









St John's Primary - Science Skills Progression

Black is statutory from NC. Blue is non-statutory from NC. Purple writing is additional guidance for teachers. Green writing from Statutory framework 2021 & Development Matters 2020 (bold green text indicates Early Learning Goal)

	EYFS	Year 1/2	Year 3/4	Year 5/6
Asking Questions 	<p>Explore the natural world around them (Understanding the World: reception) Notice and ask questions about differences (Personal, Social & Emotional Dev: birth-3). Understanding simple questions about 'who', 'what' and 'where' (Communication & Language: 2 years/ understanding 'why' questions (3-4 years)/ask questions to find out more (reception) Listen attentively and respond to what they hear with relevant questions (ELG: Listening, Attention & Understanding)</p>	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p style="color: purple;">These questions could be stimulated by observations and exploration of their world.</p>	<p>Asking relevant questions and using different types of scientific enquiries to answer them</p>	<p style="color: blue;">Explore ideas and raise different kinds of questions</p>
Making observations and taking measurements 	<p>Use all their sense in hands-on exploration of natural materials (Understanding the World: 3-4 years). Sort materials (Creating & Thinking Critically) Explore different materials and tools (Physical dev: birth-3) Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG: The natural World) Make comparisons between objects relating to size, length, weight and capacity (Mathematics: 3-4 years)/ compare length weight and capacity (Reception)</p>	<p>Observing closely, using simple equipment and take measurements using non-standard units (for example hand lenses, egg timers). Performing simple tests. Identifying and Classifying</p>	<p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers using standard units for their measurements. Learn how to use new equipment, such as data loggers, appropriately.</p>	<p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.</p> <p style="color: blue;">Make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them. Choose appropriate equipment to make measurements and explain how to use it accurately.</p>
Setting up Tests 	<p>Make choices and explore different resources and materials (Playing & Exploring) Be confident to try new activities and show independence, resilience and perseverance in the face of challenge (ELG: Managing Self)</p>	<p style="color: purple;">Plan a simple enquiry. (e.g. I will test cotton, tin foil and plastic to see what protects a cuddly toy from rain)</p>	<p>Setting up simple practical enquiries, comparative and fair tests</p> <p style="color: blue;">Make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions and recognise when a simple fair test is necessary, helping to decide how to set it up</p> <p><i>Explanatory note</i> A comparative test is performed by changing a variable that is qualitative e.g. the type of material, shape of the parachute. This leads to a ranked outcome. A fair test is performed by changing a variable that is quantitative e.g. the</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p style="color: blue;">Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</p>

<p>Recording and presenting evidence</p> 	<p>Use drawing to represent ideas (Expressive Arts & Design: 3-4 years)/ return to and build on their previous learning, refining ideas and developing their ability to represent them (Reception). Use a range of tools, including scissors, paint brushes and cutlery (ELG: Fine Motor Skills)</p>	<p>Gathering and recording data to help in answering questions</p> <p>Record their observations in a variety of ways e.g. using photographs, videos, drawings, labelled diagrams or in writing. Present evidence in prepared templates provided for them.</p>	<p><i>thickness of the material or the area of the canopy. This leads to establishing a causative relationship.</i></p> <p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Children create their own simple tables and notes.</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	<p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (They should decide how to record data from a choice of familiar approaches)</p>
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<p>Interpreting and communicating</p> 	<p>Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate (ELG: Speaking)</p>	<p>Using their observations and ideas to suggest answers to questions</p> <p>Use evidence and draw on their everyday experience to help answer questions.</p> <p>The children recognise 'biggest and smallest', 'best and worst' etc. from their data.</p>	<p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p> <p>Using straightforward scientific evidence to answer questions or to support their findings</p>	<p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and talk about how scientific ideas have developed over time.</p>
<p>Evaluating and raising further questions and predictions</p>  			<p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>With help, children should look for changes, patterns, similarities and differences in their data and identify new questions arising from the data, making predictions for new values within or beyond the data they have collected, finding ways of improving what they have already done.</p>	<p>Using test results to make predictions to set up further comparative and fair tests.</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p>

<p>Communicating their findings</p> 			<p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <ul style="list-style-type: none"> • They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary. 	<p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <ul style="list-style-type: none"> • They communicate their findings to an audience using relevant scientific language and illustrations.
Vocabulary	Data, hazard	Prediction, accuracy, variable, precision, enquiry, cause and effect	Interval, systematic, independent, dependent, control, discrete, continuous	Causal relationship, qualitative, quantitative, anomalous, validity, range, reliability, bias, hypothesis, refute, phenomena