

**Year 11 - Science**

<b>Curriculum intent</b>	<p>Science in Year 11 will consolidate the knowledge and the understanding of ideas developed in earlier key stages in the subject disciplines of biology, chemistry and physics. Learners will further deepen their understanding of the nature, processes and methods of science through different types of scientific enquiries that help them to answer scientific questions about the world around them, therefore providing learners with the foundations for understanding the natural world that will enhance their lives in an increasingly technological society</p>					
<b>Term</b>	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>Knowledge</b>	<p><b>Homeostasis and response:</b> Learners will use a range of investigative techniques to understand that cells in the body can only survive within narrow physical and chemical limits.</p> <p><b>Chemical Analysis:</b> Learners will use a range of investigative techniques to understand analysts have developed a range of qualitative tests to detect specific chemicals.</p>	<p><b>Waves:</b> Learners will use a range of investigative techniques to understand waves carry energy from one place to another and can also carry information.</p> <p><b>Inheritance, variation &amp; evolution:</b> Learners will use the different types of reproduction and use a range of investigative techniques to study the structure and importance of DNA. They will also use a</p>	<p><b>Using resources:</b> Learners will use a range of investigative techniques to understand industries use the Earth's natural resources to manufacture useful products.</p> <p><b>Magnetism &amp; Electromagnetism:</b> Learners will use a range of investigative techniques to understand that electromagnetic effects are used in a</p>	<p><b>Ecology:</b> Learners will use a range of investigative techniques to understand all species live in ecosystems composed of complex communities of animals and plants dependent on each other and that are adapted to particular conditions, both abiotic and biotic.</p> <p><b>Space (Triple only):</b> Learners will learn about the formation of the solar system, and the beginning</p>	Revision	



	<p><b>Chemistry of the atmosphere:</b> Learners will use a range of investigative techniques to understand the Earth's atmosphere is dynamic and forever changing. The causes of these changes are sometimes man-made and sometimes part of many natural cycles.</p>	<p>range of investigative techniques to understand the variation between different species and the theory of evolution.</p>	<p>wide variety of devices.</p>	<p>and future of the universe.</p>		
<p><b>Skills</b></p>	<p><b>The following skills will be developed throughout the whole of GCSE Science and will enable learners to build a deep understanding of science:</b></p> <p><b>Development of scientific thinking:</b></p> <ul style="list-style-type: none"><li>• Using and applying scientific models to known and unknown scenarios.</li><li>• Explaining and evaluating every day and technological applications of Science.</li><li>• Evaluate risks both in practical science and the wider societal context, including perception of risk in relation to data and consequences.</li><li>• Recognise the importance of peer review of results and of communicating results to a range of audiences.</li></ul> <p><b>Experimental skills and strategies:</b></p>					



- Developing hypothesis and predictions
  - Planning and devising experiments to test these and other scientific phenomena.
  - Selecting the correct scientific equipment and ensuring that experiments are carried out safely and accurately.
  - Make and record observations and measurements using a range of apparatus and methods.
  - Evaluate methods and suggest possible improvements and further investigations.
- Analysis and Evaluation**
- Presenting observations and other data using appropriate methods.
  - Translating data from one form to another.
  - Carrying out and represent mathematical and statistical analysis.
  - Representing distributions of results and make estimations of uncertainty.
  - Interpreting observations and other data (presented in verbal, diagrammatic, graphical, symbolic or numerical form), including identifying patterns and trends, making inferences and drawing conclusions.
  - Presenting reasoned explanations including relating data to hypotheses.
  - Being objective, evaluating data in terms of accuracy, precision, repeatability and reproducibility and identifying potential sources of random and systematic error.
  - Communicating the scientific rationale for investigations, methods used, findings and reasoned conclusions through paper-based and electronic reports and presentations using verbal, diagrammatic, graphical, numerical and symbolic forms.
- Scientific vocabulary, quantities, units, symbols and nomenclature**
- Use scientific vocabulary, terminology and definitions.
  - Recognise the importance of scientific quantities and understand how they are determined.
  - Use SI units (eg kg, g, mg; km, m, mm; kJ, J) and IUPAC chemical nomenclature unless inappropriate.
  - Use prefixes and powers of ten for orders of magnitude (eg tera, giga, mega, kilo, centi, milli, micro and nano).
  - Interconvert units.
  - Use an appropriate number of significant figures in calculation

<b>Assessments</b>	End of half term test & HFL'S	End of half term test & HFL'S	End of half term test & HFL'S	End of half term test & HFL'S	End of half term test & HFL'S	End of half term test & HFL'S
<b>Enrichment</b>	Lit & Phil evening lectures Revision					



**Rayner Stephens**  
HIGH SCHOOL