



Expected range:	Scientific Attitudes	Experimental Skills and Investigations	Measurement	Analysis and Evaluation
<p>Working beyond exceptional GCSE 8-9 in Y11</p>	<p>W1 Fluent in their use of the terms accuracy, precision, and can use these concepts to plan and analyse investigations</p> <p>W2 Can demonstrate fluently an understanding that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, with examples, together with the importance of publishing results and peer review</p>	<p>W3 Can confidently make predictions using scientific knowledge and understanding and also accurately predict how other factors may impact outcomes</p> <p>W4 Selects, plans and carries out completely independently the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables.</p> <p>W5 Consistently plans to use appropriate techniques, apparatus, and materials during fieldwork and laboratory work,</p> <p>W6 Independently competent in performing a risk assessment taking account of all major risks</p>	<p>W7 Reliably and consistently able to take measurements using a range of scientific equipment with accuracy and precision and always able to account for error and bias in measurements</p> <p>W8 Fully understands and can explain clearly the reasons to take repeat readings and when it is less appropriate</p> <p>W9 Consistently demonstrates full understanding, and uses SI units and can change between units</p> <p>W10 Independently uses, derives and rearranges simple equations</p> <p>W11 Independently secure in using simple statistical techniques such as finding a mean consistently</p>	<p>W12 Independently Secure in presenting observations and data using appropriate methods, including tables, bar charts and line graphs</p> <p>W13 Confidently interprets observations and data, to identify patterns and relationships between variables and use data to draw scientific conclusions</p> <p>W14 Evaluates data, showing complete awareness of all potential sources of random and systematic error</p> <p>W15 Fully evaluates the reliability of methods and suggest possible improvements for sampling techniques.</p>
<p>Exceptional GCSE 8-9 in Y11</p>	<p>E1 Regularly use correctly HSW terms such as accuracy, precision, and can use these concepts to plan and analyse investigations</p> <p>E2 Demonstrates an understanding 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</p>	<p>E3 Able to make reasonable predictions using scientific knowledge and understanding and also predict how other factors may impact outcomes</p> <p>E4 Selects, plans and carries out with minor assistance the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables.</p>	<p>E7 Reliably and regularly able to take measurements using a range of scientific equipment with accuracy and precision and able to account for error and bias in measurements in most instances.</p> <p>E8 Fully understands when to take repeat readings and when it is less appropriate</p> <p>E9 Consistently understands and</p>	<p>E12 Secure in presenting observations and data using appropriate methods, including tables, bar charts and line graphs</p> <p>E13 Interprets observations and data, to identify patterns and relationships between variables and use data to draw scientific conclusions</p> <p>E14 Evaluates data, showing high</p>

	and peer review	<p>E5 Regularly plans to use appropriate techniques, apparatus, and materials during fieldwork and laboratory work,</p> <p>E6 Competent in performing a risk assessment</p>	<p>uses SI units and can change between units.</p> <p>E10 Uses, derives and rearranges simple equations</p> <p>E11 Is secure in using simple statistical techniques such as finding a mean</p>	<p>awareness of potential sources of random and systematic error</p> <p>E15 Evaluates the reliability of methods and suggest possible improvements apply sampling techniques.</p>
Higher GCSE 6-8 in Y11	<p>H1 Can recognise, define and explain HSW terms such as accuracy, precision, and applying these concepts to plan and analyse investigations</p> <p>H2 Developing an understanding 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</p>	<p>H3 Able to make predictions and use some scientific knowledge and understanding</p> <p>H4 Can plan a valid method with minor assistance to test predictions, including identifying independent, dependent and control variables,</p> <p>H5 Can plan to use appropriate techniques, apparatus, and materials during fieldwork and laboratory work,</p> <p>H6 Able to perform a simple risk assessment</p>	<p>H7 Reliably able to take measurements using a range of scientific equipment with accuracy and precision</p> <p>H8 Understands why in might be important to take repeat readings</p> <p>H9 Can recognise and use SI units</p> <p>H10 Uses and rearranges simple equations</p> <p>H11 Can find an accurate mean from repeat results</p>	<p>H12 Presents observations and data using appropriate methods, including tables and graphs</p> <p>H13 Interprets observations and data, to identify patterns in data to draw conclusions</p> <p>H14 Evaluates data, showing awareness of potential sources of random and systematic error</p> <p>H15 Can evaluate aspects of a method and suggest possible improvements to improve data</p>
Intermediate GCSE 4-6 in Y11	<p>I1 Can recognise and define the terms accuracy and precision, and is beginning to apply these concepts to planning and analysing investigations</p> <p>I2 Can identify independently scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>I3 Can make simple predictions on the relationships between variables using scientific knowledge</p> <p>I4 Can plan a simple method to test predictions. Can recognise, and control, variables and describe control methods</p> <p>I5 With guidance, can plan to use appropriate techniques, apparatus, and materials during fieldwork and laboratory work,</p> <p>I6 Can identify risks in experimental</p>	<p>I7 Beginning to take measurements using a range of scientific equipment with increasing accuracy and precision</p> <p>I8 Beginning to understand why it might be important to take repeat readings</p> <p>I9 Can recognise and write SI units</p> <p>I10 Uses simple equations</p> <p>I11 Can find a mean from repeat results when given a formula</p>	<p>I12 Can record data and results of increasing complexity, drawing tables and graphs with guidance.</p> <p>I13 Interprets observations and data, to identify simple patterns in data to draw conclusions and causal relationships</p> <p>I14 Can describe the degree of trust in results by considering aspects such as spread in data and outliers</p> <p>I15 Suggests simple improvements</p>

		procedures		to data collection processes
Foundation GCSE 2-4 in Y11	<p>F1 Can recognise HSW terms such as accuracy and precision</p> <p>F2 Can identify some scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>F3 Can make very simple predictions about relationships</p> <p>F4 Can identify appropriate equipment to be used in a method and can recognise control variables</p> <p>F5 Can order steps of a method to test relationships</p> <p>F6 Can notice basic risks in experimental procedures</p>	<p>F7 Can record data using decimal notation.</p> <p>F8 Identifies when to take repeat readings</p> <p>F9 Can recognise SI units</p> <p>F11 Can find a mean from repeat results with guidance</p>	<p>F12 Can record data when provided with a table and plot graphs when provided with axis</p> <p>F13 Recognises simple patterns in data and recognises causal relationships</p> <p>F15 Suggests simple improvements to data collection processes</p>
Working Towards Foundation GCSE <2 in Y11	<p>T1 Can recognise HSW terms such as accuracy and precision with support</p> <p>T2 Can identify some scientific evidence that has been used to support or refute ideas or arguments with guidance</p>	<p>T3 Can make very simple predictions about relationships with help</p> <p>T4 Can identify most appropriate equipment to be used in a method and can recognise control variables</p> <p>T6 Can notice at least one basic risk in experimental procedures</p>	<p>T7 Can record data</p> <p>T8 Identifies when to take repeat readings</p>	<p>T12 Can record data when provided with a table and plot graphs when provided with axis with support</p> <p>T13 Recognises simple patterns in data</p> <p>T15 Suggests simple improvements to data collection processes with guidance</p>
Outstanding	Making outstanding progress relative to their starting point (almost meeting expectations for next starting point)			
Above expected	Making more than expected progress relative to their starting point (consistently meeting all expectations)			
Meeting expected	Making expected progress relative to their starting point (mostly meeting expectations for this starting point)			
Working towards	Working towards expected progress for their starting point (consistently below assigned starting point expectations)			