

**Subject: Science**

These are the objectives a student on each Pathway needs to achieve by the end of year 9, to ensure they are making expected progress:

	<b>Objective 1: Develop scientific knowledge and understanding.</b>	<b>Objective 2: Develop understanding of the processes and methods through scientific enquiry.</b>	<b>Objective 3: Understand the implications of science by drawing on evidence and through evaluation.</b>
<b>Exceptional performance</b>	<p>Link scientific processes and phenomena from unfamiliar contexts, using relevant and specific detail with accurate spelling and grammar in a sustained way.</p> <p>Critique benefits and risks of scientific developments in different economic, social and cultural contexts, and explain how these decisions may be influenced by different people.</p> <p>Use a range of appropriate scientific and mathematical conventions to communicate ideas, using correct units and prefixes for a range of measurements.</p>	<p>Independently construct the most appropriate format for presenting quantitative and qualitative scientific data for the purpose of the communication.</p> <p>Create models that link abstract scientific processes and phenomena; make secure connections between abstract ideas and their models.</p> <p>Construct hypotheses on their own to carry out investigations that will generate valid data, including being able to recognise all significant variables (including dependent, independent and control), explain why particular pieces of equipment are appropriate, collect repeated readings at suitable ranges and intervals and produce risk assessments that consult appropriate resources.</p>	<p>Interpret and link data that they have collected from investigations that they have formulated, in a variety of formats of their own construction and provide detailed, accurate explanations for inconsistencies.</p> <p>Draw valid conclusions that utilise more than one piece of relevant evidence and consider alternative conclusions. All conclusions should be supported using extensive scientific knowledge. Evaluate the quality of their data by explaining strengths and limitations, using this to formulate improved methodology.</p>
<b>Pathway 1</b>	<p>Link scientific processes and phenomena using relevant and specific detail with accurate spelling and grammar in a sustained way.</p> <p>Evaluate benefits and risks of scientific developments in different economic, social or cultural contexts, and suggest how these decisions may be influenced by different people.</p> <p>Use a range of appropriate scientific and mathematical conventions to communicate ideas, using correct units and prefixes for a range of measurements.</p>	<p>Evaluate different formats for presenting quantitative and qualitative scientific data that is appropriate to the purpose of the communication.</p> <p>Link abstract scientific processes and phenomena using ideas and models; make secure connections between abstract ideas and/or models.</p> <p>Construct hypotheses on their own to carry out investigations including being able to recognise all significant variables (including dependent, independent and control), explain why particular pieces of equipment are appropriate, collect repeated readings at suitable ranges and intervals and produce risk assessments that consult appropriate resources.</p>	<p>Interpret and link data in a variety of formats and provide detailed, accurate explanations for inconsistencies.</p> <p>Draw valid conclusions that utilise more than one piece of relevant evidence, supported using scientific knowledge and evaluate the quality of their data by explaining strengths and limitations.</p>

## KS3 Assessment – Year 9 Progress Grid

<b>Pathway 2</b>	<p>Analyse scientific processes and phenomena using relevant and specific detail with accurate spelling and grammar in a sustained way.</p> <p>Compare benefits and risks of scientific developments in different economic, social or cultural contexts.</p> <p>Use a range of appropriate scientific and mathematical conventions to communicate ideas, using correct units for a range of measurements.</p>	<p>Justify appropriate formats for presenting quantitative and qualitative scientific data that is appropriate to the purpose of the communication.</p> <p>Explain abstract scientific processes and phenomena using ideas and models; make secure connections between abstract ideas and/or models.</p> <p>Test hypotheses on their own to carry out investigations including being able to recognise all significant variables (including dependent, independent and control), explain why particular pieces of equipment are appropriate, collect repeated readings at suitable ranges and intervals and produce risk assessments that consult appropriate resources.</p>	<p>Interpret data in a variety of formats and provide detailed, accurate explanations for inconsistencies.</p> <p>Draw valid conclusions that utilise more than one piece of relevant evidence, supported using scientific knowledge and evaluate the quality of their data by identifying strengths and limitations.</p>
<b>Pathway 3</b>	<p>Explain scientific processes and phenomena using relevant and specific detail with accurate spelling and grammar.</p> <p>Explain arguments for and against the use of scientific developments in different economic, social or cultural contexts, and how these decisions may be influenced.</p> <p>Use a range of appropriate scientific and mathematical conventions to communicate ideas.</p>	<p>Select appropriate formats for presenting quantitative and qualitative scientific data that is appropriate to the purpose of the communication.</p> <p>Explain scientific processes and phenomena using ideas and models, make simple connections between ideas and/or models.</p> <p>Plan and carry out investigations from a given hypothesis, being able to recognise all significant variables (including dependent, independent and control), explain why particular pieces of equipment are appropriate, collect repeated readings at suitable ranges and intervals and produce risk assessments that consult appropriate resources.</p>	<p>Interpret data in a variety of formats and provide accurate explanations for inconsistencies.</p> <p>Draw conclusions that utilise more than one piece of evidence, and how to resolve errors in data through improvements to methods. .</p>