

Year 5 Properties and changes of materials			
UKS 2	Emerging (UKS2 children can...)	Expected (UKS2 children can...)	Exceeding (UKS2 children can...)
Work Scientifically  Plan  Do  Record  Review	<ul style="list-style-type: none"> <li>ask relevant questions and using different types of scientific enquiries to answer them</li> <li>set up simple practical enquiries, comparative and fair tests</li> <li>make systematic and careful observations and , where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>gather, record, classify and present data in a variety of ways to help in answering questions</li> <li>record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>report on findings from enquiries, include oral and written explanations, displays or presentations of results and conclusions</li> <li>use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>identify differences, similarities or changes related to simple scientific ideas and processes</li> <li>use straightforward scientific evidence to answer questions or to support their findings.</li> </ul>	<ul style="list-style-type: none"> <li>plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>use test results to make predictions to set up further comparative and fair tests</li> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs,</li> <li>report and present findings from enquiries, including conclusions, causal relationships and explanations results, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</li> <li>identify scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>	<ul style="list-style-type: none"> <li>ask questions and develop a line of enquiry based on observations of the real world alongside prior knowledge and experience</li> <li>make predictions using scientific knowledge and understanding</li> <li>select, plan and carry out the most appropriate types of scientific enquiries to test predictions...</li> <li>make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements</li> <li>present observations and data using appropriate methods, including tables and graphs</li> <li>interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions</li> <li>present reasoned explanations, including data in relation to predictions and hypotheses</li> <li>evaluate data, showing awareness of potential sources of error</li> <li>identify further questions arising from results</li> </ul>
Properties and changes of materials	<ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</li> <li>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, include changes associated with burning and the action of acid on bicarbonate of soda</li> </ul>	<ul style="list-style-type: none"> <li>describe the different states of matter in terms of particle model....</li> <li>Explain changes of state in terms of particle model</li> <li>explain simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography</li> </ul>