

## Curriculum Intent

Students develop:

- essential knowledge and understanding of different areas of the subject and how they relate to each other.
- and demonstrate a deep appreciation of the skills, knowledge and understanding of scientific methods.
  - competence and confidence in a variety of practical, mathematical and problem solving skills.
- their interest in and enthusiasm for the subject, including developing an interest in further study and careers associated with Biology.

Understand how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society (as exemplified in 'How Science Works').

Biology helps us to understand how organisms are structured and function. It helps us discover how the world works, our place, impact, role and the responsibilities we have. To explore how scientific ideas, develop and how we learn by experimentation. We are committed to providing a stimulating, engaging and intellectually challenging learning environment to enable all our students to develop scientific consciousness, from the basic biological molecules of organisms to species interactions within ecosystems.

## What do students *do* with this knowledge or these skills?

We aim to create the very best Biologists. We challenge students to think, act and speak like those working in the field would. We do this through quality first teaching and adhering to an established scheme of work encouraging the pursuit of knowledge and facts and applying these to unfamiliar contexts. We teach content from basics through to advanced concepts building in depth and breadth from previous taught work.

Practical activities are embedded within the learning outcomes of the course to encourage practical activities in the classroom which contribute to the achievement of the Practical Endorsement as well as enhancing learners' understanding of biological theory and practical skills.

## How does the KS5 curriculum build on that from KS4?

The study of life itself, A level Biology explores the theories and principles involved in living systems, in all their intricate beauty. Topics studied include: lifestyle, transport, genes and health, development, plants and the environment, the natural environment and species survival, energy, exercise and co-ordination, as well as practical biology and research skills. By the end of the course you will know about the principles of genetics, molecules, taxonomy, natural selection, evolutionary theory, global warming, bacteria and viruses, and more. You will gain an understanding of how society makes decisions about scientific issues, as well some of the ways in which the scientific community contributes to the success of the economy and society.

What new knowledge or skills are students taught?		
Term	Year 12	Year 13
<b>Autumn</b>	Foundations in Biology: <ul style="list-style-type: none"> <li>• Cell structure</li> <li>• Biological molecules</li> <li>• Nucleotides &amp; nucleic acids</li> <li>• Enzymes</li> <li>• Biological membranes</li> <li>• Cell division, diversity and organisation</li> </ul>	Communication, Homeostasis and Energy <ul style="list-style-type: none"> <li>• Communication and homeostasis</li> <li>• Excretion</li> <li>• Neuronal communication</li> <li>• Hormonal communication</li> <li>• Plant and animal responses</li> <li>• Photosynthesis</li> <li>• Respiration</li> </ul>
<b>Spring</b>	Exchange and Transport <ul style="list-style-type: none"> <li>• Exchange surfaces</li> <li>• Transport in animals</li> <li>• Transport in plants</li> </ul>	Genetics, Evolution and Ecosystems & Revision <ul style="list-style-type: none"> <li>• Cellular control</li> <li>• Patterns of inheritance</li> <li>• Manipulating genomes</li> <li>• Cloning and biotechnology</li> <li>• Ecosystems</li> <li>• Populations and sustainability</li> </ul>
<b>Summer</b>	Biodiversity, Evolution and Disease <ul style="list-style-type: none"> <li>• Communicable diseases</li> <li>• Biodiversity</li> <li>• Classification and evolution</li> </ul>	<ul style="list-style-type: none"> <li>• Revision &amp; GCE Examinaitons.</li> </ul>

<p><b>Rationale for this sequencing</b></p>	<p>OCR A provides a flexible approach to teaching. The specification is divided into topics, each covering different key concepts of biology. Teaching of practical skills is integrated with the theoretical topics and they are assessed through the written papers.</p> <p>For A level only, the Practical Endorsement will also support the development of practical skills.</p>
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### Additional support at home

<p><b>Additional reading</b> for enjoyment, enhancement and extension</p>	<ul style="list-style-type: none"> <li>• Spillover by David Quammen</li> <li>• The Deep by Alex Rogers</li> <li>• Sapiens by Yuval Noah Harrai</li> </ul>
<p><b>Online resources</b> to practice, consolidate and revise</p>	<ul style="list-style-type: none"> <li>• <a href="#">Physics and maths tutor</a></li> <li>• <a href="#">Cognito Resources</a></li> <li>• <a href="#">Save My Exams</a></li> </ul>
<p><b>Workbooks &amp; revision guides</b> to practice, consolidate and revise</p>	<ul style="list-style-type: none"> <li>• <a href="#">CGP Revision Guide &amp; Workbook</a></li> </ul>