

Exploring Materials KS2 Workshop

Curriculum Links

Please note:	Our workshops may not cover all of the links below in great depth as we are restricted by time, however you have the opportunity to cover them in the follow up activities you will be receiving from us.	
Aims and Activities taken from the workshop booklet	Each child will have the opportunity to carry out four different National Curriculum linked practical activities, including classifying, changing and separating materials. Children work through the activities in small groups to create a lava lamp effect; produce gas to blow up balloons; split black ink into all the colours of the rainbow and find out which material is the hardest! This workshop will help you to deliver some of the curriculum on 'Materials'. SETPOINT will help to raise children's awareness of how scientists work. It builds home school links - all children can take home instructions on how to carry out the experiments. Children, staff and parent-helpers alike love this fun and exciting workshop.	
	National Curriculum	Non-Statutory Opportunities
Science	<p>Working Scientifically (LKS2/UKS2):</p> <ul style="list-style-type: none"> Asking relevant questions and using different types of scientific enquiries to answer them; planning different types of scientific enquiries to answer questions Setting up simple practical enquiries, comparative and fair tests; recognising and controlling variables where necessary Make systematic and careful observations take accurate measurements using standard units; using a range of scientific equipment with increasing accuracy and precision, taking repeat readings where appropriate Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; Recording simple findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables; recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degrees of trust in results, in oral and written forms such as displays and other presentations Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; using test results to set up further comparative and fair tests Identifying differences, similarities or changes related to simple scientific ideas and processes Using straightforward scientific evidence to answer questions or to support their findings; identifying 	<p>Pupils will have the opportunity to:</p> <ul style="list-style-type: none"> - build a more systematic understanding of materials by exploring and comparing the properties of a broad variety of materials - explore the science behind lava lamps, including liquid density and solubility - carry out simple tests to find out which material is the hardest - explore reversible changes by splitting black ink into all the colours of the rainbow - investigate chemical reactions by producing gas to blow up balloons

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	<p>scientific evidence that has been used to support or refute ideas or arguments</p> <p>States of Matter (Y4)</p> <ul style="list-style-type: none"> compare and group materials together, according to whether they are solids, liquids or gases observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature <p>Properties and Changes to Materials (Y5)</p> <ul style="list-style-type: none"> 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 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 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 of soda 	
DT	<p>Design</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities <p>Evaluate</p>	<p><i>Designing their own working lava lamps based on what they have found out</i></p>

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	<ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world <p>Technical knowledge</p> <ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products (for example, magnets) 	
Maths	<p>Statistics: interpret and present data using bar charts, pictograms and tables (Y3) interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs; solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs complete (Y4) read and interpret information in tables (Y5); calculate and interpret the mean as an average (Y6) assuming recording data and repeated trials</p> <p>Measurement: measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) (Y3); estimate, compare and calculate different measures (Y4); estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] (Y5); use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places (Y6) assuming pupils will be measuring liquids</p>	<p><i>Opportunity here for pupils to collect data and talk about their results using mathematical language; also opportunity to build on their understanding of capacity and measures through hands-on practical activities</i></p>
English	<ul style="list-style-type: none"> ask relevant questions to extend their understanding and knowledge articulate and justify answers, arguments and opinions developing a broader, deeper and richer vocabulary 	