

KS3 Assessment Rubric - Science

	Knowledge	Application of knowledge	Experimental Skills and Investigation	Numeracy including Graphs and results	Conclusion and Evaluation
Mastered (8-9)	<p>I can demonstrate relevant and comprehensive knowledge and understanding and apply these correctly to both familiar and unfamiliar contexts using accurate scientific terminology</p>	<p>I can answer question which ask me to deduce/ devise/ discuss/ evaluate</p> <p>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.</p> <p>I can use correct scientific descriptors in my work such as increases, decreases both through oracy and literacy without being prompted</p> <p>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.</p>	<p>I can independently write a hypothesis and explain why I would expect to see this in my results</p> <p>I can identify variables which cannot be controlled in my experiment and explain how I will minimise their impact.</p> <p>I can justify why I have chosen equipment with a particular resolution for my investigation.</p> <p>Independently I can write a repeatable step-by-step method Quantities, correct names for equipment and how to measure the dependant variable will be included</p>	<p>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.</p> <p>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.</p> <p>Independently I can add Levels of uncertainty to an appropriate line/ curve of best fit on an accurately plotted, fully labelled graph.</p> <p>Independently I can use significant figures and orders of magnitude.</p> <p>I can realise when I need to convert units without prompting.</p> <p>I can use equations and rearrange them before use</p>	<p>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.</p> <p>I can suggest if anomalous results have been caused by a random or systematic error.</p> <p>Independently I can interpret range/ error bars on a line graph to suggest the quality of my data in terms of repeatability.</p>
Skilled	<p>I can demonstrate relevant and comprehensive knowledge and understanding and apply these correctly to familiar situations but may be less accurate in unfamiliar contexts.</p> <p>I may need guidance on unfamiliar contexts to make links.</p>	<p>I can answer question which ask me to assess/ comment on/ explain/ predict/ sketch</p> <p>I can use scientific Tier 3 keywords correctly both through oracy and literacy when reminded</p>	<p>I can independently write a hypothesis and begin to explain why I would expect to see this in my results</p> <p>I can Identify the Independent and Dependant variables and several control variables. I can explain why my controlled</p>	<p>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.</p> <p>Independently I can calculate the mean for a set of results and I ensure that the value is rounded correctly.</p>	<p>With guidance, I can interpret data or a line/ curve of best fit to state the proportionality of the variables.</p> <p>I can explain why my suggested improvement would reduce</p>

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		<p>I can use correct scientific descriptors in my work such as increases, decreases both through oracy and literacy when reminded.</p> <p>I can extend discussions on content and start linking ideas in new content to prior content. I can recognise areas of misconception.</p>	<p>variables need to be kept the same.</p> <p>I can justify why I have chosen to use one piece of equipment over another.</p> <p>Independently I can write a repeatable step-by-step method. Quantities and how to measure the dependant variable will be included, correct resolution equipment will be included.</p>	<p>I can recognise when to draw a line/ curve of best fit on an accurately plotted, fully labelled, suitable graph.</p> <p>I can begin to use significant figures and orders of magnitude.</p> <p>I can convert units when prompted.</p> <p>I can use equations and begin to rearrange.</p>	<p>anomalies or improve the quality of my data.</p> <p>With guidance, I can interpret range/ error bars on a line graph to suggest the quality of my data in terms of repeatability.</p>
<p>Confident</p>	<p>I can demonstrate mostly accurate and appropriate knowledge and understanding and apply these mostly correctly to familiar and unfamiliar contexts.</p> <p>I may need some guidance to do this</p>	<p>I can answer question which ask me to calculate/ compare and contrast/ estimate/ plot/ show that</p> <p>I can use some scientific Tier 3 keywords correctly both through oracy and literacy</p> <p>I can use some correct scientific descriptors in my work such as increases, decreases both through oracy and literacy</p> <p>I can start to extend my answers and recognise errors in my work and others.</p>	<p>I can independently write a hypothesis and describe why I would expect to see this.</p> <p>I can give a scientific reason for the pattern I expect to see in my results.</p> <p>I can identify the Independent, Dependant and some control variables and explain how I will keep the controlled variables in my experiment the same</p> <p>I can state the purpose of measuring/ specialised equipment in my investigation.</p> <p>I can write a method that can be followed by someone else. Measurements will be included.</p> <p>I can spot potential hazards and say how to reduce them.</p>	<p>Independently I can draw an easy to interpret results table which has clear headings for each column and correct units.</p> <p>I can calculate the mean for a set of results; I try to round my answer and take anomalies into account.</p> <p>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.</p> <p>I can use equations when given</p> <p>With guidance I can use significant figures and orders of magnitude.</p> <p>With guidance I can convert units</p>	<p>I can use experimental data to support my trend and explain it using relevant scientific knowledge.</p> <p>I can suggest an improvement which would reduce anomalies or improve the quality of my data.</p> <p>I can use data/ evidence to support why my data is of good quality using terms such as accurate, precise, and reproducible.</p>

