

LONG TERM PLANNING [Year 11 2023- 2024](#)

AUTUMN TERM 1: SEPT - OCT	AUTUMN TERM 2: OCT - DEC	SPRING TERM 1: JAN - FEB
<p>Genes, inheritance and selection: B5 Global challenges: B6</p>	<p>Predicting and identifying reactants and products: C4 Global challenges: C6</p>	<p>Radioactivity: P6 Global Challenges: P8</p>
<p><u>Genes, inheritance and selection</u> B5.1 Inheritance B5.2 Natural selection and evolution</p> <p><u>Global challenges</u> B6.1 Monitoring and maintaining the environment B6.2 Feeding the human race B6.3 Monitoring and maintaining health</p>	<p><u>Predicting and identifying reactants and products</u> C4.1 Predicting chemical reactions C4.2 Identifying the products of chemical reactions</p> <p><u>Global Challenges</u> C6.1 Improving processes and products C6.2 Organic chemistry C6.3 Interpreting and interacting with earth systems</p>	<p><u>Radioactivity</u> P6.1 Radioactive emissions P6.2 Uses and hazards</p> <p><u>Global Challenges</u> P8.1 Physics on the move P8.2 Powering Earth P8.3 Beyond Earth</p>

Working Scientifically

AO: Through the content across all three disciplines, students should be taught so that they develop understanding and first-hand experience of:

- The development of scientific thinking
 - understanding how scientific methods and theories develop over time
 - using a variety of models to develop scientific explanations and understanding
 - appreciating the power and limitations of science and considering ethical issues which may arise
 - explaining every day and technological applications of science; evaluating associated personal, social, economic and environmental implications; and making decisions based on the evaluation of evidence and arguments
 - evaluating risks both in practical science and the wider societal context, including perception of risk.
 - recognising the importance of peer review of results and of communication of results to a range of audiences.
- Experimental skills and strategies
 - using scientific theories and explanations to develop hypotheses
 - planning experiments to make observations, test hypotheses or explore phenomena
 - applying a knowledge of a range of techniques, apparatus, and materials to select those appropriate to the experiment
 - carrying out experiments appropriately having due regard to the correct manipulation of apparatus, the accuracy of measurements and health and safety considerations
 - recognising when to apply a knowledge of sampling techniques to ensure any samples collected are representative
 - making and recording observations and measurements using a range of apparatus and methods
 - evaluating methods and suggesting possible improvements and further investigations.
- Analysis and evaluation
 - applying the cycle of collecting, presenting and analysing data, including:
 - presenting observations and other data using appropriate methods
 - translating data from one form to another
 - carrying out and representing mathematical and statistical analysis
 - representing distributions of results and making estimations of uncertainty
 - interpreting observations and other data, 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.

SPRING TERM 2: FEB – MAR	SUMMER TERM 1: APR - MAY	SUMMER TERM 2: JUN - JUL
Revision	Revision	Revision
Vocabulary, Units, Symbols and Nomenclature		
<p>AO: use scientific vocabulary, units, symbols and nomenclature</p> <ul style="list-style-type: none"> • developing their use of scientific vocabulary and nomenclature • recognising the importance of scientific quantities and understanding how they are determined • using SI units and IUPAC chemical nomenclature unless inappropriate • using prefixes and powers of ten for orders of magnitude (e.g. tera, giga, mega, kilo, centi, milli, micro and nano) • interconverting units • using an appropriate number of significant figures in calculations <p>S&L AF1: Talk in purposeful and imaginative ways to explore ideas and feelings, using non-verbal features for clarity and effect</p>		