



Curriculum Progression Map

Science - Working Scientifically



Early Years Foundation Stage	Key Stage One
<p>Development Matters Understanding the World Explore the natural world around them</p> <ul style="list-style-type: none"> • Provide children with have frequent opportunities for outdoor play and exploration. • Encourage interactions with the outdoors to foster curiosity and give children freedom to touch, smell and hear the natural world around them during hands-on experiences. • Create opportunities to discuss how we care for the natural world around us. • Offer opportunities to sing songs and join in with rhymes and poems about the natural world. • After close observation, draw pictures of the natural world, including animals and plants. • Observe and interact with natural processes, such as ice melting, a sound causing a vibration, light travelling through transparent material, an object casting a shadow, a magnet attracting an object and a boat floating on water. <p>Early Learning Goal The Natural World ELG Children at the expected level of development will:</p> <ul style="list-style-type: none"> • Explore the natural world around them, making observations and drawing pictures • of animals and plants; • Know some similarities and differences between the natural world around them 	<p>National Curriculum Programme of Study</p> <p>During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions. <p>Key Stage Two</p> <p>National Curriculum Programme of Study</p> <p>During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

- and contrasting environments, drawing on their experiences and what has been
- read in class;
- Understand some important processes and changes in the natural world around
- them, including the seasons and changing states of matter.

- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- 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
- identifying scientific evidence that has been used to support or refute ideas or arguments

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Asking Questions and Planning Enquiry	Know that they can ask questions about what they see in their environment.	Know how to ask simple questions about the world around them and know that answers can be found in different ways.	Know how to ask questions about the world around them and know that questions can be answered in more than one way, including practical investigations and secondary sources.	Know how to ask their own scientific questions and know how to decide which type of enquiry is best suited to answering them.	Know how to ask relevant scientific questions and know how to choose the most appropriate type of scientific enquiry.	Know how to plan different types of scientific enquiries to answer questions, including how to recognise and control variables where necessary.	Know how to independently plan different types of scientific enquiries to answer their own questions, including how to manage variables effectively.
Observing and Measuring	Know that they can use their senses to explore the world around them.	Know how to make simple observations using their senses and basic equipment.	Know how to observe closely using simple equipment and know how to measure using non-standard and standard units.	Know how to make careful observations and accurate measurements using standard units and simple tools.	Know how to use a range of equipment accurately to observe and measure, including using thermometers and data loggers.	Know how to make precise measurements using standard units and suitable equipment.	Know how to select and use the most appropriate measuring equipment for different tasks and take repeat readings where appropriate.
Recording Results	Know that they can talk about what they see and do.	Know how to record findings using drawings, photographs, and simple tables.	Know how to record findings using simple tables, tally charts, and pictograms.	Know how to record observations and results using tables, bar charts, and labelled diagrams.	Know how to record data and results using diagrams, keys, tables, and bar charts.	Know how to record data and results using scientific diagrams, classification keys, tables, and line graphs.	Know how to choose the most effective way to record and present data, including using line graphs and complex tables.

Interpreting and Analysing Results	Know that they can describe changes and patterns they notice.	Know how to talk about what they have found out using simple scientific language.	Know how to use observations and ideas to suggest answers to questions.	Know how to use results to draw simple conclusions and suggest improvements.	Know how to interpret data to identify patterns and begin to draw valid conclusions.	Know how to use results to make conclusions and explain how they relate to scientific ideas.	Know how to identify patterns, make and explain conclusions, and use results to support or refute predictions and ideas.
Evaluating	Know that they can talk about what they liked or found tricky when exploring.	Know how to say what went well and what could be done differently.	Know how to suggest ways to improve their investigation or answer further questions.	Know how to recognise if a test was fair and suggest changes to improve it.	Know how to identify improvements and explain how changes could improve results.	Know how to evaluate the reliability of results and recognise when further tests are needed.	Know how to evaluate their methods and suggest how their enquiries could be improved or extended.