

# Year 8: Assessment statements

## Subject: Science



	Curriculum strand 1 – Scientific Thinking	Curriculum strand 2 – Experimental Skills	Curriculum strand 3 – Analysis and Evaluation	Curriculum strand 4 – Communication
<p><b>Excellence</b></p> <p>(Indicative of student who will go on to achieve a grade 7-9 at GCSE, if they continue to progress as they are).</p>	<ul style="list-style-type: none"> <li>- Explain why data is important; identify the consequences of incomplete data.</li> <li>- Identify ethical issues.</li> <li>- Specify ideas of how theories have developed using evidence.</li> <li>- Describe strengths and weaknesses of models.</li> <li>- Construct diagrams to explain scientific ideas of more than one-step.</li> <li>- Explain technological uses of science from given texts.</li> <li>- Identify a limited range of social, personal, environmental, or economic effects of scientific developments</li> </ul>	<ul style="list-style-type: none"> <li>- Use scientific theories and explanations to develop hypotheses.</li> <li>- Plan an experiment to obtain valid results to test a hypothesis.</li> <li>- To be able to identify dependent, independent, and controlled variables in context.</li> <li>- Explain why it is important to have one independent/dependent variable.</li> <li>- State hazards and risks associated with an experiment and identify some control measures.</li> <li>- Apply knowledge of a limited number of techniques to make choices of the most appropriate methods to use</li> </ul>	<ul style="list-style-type: none"> <li>- Have some basic understanding of standard form.</li> <li>- Can select and apply equations and rearrange with some success.</li> <li>- Can accurately calculate means identifying and removing anomalous results. Also, from their own data, justify results.</li> <li>- Describe obvious patterns sets of data, using appropriate data points.</li> <li>- Can select and construct a graph with accurate points and appropriate scales.</li> <li>- Can explain patterns and link to hypothesis.</li> <li>- Covert simple units.</li> <li>- Draw lines of best fit accurately</li> </ul>	<ul style="list-style-type: none"> <li>- Present more complex and detailed ideas in your own words linking to other scientific ideas (area of curriculum).</li> <li>- Uses key terms correctly and fluently, describing and explaining each step in a scientific process</li> <li>- Has confidence in asserting meaning of unfamiliar terms.</li> <li>- Select different resources of information and justify reasons.</li> <li>- Reference sources using a simple, recognized convention.</li> <li>- Make notes and annotate them according to gaps in knowledge.</li> <li>- Give balanced pros /cons for different issues.</li> <li>- Can link some complex scientific ideas to other areas of science</li> <li>- Develop methods for extracting numerical information from a question and manipulating this to find other quantities, with some errors.</li> </ul>
<p><b>Secure</b></p> <p>(Indicative of student who will go on to achieve a grade 5-6 at GCSE, if they continue to progress as they are).</p>	<ul style="list-style-type: none"> <li>- Explain what an ethical issue is.</li> <li>- Describe a process/ idea using a model.</li> <li>- State examples of theories in science</li> <li>- Explain why data is important.</li> <li>- Explain how theories are developed using experiment and observation.</li> <li>- Create/ design a model to explain an idea.</li> <li>- Describe limited strengths and weaknesses of models.</li> <li>- Construct diagrams to explain scientific ideas.</li> <li>- Identify technological uses of science from given texts.</li> <li>- Identify a limited range of social, personal, environmental, or</li> </ul>	<ul style="list-style-type: none"> <li>- Write a hypothesis to test and state whether the hypothesis was correct or incorrect.</li> <li>- Follow a plan for an experiment.</li> <li>- Say whether a method is suitable or not.</li> <li>- Explain how to reduce risks when carrying out investigations</li> <li>- Plan an experiment to obtain observations.</li> <li>- Suggest simple control variables.</li> <li>- State some hazards and risks associated with an experiment and identify some control measures.</li> <li>- Suggest alterations to improve method.</li> <li>- Apply knowledge of a limited number of techniques to make</li> </ul>	<ul style="list-style-type: none"> <li>- Can explain why we should ensure our results are reliable and describe how to do this.</li> <li>- Can describe simple patterns in results (as ___ did ___ then ___ did ___)</li> <li>- Can recall the correct units.</li> <li>- Say what went well in an experiment and how it could be improved.</li> <li>- Remove anomalous results before calculating an average</li> <li>- Spot data points that do not fit the pattern</li> <li>- Can use pre-made formula triangles/ equations with some success.</li> <li>- Can calculate a mean and a range from a data set.</li> <li>- Describe patterns in tables/ graph.</li> <li>- Can construct a graph with appropriate scales.</li> </ul>	<ul style="list-style-type: none"> <li>- Use clear language and well-formed sentences.</li> <li>- Describe each step in a given scientific process</li> <li>- Select different sources to find information.</li> <li>- Reference sources in a simple way.</li> <li>- Make notes by paraphrasing/ condensing but with some inaccuracies.</li> <li>- Present simple ideas in your own words.</li> <li>- Perform simple calculations.</li> <li>- Present more complex and detailed ideas in your own words.</li> <li>- Present values with correct number of significant figures.</li> <li>- Use Key terms and have strategies to remember them.</li> <li>- Give pros / cons for different issues.</li> <li>- Can link simple scientific ideas to other areas of science</li> </ul>

