measurements</p> <p>Engaging in practical enquiry to answer questions</p> <p>Recording and presenting evidence</p> <p>Answering questions and concluding</p> <p>Evaluating and raising further questions and predictions</p> <p>Communicating their findings.</p>	<p><u>National Curriculum Objectives for Science Unit</u></p> <p>compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</p> <p>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>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 of soda</p>
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<p><u>Lesson sequence</u></p> <p>include WALTs/LOs and key concept:</p>	<p><u>Initial assessment</u></p> <p>WS: Asking questions</p> <p>Give children a range of vocabulary from prior learning and group them into know/unknown.</p> <p>Then chn offer a definition based on what they know and a diagram.</p>	<p><u>LO: Compare and group together everyday materials on the basis of their properties</u></p> <p>WS: Recording and presenting evidence</p> <p>use understanding of properties to explain everyday uses of materials, for example, how bricks, wood, glass and metals are used in building</p> <p>create a chart or table grouping/comparing everyday materials by different properties</p>	<p><u>LO: Know that some materials will dissolve in liquid to form a solution</u></p> <p>WS: Making observations and taking measurements</p> <p>explain what dissolving means, giving examples</p> <p>Practical task</p> <p>Explore adding a range of solids to water and other liquids e.g. cooking oil, as appropriate</p>	<p><u>LO: describe how to recover a substance from a solution</u></p> <p>WS: Engaging in practical enquiry to answer questions</p> <p>give reasons for choice of equipment and methods to separate a given solution or mixture such as salt or sand in water</p>	<p><u>LO: Use knowledge of solids, liquids and gases to decide how mixtures might be separated</u></p> <p>WS: Engaging in practical enquiry to answer questions</p> <p>use knowledge of liquids, gases and solids to suggest how materials can be recovered from solutions or mixtures by evaporation, filtering or sieving</p> <p>Give reasons for choice of equipment and methods to separate a given solution or mixture such as salt or sand in water</p>	<p><u>LO: Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials</u></p> <p>WS: Engaging in practical enquiry to answer questions</p> <p>Carry out comparative and fair tests involving non-reversible changes e.g. What affects the rate of rusting? What affects the amount of gas produced?</p>	<p><u>LO: describe how to recover a substance from a solution</u></p> <p style="color: red;">Assessment</p> <p>WS: Engaging in practical enquiry to answer questions</p> <p>give reasons for choice of equipment and methods to separate a given solution or mixture such as salt or sand in water</p>	<p><u>LO: Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials</u></p> <p>WS: Engaging in practical enquiry to answer questions</p> <p>Carry on from previopus lesson. explain the results from their investigations</p>	<p><u>LO: Demonstrate that dissolving, mixing and changes of state are reversible changes</u></p> <p>WS: Evaluating and raising further questions and predictions</p> <p>describe some simple reversible and non-reversible changes to materials, giving examples</p> <p>Explore a range of non-reversible changes e.g. rusting, adding fizzy tablets to water, burning.</p>	<p><u>LO: Explain that some changes result in the formation of new materials</u></p> <p>Research new materials produced by chemists e.g. Spencer Silver (glue of sticky notes) and Ruth Benerito (wrinkle free cotton)</p>
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<u>Key vocabulary to be explicitly taught</u>	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material
<u>Cross –curricular links</u>	Maths – presenting information using diagrams (Venn/Carrol diagram) ICT – Producing results data and presenting them using a variety of graphs English – Report writing of conclusions of an experiment Art – using a diagram to display results of an experiment