

Science Year 7	Knowledge and Application	Experimental and Investigation Skills	Numeracy, Graphs and Results	Conclusion and Evaluation
Developing	<ul style="list-style-type: none"> <li>I can demonstrate some relevant scientific knowledge and understanding with scaffolding and guidance in familiar contexts.</li> <li>I can answer questions which ask me to add/label/give/state/name.</li> <li>I can use scientific Tier 1 keywords correctly both through oracy and literacy.</li> <li>I can use some Tier 3 words that refer to equipment e.g. beaker, microscope.</li> <li>I can use some correct scientific Tier 1 descriptors in my work such as heating, freezing both through oracy and literacy.</li> <li>I only give brief responses with limited detail.</li> <li>I may give incorrect answers as I only have some understanding of the content.</li> </ul>	<ul style="list-style-type: none"> <li>With help, I can choose a hypothesis from a list.</li> <li>With help, I can state what I will record in an experiment. (dependant variable)</li> <li>With help, I can list the equipment I need to use.</li> <li>I can attempt a method.</li> </ul>	<ul style="list-style-type: none"> <li>I can record some results.</li> <li>Attempts to plot points on a graph. Some may be incorrectly plotted.</li> </ul>	<ul style="list-style-type: none"> <li>With help, I can state the trend I can see in my results.</li> <li>With help, I can identify an anomalous (odd) result.</li> <li>With help, I can state if my data is of good quality and start to give a reason for my decision.</li> </ul>
Securing	<ul style="list-style-type: none"> <li>I can demonstrate mostly accurate and appropriate knowledge and understanding and apply these mostly correctly to familiar contexts.</li> <li>I can begin to apply them to unfamiliar contexts with guidance and scaffolding.</li> <li>I can answer question which ask me to compare/ describe/ draw/ justify.</li> <li>I can use some scientific Tier 3 keywords correctly both through oracy and literacy.</li> <li>I can use the more difficult Tier 2 scientific terms such as estimate and bias some may have alternate uses in everyday language e.g. compound.</li> <li>I can use some correct scientific descriptors in my work such as increases, decreases both through oracy and literacy.</li> <li>I will use full sentences in answers and be able to identify errors.</li> </ul>	<ul style="list-style-type: none"> <li>I can independently write a basic hypothesis.</li> <li>I can describe the pattern I expect to see in my results.</li> <li>I can independently Identify all the variables for my experiment (dependant, independent, some control).</li> <li>I can list all the equipment I need to use.</li> <li>I can write a followable method. Some points may be missing but would still give a valid outcome.</li> <li>I will spot most hazards.</li> </ul>	<ul style="list-style-type: none"> <li>Independently I can draw a results table which has clear headings for each of the columns.</li> <li>Independently I can calculate the mean for a set of results.</li> <li>With guidance, I can plot a line graph. I can draw a simple bar chart It should be labelled.</li> <li>I can convert basic units e.g. cm to m</li> </ul>	<ul style="list-style-type: none"> <li>Independently I can link the variables to identify the trend in my results and use data to support it.</li> <li>I can suggest why an anomalous result may have occurred.</li> <li>I can explain scientifically if my data is of good quality or not, using terms such as accurate, precise, repeatable and reproducible.</li> </ul>
Extending	<ul style="list-style-type: none"> <li>I can demonstrate mostly accurate and appropriate knowledge and understanding and apply these mostly correctly to familiar and unfamiliar contexts. I may need guidance to do this.</li> <li>I can answer question which ask me to calculate/ compare and contrast/ estimate/ plot/ show that.</li> <li>I can use some scientific Tier 3 keywords correctly both through oracy and literacy.</li> <li>I can use some correct scientific descriptors in my work such as increases, decreases both through oracy and literacy.</li> <li>I can start to extend my answers and recognise errors in my work and others.</li> </ul>	<ul style="list-style-type: none"> <li>I can independently write a hypothesis and describe why I would expect to see this.</li> <li>I can give a scientific reason for the pattern I expect to see in my results.</li> <li>I can identify the Independent, Dependant and some control variables and explain how I will keep the controlled variables in my experiment the same.</li> <li>I can state the purpose of measuring/ specialised equipment in my investigation.</li> <li>I can write a method that can be followed by someone else. Measurements will be included.</li> <li>I can spot potential hazards and say how to reduce them.</li> </ul>	<ul style="list-style-type: none"> <li>Independently I can draw an easy to interpret results table which has clear headings for each column and correct units.</li> <li>I can calculate the mean for a set of results; I try to round my answer and take anomalies into account.</li> <li>I can recognise when to draw a line graph or bar chart and plot an accurate, fully labelled graph. A line/ curve of best fit will be drawn with help.</li> <li>I can use equations when they are given to me.</li> <li>With guidance I can use significant figures and orders of magnitude.</li> <li>With guidance I can convert units</li> </ul>	<ul style="list-style-type: none"> <li>I can use experimental data to describe a trend and explain it using relevant scientific knowledge.</li> <li>I can suggest an improvement which would reduce anomalies or improve the quality of my data.</li> <li>I can use data/ evidence to support why my data is of good quality using terms such as accurate, precise, and reproducible.</li> </ul>



Science Year 8	Knowledge and Application	Experimental and Investigation Skills	Numeracy, Graphs and Results	Conclusion and Evaluation
