



The curriculum for this stage of students' education has been designed to build upon their prior knowledge from year 9 and 10 Physics. This course provides a worthwhile background for all students, whether or not they intend to go on to study Physics beyond GCSE. The course enables students to acquire a body of scientific knowledge and develop an understanding of the ideas and applications of Physics e.g. Energy, Forces and Motion, Waves and the Electromagnetic Spectrum. This is set in the context of knowing and understanding a body of scientific facts. Students acquire an understanding and experience of the methods used in science and of the application of experimental techniques in everyday life.

<p>HALF TERM 1: Electromagnetic Spectrum and Light</p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • The Electromagnetic Spectrum. • Light, IR, Microwave and Radio Waves. • Infrared Light Investigation. • Communications. • Ultraviolet waves, X-Rays and Gamma Rays. • X-Rays in Medicine. • Light and Colour. To understand how white light interacts with objects (T). • Lenses. To understand how a convex and concave lens focuses and magnifies light (T). <p>HOW THIS WILL BE ASSESSED: Students will be assessed by a progress test half way through the topic as well as an end of topic assessment.</p>	<p>HALF TERM 2: Magnetism and Electromagnetism, Space</p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • Magnetic fields: Understand the shape of magnetic fields • Electromagnetism and its use • The motor effect and using it • The generator effect and a.c. generation • How microphones work • Understand how transformers work <p>HALF TERM 2: Space Physics</p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • The Life cycle of stars: • The solar system and its orbits: E • Red-shift and the big bang: Evaluate the evidence for the big bang theory <p>HOW THIS WILL BE ASSESSED: Students will be assessed by a progress test half way through the topic as well as an end of topic assessment.</p>	<p>HALF TERM 3: Lenses</p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • Lenses and images: Understand how concave and convex lenses refract light • Constructing ray diagrams: Construct diagrams for refraction in concave and convex lenses • Magnification and calculations: Understand how to use the magnification formula and rearrange it • Magnetic fields: Understand the shape of magnetic fields <p>HOW THIS WILL BE ASSESSED: Students will be assessed by a progress test half way through the topic as well as an end of topic assessment.</p>
<p>HALF TERM 4:</p> <p>Consolidation, Revision and Past Papers</p>	<p>HALF TERM 5:</p> <p>Consolidation, Revision and Past Papers</p>	

Embedding this knowledge can be supported at home by reviewing class notes, guided learning wider reading, exam practice questions, independent research and study, completing set independent study tasks, watching in scientific documentaries and understanding current issues in the scientific world. In addition, use the AQA website, BBC Bitesize and GCSEPOD in conjunction with suitable revision guides.



The curriculum for this stage of students' education has been designed to build upon their prior knowledge from year 9 & 10 GCSE Biology. This course provides a worthwhile background for all students, whether or not they intend to go on to study Biology beyond GCSE. The course enables students to acquire a body of scientific knowledge and develop an understanding of the ideas and applications of Biology e.g. how cells work, how diseases are combatted, how organisms control their internal environment and are affected by the external environment leading to adaptations and evolution of new species. This is set in the context of knowing and understanding a body of scientific facts. Students acquire an understanding and experience of the methods used in science and of the application of experimental techniques in everyday life.

HALF TERM 1: Inheritance, Variation & Selection – 2

STUDENTS MUST KNOW:

- How variation occurs
- The evidence for evolution including fossil evidence
- The theory of evolution & speciation
- How mendelian genetics occurs
- How selective breeding is carried out
- How genetic engineering is carried out
- The role of extinction in evolution
- How antibiotic resistance evolves in bacteria
- How we classify living organisms

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress

HALF TERM 2 Cell Biology & Organisation- Revision

STUDENTS MUST KNOW:

- Cells are the basic unit of all forms of life.
- Animal and plant cells structure.
- Cell division & cell specialisation
- The role of stem cells and stem cell technology
- How molecules move in/out of cells.
- How cells are organised and the digestive system
- The function of the heart, blood and blood vessels
- A range of lifestyle disease causes and effects
- How cancer is caused and treated
- How plant tissues and organs are arranged and function

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 3: Infection and Response

STUDENTS MUST KNOW:

- How Communicable (infectious) diseases are caused and spread.
- Examples of diseases caused by the 4 types of pathogen: viruses, bacteria, fungi & protists.
- How human defence mechanisms work
- How we become immune to diseases
- How vaccinations work and what they contain
- The discovery of antibiotics and what they do
- How we use painkillers & drug development

