



Science Curriculum Progression – Working Scientifically

Updated September 2022

This document outlines the progression of skills for working scientifically in Science at Sebert Wood Primary School, and is adapted from the 'National Curriculum Science programmes of study: key stages 1 and 2'. Statutory requirements from the national curriculum have been identified to give teachers a clear overview of the expected scientific methods, processes and skills to be taught and used in each phase. This document should be used in conjunction with the 'Knowledge' progression document that has also been produced.

Working Scientifically Progression Document

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Early Years	National Curriculum Objective	Explanation
Questioning	Comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world	I can show curiosity about objects, events and people.
Observation	Talk about some of the things they have observed, such as plants, animals, natural and found objects Look closely at similarities and differences, patterns and change	I can answer how and why questions about my experiences. I can talk about similarities and differences in relation to places, objects, materials and living things.
Conclusion	Talk about why things happen and how things work	I can develop ideas of grouping, sequences, cause and effects. I can make links and notice patterns in my experiences. I can explain why some things occur and talk about changes.

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Key Stage 1: Year 1 and 2

Aspect	National Curriculum Objective	Explanation
Questioning	Ask simple questions and recognise that they can be answered in different ways	<p>I am interested in what we are learning.</p> <p>I can explore the world around me and raise my own simple questions</p> <p>I can ask people questions and use simple secondary sources to find answers.</p> <p>I have an idea about what might happen.</p> <p>I can use simple scientific language</p>
Enquiry	Perform simple tests	<p>I can begin to recognise different ways in which I might answer scientific questions with help from an adult</p> <p>I can carry out simple tests.</p> <p>I can experience different types of science enquiries, including practical activities</p>
Observation	<p>Observe closely, using simple equipment</p> <p>Identify and classify</p>	<p>I can say what I am seeing</p> <p>I can use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data.</p> <p>I can, with help, observe changes over time</p> <p>I can use simple features to compare objects, materials and living things and, with help, decide how to sort and group them.</p>
Results	Gather and record data to help in answering questions	<p>I can record simple data.</p> <p>I can, with help, record and communicate findings in a range of ways and begin to use simple scientific language.</p>
Conclusion	Use observations and ideas to suggest answers to questions.	<p>I can talk about what I have found out and how I found it out.</p> <p>I can, with guidance, begin to notice patterns and relationships, including similarities and differences</p> <p>I can use my observations and ideas to suggest answers to questions.</p> <p>I can say what I found difficult.</p>

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Lower Key Stage 2: Year 3 and 4

Aspect	National Curriculum Objective	Explanation/Exemplars
Questioning	Ask relevant questions and use different types of scientific enquiries to answer them	I can raise my own relevant questions about the world around me. I can use simple scientific language to explain what might happen.
Enquiry	Set up simple practical enquiries, comparative and fair tests	I can set up simple, practical enquiries, fair test and comparative I can start to make my own decisions about the most appropriate type of scientific enquiry I might use to answer questions. I can experience a range of scientific experiences, including different types of scientific enquiries to answer questions I can recognise when a simple fair test is necessary and help to decide how to set it up. I can recognise when and how secondary sources might help me answer questions that cannot be investigated through practical investigations
Observation	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	I can begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. I can use equipment carefully that helps me take accurate measurements in standard units. I can collect and record data from my own observations and measurements in a variety of ways.
Results	Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Gather, record, classify and present data in a variety of ways to help in answering questions	I can help to make decisions about how to analyse the observed data. I can present my data in a variety of ways I can talk about criteria for grouping, sorting and classifying and use keys to support my thinking.
Conclusion	Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	I can, with help, look for changes and patterns, similarities and differences in my data and draw simple conclusions and answer questions. I can, with help use simple scientific language to discuss ideas and communicate findings in a way that is appropriate for my audience I can, with support, say whether the outcome of the experiment is as I thought. I can, with support, identify new questions arising from the data, making predictions for new values within or beyond the data I have collected and find new ways of improving what I have already done. I can say what could make my results more accurate next time. I can suggest how to make my results more reliable I can use my results to make further predictions.

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Upper Key Stage 2: Year 5 and 6

	National Curriculum Objective	Explanation/Exemplars
Questioning	Ask relevant questions	I can use my science experiences to explore ideas and raise different kinds of questions.
Enquiry	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	<p>I can talk about how scientific ideas have developed over time.</p> <p>I can select and plan the most appropriate type of scientific enquiry to use to answer scientific questions.</p> <p>I can recognise how and when to set up comparative and fair tests and explain which variables need to be controlled and why.</p> <p>I can recognise which secondary sources will be most useful to research my ideas and begin to separate opinion from fact.</p>
Observation	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	<p>I can make my own decisions about what observations to make, what measurements to use and how long to make them for.</p> <p>I can choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately.</p> <p>I can take repeat measurements where appropriate.</p>
Results	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	<p>I can use and develop keys and other information records to identify, classify and describe living things and materials.</p> <p>I can choose the most appropriate way to record my data; selecting from a variety of ways.</p>
Conclusion	<p>Use test results to make predictions to set up further comparative and fair tests</p> <p>Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments</p>	<p>I can make suggestions for future investigations based on the outcomes of my scientific enquiry.</p> <p>I can identify patterns that might be found in the natural environment.</p> <p>I can look for different causal relationships in my data and identify evidence that refutes or supports ideas.</p> <p>I can report and present my findings from enquiries.</p> <p>I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas.</p> <p>I can identify secondary scientific evidence that has been used to support or refute ideas or arguments.</p>

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