Developing	<ul style="list-style-type: none"> <li>I can demonstrate some relevant scientific knowledge and understanding. These are mostly confined to familiar contexts.</li> <li>I can answer questions which ask me to complete/ give reasons/identify/measure.</li> <li>I can start to use scientific Tier 2 keywords correctly both through oracy and literacy such as chart, comment.</li> <li>I can use the Tier 3 words that refer to equipment e.g. beaker, microscope.</li> <li>I can use some correct scientific Tier 2 descriptors in my work both through oracy and literacy such as weighing.</li> <li>I will give limited responses starting to use full sentences.</li> <li>I can start to see where I am going wrong in answers.</li> </ul>	<ul style="list-style-type: none"> <li>I can state a hypothesis with guidance.</li> <li>I can state the things that need to be kept the same to make my test fair (controlled variables).</li> <li>Independently I can list most of the equipment I need to use.</li> <li>With guidance I can write a simple method. Some points may be missing.</li> <li>I can spot a potential hazard</li> </ul>	<ul style="list-style-type: none"> <li>I can complete a table of results given to me.</li> <li>I can calculate the mean for a set of results with a reminder of how to carry out the calculation.</li> <li>I can place the plots on a line-graph or draw a bar chart when the axes are drawn for me. There may be errors plotting.</li> </ul>	<ul style="list-style-type: none"> <li>With help, I can state the trend I can see in my results.</li> <li>I can identify an anomalous (odd) result.</li> <li>I can state if my data is of good quality and give a reason for my decision.</li> </ul>
Securing	<ul style="list-style-type: none"> <li>I can demonstrate relevant and comprehensive knowledge and understanding and apply these correctly to familiar situations but may be less accurate in unfamiliar contexts.</li> <li>I can answer question which ask me to assess/comment on/ explain/predict/sketch.</li> <li>I can use scientific Tier 3 keywords correctly both through oracy and literacy when reminded.</li> <li>I can use correct scientific descriptors in my work such as increases/decreases, both through oracy and literacy when reminded.</li> <li>I can extend discussions on content and start linking ideas in new content to prior content.</li> <li>I can recognise areas of misconception.</li> </ul>	<ul style="list-style-type: none"> <li>I can independently write a hypothesis and begin to explain why I would expect to see this in my results.</li> <li>I can identify the independent and dependant variables and several control variables. I can explain why my controlled variables need to be kept the same.</li> <li>I can justify why I have chosen to use one piece of equipment over another.</li> <li>I can independently write a repeatable step-by-step method: quantities, and how to measure the dependant variable that will be included.</li> </ul>	<ul style="list-style-type: none"> <li>Independently I can draw a clear, easy to interpret results table in which all of my data is rounded to the same level of precision.</li> <li>Independently I can calculate the mean for a set of results, and I ensure that the value is rounded correctly.</li> <li>I can recognise when to draw a line/curve of best fit on an accurately plotted, fully labelled, suitable graph.</li> <li>I can begin to use significant figures and orders of magnitude.</li> <li>I can convert units when prompted.</li> <li>I can use equations and begin to rearrange.</li> </ul>	<ul style="list-style-type: none"> <li>With guidance, I can interpret data or a line/curve of best fit to state the proportionality of the variables.</li> <li>I can explain why my suggested improvement would reduce anomalies or improve the quality of my data.</li> <li>With guidance, I can interpret range/ error bars on a line graph to suggest the quality of my data in terms of repeatability.</li> </ul>
Extending	<ul style="list-style-type: none"> <li>I can demonstrate relevant and comprehensive knowledge and understanding and apply these correctly to both familiar and unfamiliar contexts using accurate scientific terminology.</li> <li>I can answer question which ask me to deduce/devise/discuss/evaluate.</li> <li>I can use scientific Tier 3 keywords correctly both through oracy and literacy without being prompted e.g. chloroplast, respire. I can use words which have an alternate meaning in the outside world such as work correctly.</li> <li>I can use correct scientific descriptors in my work such as increases, decreases both through oracy and literacy without being prompted.</li> <li>I can elaborate on information and make connections between new knowledge and prior knowledge. I can recognise and correct errors in my work and others.</li> </ul>	<ul style="list-style-type: none"> <li>I can independently write a hypothesis and explain why I would expect to see this in my results.</li> <li>I can identify variables which cannot be controlled in my experiment and explain how I will minimise their impact.</li> <li>I can justify why I have chosen equipment with a particular resolution for my investigation.</li> <li>I can independently write a repeatable step-by-step method: quantities, correct names for equipment and how to measure the dependant variable will be included.</li> </ul>	<ul style="list-style-type: none"> <li>Independently I can draw a clear, easy to interpret results table in which all of the data is recorded to a consistent and appropriate level of precision.</li> <li>Independently I can calculate the mean for a set of results; I ensure any anomalies are taken into account and that the value is rounded to an appropriate level of precision.</li> <li>Independently I can add levels of uncertainty to an appropriate line/curve of best fit on an accurately plotted, fully labelled graph.</li> <li>Independently I can use significant figures and orders of magnitude.</li> <li>I can realise when I need to convert units without prompting.</li> <li>I can use equations and rearrange them before use.</li> </ul>	<ul style="list-style-type: none"> <li>Independently I can interpret data or a line /curve of best fit to state the proportionality of the variables, and link this to relevant scientific knowledge.</li> <li>I can suggest if anomalous results have been caused by a random or systematic error.</li> <li>Independently I can interpret range/error bars on a line graph to suggest the quality of my data in terms of repeatability.</li> </ul>

