



## Progression Map: Science (Thinking Scientifically)



National Curriculum Area	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Questioning</b>	Ask questions to find out more and to check what has been said to them  Make comments about what they have heard and ask questions to clarify their understanding.	Asking simple questions about what they see	Asking simple questions and recognising they can be answered in different ways	Asking relevant questions and beginning to find answers independently.	Asking relevant questions and using different types of scientific enquiry to answer them	Raising their own questions to investigate	Plan different types of scientific enquiry to answer their own questions and controlling variables
<b>Testing Including:</b>	Performing simple tests through play	Performing simple tests	Performing simple tests	Carrying out simple practical enquiries and comparative enquiries	Carrying out simple practical enquiries, comparative and fair tests	Planning and carrying out practical enquires, comparative and fair tests after class discussions	Planning and carrying out practical enquires, comparative and fair tests
<b>Planning and controlling variables</b>				Setting up simple practical enquiries and comparative enquiries	Setting up simple practical enquiries, comparative and fair tests	Planning different types of scientific enquiries to answer questions including recognising variables where necessary	Planning different types of scientific enquiries to answer questions including recognising and controlling variables where necessary  For example: electricity and changing components of a circuit
<b>Predicting</b>	Articulate their ideas and thoughts in well-formed sentences.  Describe events in some detail.	Using their observations and ideas to suggest answers to questions	Using their observations and ideas to suggest answers to questions incorporating their knowledge of the world	Make predictions based on prior learning	Make predictions for new values	Using test results to make predictions to set up further comparative and fair tests	Using test results to make predictions to set up further comparative and fair tests including supporting evidence
<b>Gathering and recording data</b>	Use talk to work out problems and organise thinking and activities. Explain how things work and why they might happen.  Describe what they see, hear and feel while they are outside.  Explore the natural world around them, making observations and drawing pictures of animals and plants.	Gather and record data (photographs and tables)	Gather and record data (venn diagrams)	Take accurate measurements including standard units using a range of equipment including measuring strength of magnets  Gathering, recording and presenting data in a variety of ways to help in answering questions. Using bar charts with scales provided, beginning to use simple scientific language, drawings and tables	Take accurate measurements including standard units using a range of equipment including thermometers  Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Constructing their own bar charts, using simple scientific language, keys, labelled diagrams and tables	Taking measurements using a range of scientific equipment (filtration paper, matches) with increasing accuracy taking repeated readings when appropriate. For examples; shadows and changes of materials  Recording data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs	Taking measurements using a range of scientific equipment (electrical circuits, stopwatches and prisms) with accuracy and precision taking repeated readings when appropriate. For examples; bread mould and heart rate over a period of time  Recording data and results of increasing complexity using scientific diagrams and labels, classification

							keys, tables, scatter graphs, bar and line graphs
<b>Concluding</b>	<p>Articulate their ideas and thoughts in well-formed sentences.</p> <p>Describe events in some detail.</p>	Using observations of practical objects to answer questions as a class	Using observations of practical objects to answer questions and referring to their everyday life.	Reporting on findings from enquiries including oral and written explanations, or presentations of results and conclusions after whole class discussions	Reporting on findings from enquiries including oral and written explanations, or presentations of results and conclusions in small groups	Reporting and presenting findings from enquiries including conclusions, beginning to identify causal relationships.	Reporting and presenting findings from enquiries including conclusions, causal relationships.
<b>Compare and contrast</b>	<p>Explore the natural world around them</p> <p>Recognise some environments that are different from the one in which they live.</p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</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>Understand the effect of changing seasons on the natural world around them.</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>	<p>Observing closely using simple equipment. For example: thermometers, rainfall measurers, petri dishes, nets, mini beast boxes</p> <p><b>Observing</b> at first hand familiar objects or through videos and photographs, describing how they were able to identify and group them</p>	<p>Observing closely using simple equipment with increasing accuracy. For example; magnets and magnifying glasses.</p> <p>Observing and sorting objects with <b>similar</b> properties</p>	Comparing, identifying and grouping identify <b>similarities and differences</b> . Pupils might research and discuss	Comparing and <b>suggesting reasons</b> for differences	Observing and comparing their local <b>environment to the rest of the world</b>	Identifying scientific evidence that has been used to <b>support or refute ideas or arguments</b>
					Suggest improvements and raising further questions	As a class, discuss the reliability of the results, in oral and written forms such as displays and other presentations	Children can discuss and explain the reliability of results, in oral and written forms such as displays and other presentations
					Grouping and classifying a <b>variety</b> of different objects	Exploring and comparing properties of a <b>broad range</b> of objects	