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<p>Secure (4)</p>	<p>I can demonstrate mostly accurate and appropriate knowledge and understanding and apply these mostly correctly to familiar contexts.</p> <p>I can begin to apply them to unfamiliar contexts with guidance and scaffolding.</p>	<p>I can answer question which ask me to compare/ describe/ draw/ justify</p> <p>I can use some scientific Tier 3 keywords correctly both through oracy and literacy</p> <p>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,</p> <p>I can use some correct scientific descriptors in my work such as increases, decreases both through oracy and literacy</p> <p>I will use full sentences in answers and be able to identify errors</p>	<p>I can independently write a basic hypothesis</p> <p>I can describe the pattern I expect to see in my results.</p> <p>I can Identify all the variables for my experiment (dependant, independent, some control) Independently</p> <p>I can list all the equipment I need to use.</p> <p>I can write a followable method. Some points may be missing but would still give a valid outcome.</p> <p>I will spot most hazards</p>	<p>Independently I can draw a results table which has clear headings for each of the columns.</p> <p>Independently I can calculate the mean for a set of results.</p> <p>With guidance, I can plot a line graph. I can draw a simple bar chart It should be labelled.</p> <p>I can Convert basic units e.g cm to m</p>	<p>Independently I can link the variables to identify the trend in my results and use data to support it.</p> <p>I can suggest why an anomalous result may have occurred.</p> <p>I can explain scientifically if my data is of good quality or not, using terms such as accurate, precise, repeatable and reproducible.</p>
<p>Developing (2)</p>	<p>I can demonstrate some relevant scientific knowledge and understanding. These are mostly confined to familiar contexts</p>	<p>I can answer question which ask me to complete/ give reasons/ identify/ measure</p> <p>I can start to use scientific Tier 2 keywords correctly both through oracy and literacy such as Chart, comment</p> <p>I can use the Tier 3 words that refer to equipment e.g beaker, microscope</p> <p>I can use some correct scientific Tier 2 descriptors in my work such as both through oracy and literacy such as weighing,</p>	<p>I can state a hypothesis? with guidance</p> <p>I can state the things that need to be kept the same to make my test fair (controlled variables).</p> <p>Independently I can list most of equipment I need to use.</p> <p>With guidance I can write a simple method. Some points may be missing</p> <p>I can spot a potential hazard</p>	<p>I can complete a table of results given to me.</p> <p>I can calculate the mean for a set of results with a reminder of how to carry out the calculation.</p> <p>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</p>	<p>With help, I can state the trend I can see in my results.</p> <p>I can identify an anomalous (odd) result.</p> <p>I can state if my data is of good quality and give a reason for my decision.</p>

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		<p>I will give limited responses starting to use full sentences.</p> <p>I can start to see where I am going wrong in answers</p>			
Emerging	<p>I can demonstrate some relevant scientific knowledge and understanding with scaffolding and guidance in familiar contexts.</p>	<p>I can answer question which ask me to add/ label/ give/state/ name</p> <p>I can use scientific Tier 1 keywords correctly both through oracy and literacy.</p> <p>I can use some Tier 3 words that refer to equipment e.g beaker, microscope</p> <p>I can use some correct scientific Tier 1 descriptors in my work such as heating, freezing both through oracy and literacy</p> <p>I only give brief responses with limited detail.</p> <p>I may give incorrect answers as I only have some understanding of the content.</p>	<p>With help, I can choose a hypothesis from a list.</p> <p>With help, I can state what I will record in an experiment. (dependant variable)</p> <p>With help, I can list the equipment I need to use.</p> <p>I can attempt a method.</p>	<p>I can record some results.</p> <p>Attempts to plot points on a graph. Some may be incorrectly plotted.</p>	<p>With help, I can state the trend I can see in my results.</p> <p>With help, I can identify an anomalous (odd) result</p> <p>With help, I can state if my data is is of good quality and start to give a reason for my decision.</p>