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	economic effects of scientific developments	choices of the most appropriate equipment to use.	<ul style="list-style-type: none"> <li>- Record several sets of results developing their own results table and leaving space for repeat measurements.</li> <li>- Say what went well in an experiment and how it could be improved.</li> </ul>	
<p><b>Developing</b></p> <p>(Indicative of student who will go on to achieve a grade 3-4 at GCSE, if they continue to progress as they are).</p>	<ul style="list-style-type: none"> <li>- Explain what a scientific theory is.</li> <li>- Identify areas of missing data.</li> <li>- Can identify ethical issues from a selection provided.</li> <li>- Describe a theory.</li> <li>- Describe a process/ idea using a model.</li> <li>- Constructing simple diagrams.</li> <li>- Select social, personal, environmental, or economic effects of scientific developments from a given selection.</li> </ul>	<ul style="list-style-type: none"> <li>- With guidance, follow a basic plan.</li> <li>- Write a simple method.</li> <li>- Describe associated risks when carrying out investigations.</li> <li>- Follow a given plan for an experiment to obtain valid results.</li> <li>- Say what you think will happen in an experiment with reasons.</li> <li>- State some hazards and the risks associated with them.</li> <li>- Say whether method is suitable or not.</li> <li>- Name key pieces of scientific equipment and say what they are used for</li> </ul>	<ul style="list-style-type: none"> <li>- Able to identify anomalous results from given data.</li> <li>- Identify a pattern from a graph.</li> <li>- Apply basic arithmetic to practical results (calculate difference and change)</li> <li>- Say what went well in an experiment.</li> <li>- Can say how to carry out an experiment to <b>ensure the results are "correct"</b></li> <li>- Can use premade formulas (triangles / equations) with limited success.</li> <li>- Can record data in a given table and graph.</li> <li>- Can describe simple patterns in results (as ___ did ___ then ___ did ___)</li> <li>- Can label axis with units on graphs.</li> <li>- Can state an obvious observation about an <b>experiment, e.g., 'it bubbled'</b>.</li> <li>- Can select the correct units from a list.</li> <li>- Say what went well in an experiment.</li> </ul>	<ul style="list-style-type: none"> <li>- Uses some key terms, not always correctly.</li> <li>- Able to use some provided resources to find information.</li> <li>- Able to make simple notes from text</li> <li>- Present simple facts clearly.</li> <li>- Perform simple calculations with support.</li> <li>- Give some simple pros/cons for a given issue.</li> <li>- Present simple ideas in your own words.</li> </ul>
<p><b>Foundation</b></p> <p>(Indicative of student who will go on to achieve a grade 1-2 at GCSE, if they continue to progress as they are).</p>	<ul style="list-style-type: none"> <li>- Understand when something is right or wrong when carrying out experiments.</li> <li>- Distinguish between a fact and a theory.</li> <li>- Identify models.</li> <li>- Draw/label simple diagrams with help</li> <li>- Name simple processes</li> </ul>	<ul style="list-style-type: none"> <li>- Complete a method by filling in gaps.</li> <li>- With guidance, follow a basic plan.</li> <li>- Describe what you think will happen in an experiment (pattern/trends/ comparison)</li> <li>- Identify what we can measure, keep the same or change</li> <li>- Identify risks associated with simple hazards</li> <li>- Write a simple method</li> <li>- Name key pieces of scientific equipment, explaining their use.</li> <li>- Follow simple safety rules.</li> </ul>	<ul style="list-style-type: none"> <li>- Can state why an experiment should be repeated.</li> <li>- Make simple observations</li> <li>- Write down a piece of data</li> <li>- Say when results are similar</li> <li>- Record results in a given table</li> <li>- Make simple observations with prompts</li> <li>- Plot points on a graph</li> <li>- Describe results simply</li> </ul>	<ul style="list-style-type: none"> <li>- Uses some key terms, not always correctly.</li> <li>- Able to use some provided resources to find information.</li> <li>- Able to make simple notes from text</li> <li>- Present simple facts clearly</li> <li>- State their own opinion</li> <li>- Match simple terms to definitions.</li> <li>- Highlight key words in a piece of text</li> </ul>