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 4: Homeostasis, Inheritance, Variation & Selection

STUDENTS MUST KNOW:

- The structure & function of the human nervous system
- How reflexes aid the body & the function of synapses
- The role of hormones in the body
- The hormonal control of the human reproductive cycle
- The evidence for evolution including fossil evidence
- How selective breeding is carried out
- How genetic engineering is carried out
- How we classify living organisms

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 5 Inheritance, Variation & Selection & Bioenergetics

STUDENTS MUST KNOW:

- How variation occurs
- The evidence for evolution including fossil evidence
- How selective breeding is carried out
- How genetic engineering is carried out
- How antibiotic resistance evolves in bacteria
- How we classify living organisms
- How photosynthesis & respiration occur
- How cells obtain their energy to power metabolism

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

HALF TERM 6: Final Revision & Examinations

STUDENTS MUST KNOW:

- Revision for examinations

HOW THIS WILL BE ASSESSED:

Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.

Embedding this knowledge can be supported at home by using the AQA website, BBC Bitesize and GCSEPOD in conjunction with suitable revision guides.





The curriculum for this stage of students' education has been designed to ensure students understand how scientific methods and theories develop over time. Building on work done in Year 9 and 10, they will use representational, spatial, descriptive, computational and mathematical models to solve problems, make predictions and to develop scientific explanations and understanding. Students will appreciate the power and limitations of science and be able to consider ethical issues which may arise. They will be able to explain the technological applications of science; evaluate associated personal, social, economic and environmental implications; and make decisions based on the evaluation of evidence and arguments. Students will evaluate risks both in practical science and the wider societal context, while recognising the importance of peer review of results and of communicating results to a range of audiences.

HALF TERM 1: BONDING, STRUCTURE AND PROPERTIES

STUDENTS MUST KNOW:

- Bonding in Covalent molecules, Properties of Simple Covalent compounds, Drawing Dot-cross diagrams of Covalent molecules, Properties, structure and uses of Giant covalent molecules, Comparing Simple and Giant Covalent molecules, Metallic Bonding.

HOW THIS WILL BE ASSESSED:

A Progress Test halfway through the topic to address misconceptions, followed by an assessment completed at the end of each topic.

HALF TERM 2: CHEMICAL CHANGES

STUDENTS MUST KNOW:

- pH and Neutralisation, Strong and Weak acids, Making Salts from Metals, Metal oxides, Metal Hydroxides, and Carbonates, Making and separating soluble and insoluble salts, The Reactivity Series and Metal reactions, Electrolysis, Writing Half-equations, Predicting the products of electrolysis (CuSO_4 and NaCl).

RP1- Making a soluble salt from insoluble oxide or carbonate

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HALF TERM 3: QUANTITATIVE CHEMISTRY

STUDENTS MUST KNOW:

- Calculating RAM and RFM, Writing and balancing symbol equations, Calculating empirical formula, Predicting Masses made in reactions, Reacting Masses and Limiting Reactants.

HOW THIS WILL BE ASSESSED:

A Progress Test halfway through the topic to address misconceptions, followed by an assessment completed at the end of each topic.

HALF TERM 4: ORGANIC CHEMISTRY II

STUDENTS MUST KNOW:

- Examples of Homologous Series, Alkenes and their Reactions, Alcohols and their reactions, Carboxylic Acids and their reactions, Esters, Why Carboxylic Acids are Weak acids, Addition and Condensation polymerisation, Structure of Amino Acids, Structure of DNA, Natural polymers.

HOW THIS WILL BE ASSESSED:

A Progress Test halfway through the topic to address misconceptions, followed by an assessment completed at the end of each topic.

HALF TERM 5: REVISION

STUDENTS MUST KNOW:

- How to apply their knowledge of the content learnt to exam style questions. Firstly looking back to Paper 1 content, reviewing topics 1-5. Then moving onto Paper 2 content, reviewing topics 6-10. As well as constantly reviewing required practicals and how these can be assessed in exams.

HOW THIS WILL BE ASSESSED:

External examinations in May/June.

HALF TERM 5: REVISION

STUDENTS MUST KNOW:

- How to apply their knowledge of the content learnt to exam style questions.

HOW THIS WILL BE ASSESSED:

External examinations in May/June.

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