

Science WORKING SCIENTIFICALLY PROGRESSION

End of EYFS	End of KS1	End of Lower KS2	End of KS2	(KS3)
Make comments about what they have heard and ask questions to clarify their understanding. (Listening, Attention and Understanding)	Explore the world around them and raise their own simple questions.	Raise their own relevant questions about the world around them	Use their science experiences to explore ideas and raise different kinds of questions	Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
Engage in open-ended activity Playing & Exploring Work and play cooperatively and take turns with others.(Building Relationships)	Experience different types of science enquiries, including practical activities	Should be given a range of scientific experiences including different types of science enquiries to answer questions	Talk about how scientific ideas have developed over time	Understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review
• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. (managing self)	Begin to recognise different ways in which they might answer scientific questions	Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions	Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions	Select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate
Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate. (Self-Regulation)	Carry out simple tests	Set up simple practical enquiries, comparative and fair tests Recognise when a simple fair test is necessary and help to decide how to set it up	Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why	
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 (The Natural World)	Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying)	Talk about criteria for grouping, sorting and classifying; and use simple keys	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	
. Make comments about what they have heard and ask questions to clarify their understanding. (Listening, Attention and Understanding)	Ask people questions and use simple secondary sources to find answers	Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations	Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact	
Explore the natural world around them, making observations and drawing pictures of animals and plants. (The Natural World)	Observe closely using simple equipment With help, observe changes over time	Make systematic and careful observations Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used	Make their own decisions about what observations to make, what measurements to use and how long to make them for	Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety Evaluate the reliability of methods and suggest possible improvements Evaluate risks Pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility.
Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. (The Natural World)	With guidance, they should begin to notice patterns and relationships	Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them	Look for different causal relationships in their data and identify evidence that refutes or supports their ideas	Understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature Make and record observations and measurements using a range of methods for different investigations Present observations and data using appropriate methods, including tables and graphs
Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. (Creating with Materials)	Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data	Take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately	Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate.	
Create simple representations of events, people	Record simple data	Collect and record data from their own	Decide how to record data and results of	Interpret observations and data,

and objects Being Imaginative: 40-60+ months		observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data	increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	including identifying patterns and using observations, measurements and data to draw conclusions
Explore the natural world around them, making observations and drawing pictures of animals and plants. (The Natural World)	Use their observations and ideas to suggest answers to questions Talk about what they have found out and how they found it out	With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions	Identify scientific evidence that has been used to support or refute ideas or arguments	Present reasoned explanations, including explaining data in relation to predictions and hypotheses Evaluate data, showing awareness of potential sources of random and systematic error
Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate (Speaking)	With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results	
		With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done.	Use their results to make predictions and identify when further observations, comparative and fair tests might be needed	Identify further questions arising from their results
				Make predictions using scientific knowledge and understanding
				Apply sampling techniques Apply mathematical concepts and calculate results Use and derive simple equations and carry out appropriate calculations Undertake basic data analysis including simple statistical techniques