



The intent of the Year 11 Biology curriculum is to develop skills and knowledge that both broaden and deepen the curriculum learned in Year 10. Some previous content will be revisited and built upon, in addition to some new topics and concepts that pupils have not met. Biology in Year 11 provides an insight into the work of Gregor Mendel in genetics, with pupils later studying and health and disease, exploring human and plant infections before looking at future advances in medicine.

We aim to:

- Instil curiosity about the natural world and how life is structured and sustained.
- Develop pupils' ability to observe, question, and investigate living organisms using scientific methods.
- Further develop critical thinking and problem-solving skills.
- Promote understanding about our origin as a species through evolution.
- Develop pupils' ability to observe, question, and investigate living organisms using scientific methods.
- Encourage the use of correct scientific vocabulary to describe biological processes clearly and confidently.
- Develop foundational knowledge of human health, including the main types of pathogen and examples of human and plant infectious disease.
- Explore the development of new medicines and pioneering treatments for disease, such as stem cell treatments.
- Encourage scientific thinking through practical investigations, reinforcing theoretical knowledge with hands-on experience.
- Foster curiosity about biological systems, preparing pupils for more advanced study in GCSE Biology and beyond.

Through engaging, practical lessons and real-world applications, pupils will begin to understand the relevance of biology to themselves, society, and the wider world.

Note: Pupils follow the OCR Gateway A specification for the Sciences, whether this is Separate Science or Combined Science. Combined Science do not cover all details described below in the table, the key differences can be identified by the specifications linked below.

Link to Separate Science specification for Biology (J247) - [OCR GCSE \(9-1\) Biology A \(Gateway Science\) J247 Specification](#)

Link to Combined science specification (J250) - [GCSE - Gateway Science Suite - Combined Science A \(9-1\) - J250](#)



Year 11			
Term	Topic	Knowledge and Skills	Useful Links
1	B5 – Genes, Inheritance and Selection	Knowledge: Pupils studying reproduction learn about asexual and sexual reproduction, focusing on how meiosis produces gametes with half the genetic material. They explore Mendelian inheritance, understanding how traits are passed through dominant and recessive alleles. This leads to the study of genetic variation, which is essential for natural selection—the process where advantageous traits become more common in a population. Over time, this drives evolution, the gradual change in species. By connecting genetics with evolution, pupils grasp how life adapts and diversifies through inherited traits and environmental pressures. Skills: Pupils develop analytical skills by interpreting scientific data, identifying trends, and drawing conclusions. They learn to accurately construct and complete Punnet squares to demonstrate inheritance. Through graph analysis, pupils extract key information, building confidence in handling and presenting scientific information effectively.	GCSE Biology (Single Science) - OCR Gateway - BBC Bitesize Biology Lessons GCSE Biology OCR Gateway Higher Triple Cognito Educake - Online Formative Assessment for Homework and Classwork
Assessments		Regular informal assessment via past paper question practise in lesson time or set for homework. This develops the skills required for answering the GCSE examinations in Year 11, such as decoding questions, command word interpretation and formulating answers appropriate to the numbers of marks available.	



		A mid-unit low-stakes assessment and a more formal end-of-unit assessment are completed under exam conditions. Pupils are informed of these in advance with revision opportunities given for homework and in class, if time permits. These assessments are designed to check understanding of key concepts and identify areas for improvement. Pupils receive feedback on both assessments, with time allocated in class to review answers and address misconceptions. Checklists that breakdown learned criteria are also used in the unit to help pupils monitor their own progress and reflect on their understanding of the content.	
2	B6 – Global Challenges	Knowledge: Pupils begin by learning sampling techniques to study ecosystems, helping them measure biodiversity—the variety of life in an area. They explore the importance of conservation in protecting endangered species and maintaining ecological balance. Later, they study pathogens, understanding how microorganisms cause disease. This leads to learning about vaccination, which helps prevent infections by stimulating the immune system. Finally, they explore how new medicines are developed through research, testing, and clinical trials. This sequence helps pupils connect ecological health with human health, emphasizing the importance of science in protecting both the environment and public well-being. Skills: Pupils interpret data on vaccination and disease incidence, drawing conclusions about the effectiveness of vaccination programmes. Pupils also consider the	GCSE Biology (Single Science) - OCR Gateway - BBC Bitesize Biology Lessons GCSE Biology OCR Gateway Higher Triple Cognito Educake - Online Formative Assessment for Homework and Classwork



		advantages and disadvantages of new medicines and stem cell treatments, developing reasoning skills. These activities strengthen scientific thinking and quantitative analysis in contexts relevant to human health.	
Assessments		Regular informal assessment via past paper question practise in lesson time or set for homework. This develops the skills required for answering the GCSE examinations in Year 11, such as decoding questions, command word interpretation and formulating answers appropriate to the numbers of marks available. A mid-unit low-stakes assessment and a more formal end-of-unit assessment are completed under exam conditions. Pupils are informed of these in advance with revision opportunities given for homework and in class, if time permits. These assessments are designed to check understanding of key concepts and identify areas for improvement. Pupils receive feedback on both assessments, with time allocated in class to review answers and address misconceptions. Checklists that breakdown learned criteria are also used in the unit to help pupils monitor their own progress and reflect on their understanding of the content.	