Science Threshold Concepts and Progression

Milestone 1		Milestone 2		Milestone 3	
Working Scientifically – using practical scientific methods, processes and skills					
Plan		**Plan**		**Plan**	
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Ask simple questions about the world around us. • With support, suggest ways of answering a question.	• Ask questions about the world around us. • Recognise that they can be answered in different ways *(different types of enquiry including - observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative tests, finding things out from secondary sources.)*	• Ask some relevant questions. • Use different types of scientific enquiries to answer them. • Begin to make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources. • Set up simple and practical enquiries, comparative and fair tests with some support.	• Ask relevant questions. • Use different types of scientific enquiries to answer questions. • Set up simple and practical enquiries, comparative and fair tests. • Make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources.	• Plan different types of scientific enquiries to answer questions. • Begin to recognise and control variables where necessary. • Begin to select the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Begin to suggest appropriate techniques, apparatus and materials during fieldwork and laboratory work.	• Plan different types of scientific enquiries to answer questions. • Recognise and control variables where necessary. • Select the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Use appropriate techniques, apparatus and materials during fieldwork and laboratory work.
Do		**Do**		**Do**	
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**

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• Make relevant observations using simple equipment. • Conduct simple tests, with support. • Identify and classify with guidance.	• Observe closely, using simple equipment. • Perform simple tests. • Identify and classify • Begin to progress from non-standard units, reading, cm, m, ml, l, °C	• Make systematic and careful observations, using simple equipment. • Use standard units when taking measurements	• Make systematic and careful observations using a range of equipment, including thermometers and data loggers • Take accurate measurements using standard units, where appropriate.	• Select, with support, and use appropriate equipment to take readings. • Take precise measurements using standard units. • Begin to understand the need for repeat readings.	• Use a range of scientific equipment to take measurements • Take measurements with increasing accuracy and precision. • Take repeat readings when appropriate.
Record		**Record**		**Record**	
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Gather and record data with some support, to help in answering questions. • Begin to record simple • data.	• Record and communicate their findings in a range of ways and begin to use simple scientific language. • Gather and record data to help answer questions.	• With modelling and guidance, gather, record, classify and present data in a variety of ways to help to answer questions. • With prompting, use various ways of recording, grouping and displaying evidence and suggest how findings may be tabulated.	• Gather, record, classify and present data in a variety of ways to help to answer questions. • Record findings using simple scientific language, drawings and labelled diagrams. • Record findings using keys, bar charts, and tables.	• Take and process repeat readings. • Record data and results. • Record data using labelled diagrams, keys, tables and charts. • Use line graphs to record data.	• Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar charts and line graphs.
Review		**Review**		**Review**	
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Use their observations and ideas to suggest answers to simple questions.	• Recognise findings. • Use their observations and ideas to suggest answers to simple questions.	• With prompting, suggest conclusions from enquiries. • Suggest how findings could be reported. • Suggest possible improvements or further questions to investigate.	• Report on findings from enquiries, including oral and written explanations, of results and conclusions. • Report on findings from enquiries using	• Report and present findings from enquiries, including conclusions and, with support, suggest causal relationships using appropriate scientific language.	• Report and present findings from enquiries, including conclusions and causal relationships. • Report and present findings from enquiries in oral and written forms such as displays

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			displays or presentations. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Use models and straightforward scientific evidence to answer questions or to support their findings. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	• With support, present findings from enquiries orally and in writing. • Suggest further comparative or fair tests.	and other presentations. • Report and present findings from enquiries, including explanations of, and degree of, trust in results. • Identify scientific evidence (their own and others') that has been used to support or refute ideas or arguments. • Use test results to make predictions to set up further comparative and fair tests.
Threshold Concept End of Milestone 1 Expectation		**Threshold Concept** End of Milestone 2 Expectation		**Threshold Concept** End of Milestone 3 Expectation	
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Skills	• Skills	• Skills	• Skills	• Skills	• Skills
Threshold Concept End of Milestone 1 Expectation		**Threshold Concept** End of Milestone 2 Expectation		**Threshold Concept** End of Milestone 3 Expectation	
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Skills	• Skills	• Skills	• Skills	• Skills	• Skills
Threshold Concept End of Milestone 1 Expectation		**Threshold Concept** End of Milestone 2 Expectation		**Threshold Concept** End of Milestone 3 Expectation	

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Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Skills	• Skills	• Skills	• Skills	• Skills	• Skills