

Brough Primary School – Curriculum Intention Plan 2021 - 2022



Subject: Science (Summer 1 and early part of Summer 2) Year Group: Year 5		Area of learning: Properties and Changes of Materials
Links to previous work/Remember when	<ul style="list-style-type: none"> Year 3&4 – Knowing some electrical conductors and insulators and that metals are generally good conductors. Year 3&4 - Knowledge of being able to group common solids, liquids and gases. Year 3&4 – Knowing that some materials change state when they are heated or cooled. Year 3&4 – Knowing the part played by evaporation and condensation in the water cycle. Year 1&2 – Work on comparing uses of everyday materials. • <u>Working Scientifically</u> being able to ask and investigate relevant scientific questions; setting up simple scientific enquiries; making systematic and careful observations; gathering, recording and presenting data; reporting on findings both oral and written; using results to draw simple conclusions using straight forward scientific evidence to support what they have found out. 	
Term	Year 5	Key Skills to be taught
Summer 2022 What the children should know at the end of this series of lessons	<ul style="list-style-type: none"> Compare and group together every day materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets Know 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 and fair tests, for the particular uses of every day 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 of soda. • <u>Working Scientifically</u> Develop their knowledge of planning different scientific investigations to answer questions, including recognising and controlling variables. Continue to use scientific equipment to measure but with increasing accuracy. 	

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	<ul style="list-style-type: none"> • How to record data in increasing complexity through diagrams, labels, tables, bar and line graphs. • Using test results to make predictions and set up comparative and fair tests. • Reporting and presenting findings from investigations in oral and written forms for display and other presentations. • Identify how scientific evidence has been used to support or discount ideas and arguments.
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Vocabulary

Thermal insulator/conductor, electrical insulator/conductor, hardness, transparency, soluble/insoluble, magnetic, attract/repel, solid, liquid, gas, dissolve, soluble, solute, solution, magnet/ism, evaporation, material names, property names, new material, gives off gas, mixture, reversible, irreversible, evaporation, filter, sieve, sieving, filtering, heating, burning, cooking, reaction.

Sequence of learning	Objectives and suggested details provided by subject leader.
1	Cloughton Week – Science work linked to the Water Cycle at Dalby.
2	<ul style="list-style-type: none"> • Compare and group together every day materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets. <p>Camp Bestival – aftermovie video from YouTube.com</p> <p>This should be largely a revision lesson rather than new learning, depending on how much the children remember.</p> <p>If more work is needed, time could be spent exploring a range of materials and should include work on magnetism and electricity from Years 3&4.</p>
3	<ul style="list-style-type: none"> • Compare and group together everyday materials on the basis of their properties, including their solubility and response to magnets. • Know that some materials will dissolve in liquid to form a solution. <p>Kitchen Science, Science Museum, downloadable PDF file from www.sciencemuseum.org.uk</p> <p>How to create a QR code, Hertfordshire Grid for Learning from www.thegrid.org.uk</p> <p>Add, edit or delete a board, Pinterest from https://help.pinterest.com</p> <p>BBC clip on soluble and insoluble materials from www.bbc.co.uk</p>
4	<ul style="list-style-type: none"> • Know 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. • Demonstrate that dissolving, mixing and changes of state are reversible changes.

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	<p>Separating mixtures of substances from www.bbc.co.uk</p>
5	<ul style="list-style-type: none"> 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> Blow up a balloon with yeast from https://sciencebob.com Changing materials: rust from www.bbc.co.uk What is rust? from www.bbc.co.uk https://www.youtube.com/watch?v=U6cxHOnEBo4 </p>
HALF TERM BREAK	
1	<ul style="list-style-type: none"> Give reasons, based on evidence from comparative and fair tests, for the particular uses of every day materials, including metals, wood and plastic. <p>This could be done by a working scientifically investigation to answer questions like 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains?'</p>
2	<ul style="list-style-type: none"> Give reasons, based on evidence from comparative and fair tests, for the particular uses of every day materials, including metals, wood and plastic. <p>Research how one of the following chemists created new materials: - Spencer Silver (who invented the glue for sticky notes) or Ruth Benerito (who invented wrinkle free cotton)</p>
3	<p>Assessment Week</p> <ol style="list-style-type: none"> Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Identify scientific evidence that has been used to support or refute ideas or arguments. <p>See lesson notes in the Y5 Drive for Summer 1 science.</p> <p>Activity will be a practical one, aimed at making goo. Within this activity, children will have the opportunity to explain what changes are taking place.</p>

Learning Outcome/product

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Goo made, with the children describing the nature of the changes that have taken place, identifying the reversible/non-reversible nature of the changes.

Assessment records	List only those children who have not achieved the expected outcomes.

Assessment records	List only those children who have exceeded the expected outcomes.

End of unit assessment question

E.g. What type of change is taking place when we follow the instructions for making goo?
How do you know?