

## Working Scientifically Progression

	KS1	Lower KS2	Upper KS2
<b>Ask questions</b>	<b>Children can:</b>		
	ask simple scientific questions about how and why things happen in the world around them;	start to raise own relevant questions about the world around them in response to scientific experiences;	with growing independence raise own relevant questions about the world around them in response to scientific experiences;
	begin to recognise ways in which they might answer scientific questions.	start to make own decisions about most appropriate type of scientific enquiry to use to answer a question.	with increasing independence, make own decisions about most appropriate type of scientific enquiry to use to answer a question.
<b>Carry out fair and comparative tests</b>	<b>Children can:</b>		
	carry out different types of scientific enquiry, including simple practical tests, using simple equipment;	help to decide how to set up and carry out simple comparative and fair tests;	select and plan the most appropriate type of scientific enquiry to use;
	talk about the aim of scientific tests they are working on.	help decide what observations to make, how long to make them for and the type of simple equipment that might be used;	make own decisions about what observations to make, what measurements to use, how long to make them for and whether to repeat them;
		recognise when a fair test is necessary.	set up and carry out comparative and fair tests to answer questions, including recognising and controlling variables where necessary;
			use test results to identify when further tests and observations may be needed, and to make predictions about what might be learned.
<b>Observe and measure changes</b>	<b>Children can:</b>		
	observe the natural and humanly constructed world around them, including observing changes over time;	make systematic and careful observations, including changes over time and ask own questions about what is observed;	make careful and focused observations;
	use simple measurements and equipment (eg hand lenses, egg timers) to gather data and make careful observations.	use a range of equipment, including thermometers and data loggers to take accurate measurements using standard units.	choose the most appropriate equipment to take measurements with increasing accuracy and precision, understanding the importance of taking repeat readings where necessary.

Identify, classify, record and present data	<b>Children can:</b>		
	with some support, use simple features to compare objects, materials and living things and decide how to sort and classify them into groups;	talk about and use criteria for grouping, sorting and classifying;	independently group, classify and describe living things and materials using keys and other information records;
	With support, sort, group, gather and record data in a variety of ways to help answer questions (eg simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables).	collect and record data from own observations and measurements and present it to help answer questions in a variety of ways (eg drawings, labelled diagrams, keys, bar charts and tables).	decide how to record data with increasing complexity from a choice of familiar approaches (eg scientific diagrams and labels, classification keys, tables, scatter graphs, bar graphs and line graphs).
Draw conclusions, notice patterns and present findings			
	with support, begin to notice patterns and relationships between cause and effect, leading to drawing simple conclusions;	use results to draw simple conclusions and make predictions, suggesting improvements to investigations or raising further questions which could be investigated;	use results to draw conclusions based on data and observations and discuss the degree of trust they can have in them;
	use simple and scientific language and share findings through discussion;	report and present results and conclusions to others in written and oral forms with increasing confidence using scientific vocabulary;	independently report and present conclusions to others in written and oral forms such as displays and other presentations, using scientific vocabulary;
Using secondary sources of information	read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at KS1.	use, read and spell scientific vocabulary correctly, and with confidence, using their growing word reading and spelling knowledge.	read, spell and pronounce scientific vocabulary correctly.
	<b>Children can:</b>		
	ask questions and use simple secondary sources to find answers.	recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.	recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact.