KNOWLEDGE PROGRESSION YEAR GROUP OVERVIEW – Working Scientifically

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Strand	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Scientific attitudes	• WSN.1 know how to talk about what they see	• WSR.1 know how to ask questions to find out more. • WSR.2 know how to articulate ideas in full sentences.	• WS1.1 know how to ask simple questions • WS1.2 know how to talk about what they have found out using simple scientific language	• WS2.1 know how to ask simple questions about what they notice and recognise that they can be answered in different ways • WS2.2 know how to communicate their ideas in a variety of ways using to others using simple scientific vocabulary	• WS3.1 know how to draw simple conclusions and use some scientific language to talk about what they have found out • WS3.2 know how to decide which types of scientific enquiry are likely to be the best ways of answering questions through conversations with others	• WS4.1 know how to draw simple conclusions and use some scientific language to write about what they have found out • WS4.2 know how to decide independently which types of scientific enquiry are likely to be the best ways of answering questions	• WS5.1 know how to answer scientific questions using different types of scientific enquiry	• WS6.1 know how to answer scientific questions using different types of scientific enquiry in the most appropriate ways	• WS7.1 know how scientific theories change over time
	• WSN.2 know how to use simple scientific vocabulary in their talk	• WSR.3 know how to use scientific vocabulary in their talk	• WS1.3 know how to read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at Year 1	• WS2.3 know how to read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at Year 2	• WS3.3 know how to read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge at Year 3	• WS4.3 know how to read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge at Year 4	• WS5.2 know how to read, spell and pronounce scientific vocabulary correctly at Year 5	• WS6.2 know how to read, spell and pronounce scientific vocabulary correctly at Year 6	• WS7.2 know and use the terms: accuracy, precision, repeatability and reproducibility
Planning	• WSN.3 know how to ask simple who, what and why questions	• WSR.4 know how to use and understand questions such as 'who; why; when; where and how'	• WS1.4 know how to ask simple scientific questions	• WS2.4 know how to ask simple questions about what they notice and recognise that they can be answered in different ways	• WS3.4 know how to ask relevant questions and decide with others which different types of scientific enquiries could be used to answer them	• WS4.4 know how to ask relevant questions and decide independently which different types of scientific enquiries could be used to answer them			• WS7.3 develop lines of enquiry • WS7.4 make predictions using scientific understanding

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					• WS3.5 know how to set up simple practical enquiries, comparative and fair tests with others	• WS4.5 know how to set up simple practical enquiries, comparative and fair tests independently	• WS5.3 know how to plan different types of scientific enquiries to answer questions, including recognising variables	• WS6.3 know how to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	• WS7.5 identify independent, dependent and controlled variables
Observing and measuring during practical activities		• WSR.5 know some simple scientific equipment	• WS1.5 know how to use simple equipment safely with appropriate support	• WS2.5 know how to use simple equipment safely with reduced support					
		• WSR.6 know some simple ways of recording information, (e.g. bug hunt)	• WS1.6 know how to gather and record data (with appropriate support) to help in answering questions • WS1.7 know how to identify and classify findings with appropriate support	• WS2.6 know how to gather and record data (with reduced support) to help in answering questions • WS2.7 know how to identify and classify findings with reduced support	• WS3.6 know how to make systematic and careful observations and, where appropriate, take measurements (with support), using standard units, a range of equipment safely, including thermometers • WS3.7 know how to gather, record and classify data in a variety of ways to help in answering questions	• WS4.6 know how to make systematic and careful observations and, where appropriate, take measurements, using standard units, a range of equipment safely, including thermometers and data loggers • WS4.7 know how to gather, record and classify and present data in a variety of ways to help in answering questions	• WS5.4 know how to take measurements, using a range of scientific equipment safely, with increasing accuracy and precision, taking repeat readings where appropriate • WS5.5 know how to record data and results of increasing complexity using scientific diagrams and labels, scatter graphs, bar graphs	• WS6.4 know how to take measurements, using a range of scientific equipment safely, with accuracy and precision, taking repeat readings where appropriate • WS6.5 record data and results of increasing complexity using classification keys, tables, line graphs	• WS7.6 choose and use appropriate techniques and wider range of scientific equipment • WS7.7 use a wide range of methods to make and record measurements • WS7.8 apply sampling techniques
			• WS1.8 know how to perform simple tests with appropriate support	• WS2.8 know how to perform simple tests with reduced support					• WS7.9 have a knowledge of risk assessments during practical work

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Analysis	• WSN.4 know how to talk about what is happening	• WSR.7 know how to makes simple observations explain why some things occur, and talks about changes • WSR.8 know how to describe events in order	• WS1.9 know how to use their observations and ideas to suggest answers to questions • WS1.10 know how to explain what they have found	• WS2.9 know how to use their observations and ideas to suggest answers to questions and what they could do next • WS2.10 know how to explain what they have found and how they found it	• WS3.8 know how to report on findings from enquiries, including oral and written explanations • WS3.9 know how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions with the support of others	• WS4.8 know how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • WS4.9 know how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions independently	• WS5.6 know how to report and present findings from enquiries, including conclusions and causal relationships, in oral and written forms such as displays and other presentations	• WS6.6 know how to report and present findings from enquiries, including conclusions and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	• WS7.10 know how to explain data using scientific understanding • WS7.11 know how to use simple statistical techniques, including means of data
					• WS3.10 know how to use straightforward scientific evidence to answer questions or to support their findings				
					• WS3.11 know how to record findings using simple scientific language, drawings, labelled diagrams and tables	• WS4.10 know how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	• WS5.7 know how to present data using a variety of scatter graphs and line graphs	• WS6.7 know how to present data using a variety of graphs	• WS7.12 know how to present data in appropriate methods (tables, bar charts, line graphs) • WS7.13 know how to identify patterns in data to draw conclusions

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					• WS3.12 know how to identify differences, similarities or changes related to simple scientific ideas and processes		• WS5.8 know how to support or refute ideas or arguments using scientific evidence		
Evaluating					• WS3.13 know how to use results to suggest improvements and raise further questions with the support of others	• WS4.11 know how to use results to suggest improvements and raise further questions independently	• WS5.9 know how to use test results to make predictions to set up further comparative and fair tests • WS5.10 know how to discuss the degree of trust in results		• WS7.14 evaluate data, including potential random and systematic errors • WS7.15 identify further questions arising from results
Measurements	• WSN.5 know the words; full, empty, long, short, fast, slow	• WSR.9 know the difference between; full, empty, long, short, fast, slow	• WS1.11 use standard units appropriate for Year 1	• WS2.11 use standard units appropriate for Year 2	• WS3.14 use standard units appropriate for Year 3	• WS4.12 use standard units appropriate for Year 4	• WS5.11 use standard units appropriate for Year 5	• WS6.8 use standard units appropriate for Year 6	• WS7.16 using a range of standard units when measuring