

Science 'Working Scientifically' Progression Document

	Early Years	Key Stage 1	Lower KS2	Upper KS2
Asking Questions	<ul style="list-style-type: none"> * Show curiosity about objects, events and people Playing & Exploring Questions why things happen *Engage in open-ended activity Playing & Exploring *Take a risk, engage in new experiences and learn by trial and error Playing & Exploring *Find ways to solve problems / find new ways to do things / test their ideas 	<ul style="list-style-type: none"> * Explore the world around them and raise their own simple questions. * Experience different types of science enquiries, including practical activities. * Begin to recognise ways in which they might answer scientific questions. * Ask people questions and use simple secondary sources to find answers. 	<ul style="list-style-type: none"> * Raise their own relevant questions about the world around them. * Should be given a range of scientific experiences including different types of Science enquiries to answer questions. * Start to make their own decisions about the most appropriate type of Scientific enquiry they might use to answer questions. *Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations. 	<ul style="list-style-type: none"> * Use their Science experiences to explore ideas and raise different kinds of questions. * Talk about how Scientific ideas have developed over time. * Select and plan the most appropriate type of scientific enquiry to use to answer Scientific questions. * Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.
Measuring and Recording	<ul style="list-style-type: none"> *Develop ideas of grouping, sequences, cause and effect *Critically Know about similarities and differences in relation to places, objects, materials and living things *Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world The World *Make links and notice patterns in their experience *Choose the resources they need for their chosen activities *Handle equipment and tools effectively *Create simple representations of events, people and objects *Answer how and why questions about their experiences 	<ul style="list-style-type: none"> * Carry out simple tests * Use simple features to compare objects, materials and living things, and with help, decide how to sort and group them. *Observe closely using simple equipment with help, observe changes over time. * Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data. *Record simple data. *With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language. 	<ul style="list-style-type: none"> * Set up simple practical enquiries, comparative and fair tests. *Recognise when a fair test is necessary and help to decide how to set it up. * Talk about criteria for grouping, sorting and classifying; and use simple keys. * Make systematic and careful observations. * Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. * Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. * Take accurate measurements using standard units. * Learn how to use a range equipment such as data loggers / thermometers appropriately. * Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help make decisions about how to analyse this data. 	<ul style="list-style-type: none"> * Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. * Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. * Make their own decisions about what observations to make, what measurements to use and how long to make them for. * Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate. * Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
Concluding	<ul style="list-style-type: none"> *Develop their own narratives and explanations by connecting ideas or events * Builds up vocabulary that reflects the breadth of their experience 	<ul style="list-style-type: none"> * With guidance, they should begin to notice patterns and relationships. * Use their observations and ideas to suggest answers to questions. * Talk about what they have found out and how they have found it out. 	<ul style="list-style-type: none"> * With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. *Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for difference audiences, including oral and written explanations, displays or presentations of results and conclusions. 	<ul style="list-style-type: none"> * Look for different causal relationships in their data and evidence that refutes or supports the ideas. *Identify scientific evidence that has been used to support or refute ideas or arguments. * Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. * Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results.
Evaluating			<ul style="list-style-type: none"> * With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done. 	<ul style="list-style-type: none"> *Use their results to make predictions and identify when further observations, comparative and fair tests might be needed.