



# Science Progression of Skills

	Asking questions	Making observations and taking measurements	Engaging in practical enquiry	Recording and presenting evidence	Answering questions and conclude	Evaluating and raising further questions	Communicating findings
<b>Nursery</b>	Ask questions about different topics to support their learning.	<p>Make comparisons between objects relating to size, length, weight and capacity.</p> <p>Begin to describe a sequence of events, using words such as 'first', 'then...'</p>	<p>Investigate and explore live animals e.g. from egg hatching experience and farm visit.</p> <p>Explore how things work.</p> <p>Use all their senses in hands-on exploration of natural materials.</p>	Explore collections of materials with similar and/or different properties.	Talk about the differences between materials and changes they notice.	Review and add to their own work.	<p>Talk about what they see, using a range of vocabulary.</p> <p>Explore and talk about different forces they can feel.</p> <p>Talk about the differences between materials and changes they notice.</p>
<b>Reception</b>	Make comments about what they have seen/heard and ask questions to clarify their understanding.	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <p>Describe what they see, hear and feel whilst outside.</p>	<p>Experience activities that encourage them to explore, problem solve, observe, predict, think, make decisions and talk about the world around them.</p> <p>Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and animal.</p> <p>Explore and talk about different forces they can feel.</p>	<p>To record and illustrate changes that the children notice when observing an animal e.g. duck egg/duckling.</p>	<p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p> <p>Offer explanations for why things might happen.</p>	<p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</p>	<p>Express their ideas and feelings about their experiences using full sentences, with modelling and support from their teacher.</p> <p>Describe and comment on things they have seen whilst outside, including plants and animals.</p>
<b>Year 1</b>	<p>Develop their ability to ask questions, such as what something is, how things are similar and different, the ways things work.</p> <p>Answer simple scientific questions developed with the teacher through a scenario.</p>	<p>Explore the world around them.</p> <p>Make observations to identify, compare and notice change.</p> <p>Use appropriate senses, aided by equipment such as magnifying glasses or microscopes, to make their observations.</p>	<p>Experience different types of scientific enquiries, including practical activities.</p> <p>Use simple measurements and equipment (for example, hand lenses, egg timers) to gather data and carry out simple tests.</p> <p>Talk about what they have found out and how they found it out.</p>	<p>Record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.</p> <p>Classify using simple prepared tables and sorting rings.</p>	<p>Use their experiences of the world around them to suggest appropriate answers to questions.</p> <p>Recognise 'biggest and smallest', 'best and worst' etc. from their data.</p>	<p>Record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.</p> <p>Classify using simple prepared tables and sorting rings.</p>	<p>With help, they should record and communicate their findings in different ways.</p> <p>Begin to use simple scientific language.</p>

			Compare objects, materials and living things.				
<b>Year 2</b>	<p>Develop their ability to ask questions, such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen.</p> <p>Begin to recognise ways that they answer simple scientific questions.</p>	<p>Make careful observations to identify, compare and notice change.</p> <p>Use appropriate senses, aided by equipment such as magnifying glasses or microscopes, to make their observations.</p>	<p>Use simple measurements and equipment to gather data, carry out simple tests, record simple data.</p> <p>Talk about what they have found out and how they found it out.</p> <p>Compare objects, materials and living things and, with help, decide how to sort and group them, observe changes over time.</p> <p>With guidance, begin to notice patterns and relationships.</p>	<p>Record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.</p> <p>Classify using simple prepared tables and sorting rings.</p>	<p>Use their experiences of the world around them to suggest appropriate answers to questions.</p> <p>Recognise 'biggest and smallest', 'best and worst' etc. from their data.</p> <p>Ask questions and use simple secondary sources to find answers.</p>	<p>Record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing.</p> <p>Classify using simple tables and sorting rings.</p>	<p>With help, they should record and communicate their findings in a range of ways.</p> <p>Begin to use scientific language.</p>
<b>Year 3</b>	<p>Ask relevant questions and use different types of scientific enquiries to answer them.</p> <p>Independently use a range of question stems. Where appropriate, they answer these questions.</p> <p>Given a range of resources, the children decide how to gather evidence to answer the question.</p>	<p>Make systematic and careful observations.</p> <p>Take accurate measurements using standard units</p> <p>Use a range of equipment, including thermometers and data loggers.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Help to make decisions about what observations to make and the type of equipment that might be used.</p>	<p>Set up simple practical enquiries, comparative and fair tests.</p> <p>Select from a range of practical resources to gather evidence to answer questions generated by themselves or the teacher.</p> <p>Carry out observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking. e.g. using tables, Venn diagrams.</p> <p>Talk about criteria for grouping, sorting and classifying; and use simple keys.</p>	<p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Sometimes decide how to record and present evidence e.g. using photographs, pictures, labelled diagrams or writing.</p> <p>Record measurements e.g. using tables, tally charts and bar charts.</p> <p>Record classifications e.g. using tables and Venn diagrams.</p>	<p>Answer questions based on observations they have made, measurements they have taken or information they have gained from secondary sources.</p> <p>Draw conclusions based on their evidence and current subject knowledge.</p>	<p>Use results to draw simple conclusions, make predictions for new values and suggest improvements</p> <p>Identify how they would do it differently if they repeated the enquiry.</p>	<p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Communicate their findings to an audience both orally and in writing.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p>
<b>Year 4</b>	<p>Ask relevant questions and use different types of scientific enquiries to answer them.</p>	<p>Make systematic and careful observation.</p> <p>Use a range of equipment and take</p>	<p>Set up simple practical enquiries, comparative and fair tests.</p>	<p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p>	<p>Answer questions based on observations they have made, measurements they have taken or</p>	<p>Use results to draw simple conclusions, make predictions for new values, suggest</p>	<p>Report on findings from enquiries, including oral and written explanations, displays or</p>

	<p>Consider their prior knowledge when asking questions.</p> <p>Independently use a range of question stems. Where appropriate, they answer these questions.</p> <p>Given a range of resources, the children decide how to gather evidence to answer the question.</p>	<p>accurate measurements using standard units.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.</p> <p>Help to make decisions about what observations to make, how long to make them for and the type of equipment that might be used.</p>	<p>Select from a range of practical resources to gather evidence and answer questions.</p> <p>Follow their plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking.</p> <p>Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and help to decide how to set it up.</p>	<p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Sometimes decide how to record and present evidence e.g. using photographs, pictures, labelled diagrams or writing.</p> <p>Record measurements e.g. using tables, tally charts and bar charts.</p> <p>Record classifications e.g. using tables and Venn diagrams.</p>	<p>information they have gained from secondary sources.</p> <p>Interpret data to generate simple comparative statements.</p> <p>Draw conclusions based on their evidence and current subject knowledge.</p>	<p>improvements and raise further questions.</p> <p>Identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry.</p> <p>Use evidence to suggest values for different items tested using the same method.</p>	<p>presentations of results and conclusions.</p> <p>Communicate their findings to an audience both orally and in writing.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p>
<b>Year 5</b>	<p>Independently ask scientific questions. This may be stimulated by a scientific experience or be based on their developed understanding following an enquiry.</p> <p>Given a wide range of resources, decide for themselves how to gather evidence to answer a scientific question.</p> <p>Explore ideas and raise different kinds of questions.</p>	<p>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p> <p>Make their own decisions about what observations to make, what measurements to use and how long to make them for.</p> <p>Choose the most appropriate equipment to make measurements and explain how to use it accurately.</p>	<p>Plan different types of scientific enquiries to answer questions.</p> <p>Carry out fair tests, explaining which variables need to be controlled and why.</p> <p>Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions.</p> <p>Use keys to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.</p>	<p>Record data and results of increasing complexity using scientific diagrams and labels.</p> <p>Decide how to record and present evidence.</p> <p>Record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing.</p> <p>Record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs.</p> <p>Present the same data in different ways.</p>	<p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p> <p>Answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources.</p> <p>Explain degrees of trust in results, in oral and written forms, such as displays and other presentations.</p> <p>In their conclusions: identify causal relationships and patterns in the natural world.</p>	<p>Evaluate the choice of method used, the accuracy of measurements and the credibility of secondary sources used.</p> <p>Use test results to make predictions to set up further comparative and fair tests.</p> <p>Use their results to identify when further tests and observations might be needed.</p> <p>Begin to separate opinion from fact when carrying out research.</p>	<p>Communicate their findings to an audience.</p> <p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.</p> <p>Talk about how scientific ideas have developed over time.</p>
<b>Year 6</b>	<p>Independently ask scientific questions. This may be stimulated by a scientific experience or be based on their</p>	<p>Take measurements, using a range of scientific equipment, with increasing accuracy and precision,</p>	<p>Plan different types of scientific enquiries to answer questions</p> <p>Carry out fair tests, explaining which</p>	<p>Record data and results of increasing complexity using scientific diagrams and labels.</p>	<p>Answer their own and others' questions based on observations they have made, measurements they have taken or</p>	<p>Evaluate the choice of method used, the control of variables, the precision and accuracy of</p>	<p>Communicate their findings to an audience.</p> <p>Use relevant scientific language and</p>

	<p>developed understanding following an enquiry.</p> <p>Given a wide range of resources, decide for themselves how to gather evidence to answer a scientific question.</p> <p>Explore ideas and raise different kinds of questions.</p>	<p>taking repeat readings when appropriate.</p> <p>Select measuring equipment to give the most precise results e.g. a ruler, tape measure, trundle wheel or force meter – and explain how it is used accurately.</p> <p>Make their own decisions about what observations to make, what measurements to use and how long to make them for.</p>	<p>variables need to be controlled and why.</p> <p>Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions</p> <p>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.</p>	<p>Decide how to record and present evidence.</p> <p>Record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing.</p> <p>Record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs.</p> <p>Look for different causal relationships in their data and identify evidence that refutes or supports their ideas.</p>	<p>information they have gained from secondary sources.</p> <p>Discuss whether other evidence e.g. from other groups and secondary sources, supports or refutes their answer.</p> <p>Explain degrees of trust in results, in oral and written forms, such as displays and other presentations.</p> <p>In their conclusions: identify causal relationships and patterns in the natural world.</p>	<p>measurements and the credibility of secondary sources used.</p> <p>Use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.</p> <p>Use their results to identify when further tests and observations might be needed.</p> <p>Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</p>	<p>illustrations to discuss, communicate and justify their scientific ideas.</p> <p>Talk about how scientific ideas have developed over time.</p>
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**MORE ABLE**

**If a child is secure with all skills within their year group band, they can be assessed by the following more able strands:**

- Compose their own scientific questions and understand that there are different ways to answer them
- Plan investigations and justify their choice of method and/or resources
- Evaluate the effectiveness of practical enquiries
- Categorise data in variety of different ways
- Conduct different types of experiment and draw their own conclusions
- Analyse and compare the results of investigations