

<b>Exam Board:</b>	AQA
<b>Qualification:</b>	GCSE Biology 8461
<b>Assessment Information:</b>	2 exams of 105 minutes each

[Link to official specification](#)

**Department Information:**

*Physics, Biology and Chemistry are popular and successful subjects at Furze Platt. The Department aims to provide a supportive, stimulating, dynamic and academically challenging experience for all students. Over recent years, the Department has gone from strength to strength, and standards and students' results are high. In Year 10, those students studying the Separate Biology GCSE course will receive 4 hours of Biology per fortnight.*

**ACHIEVE in the curriculum:**

*The curriculum has been designed with the ACHIEVE values at its core. Lessons have been written to encourage **ambition** and have also been written with the intent of being enjoyable and giving opportunities for students to celebrate their own successes. **Collaboration** is a key aspect of the scientific method and students will develop this and their **versatility** through the use of class practical activities, as well as through paired and group classwork. Students will develop **integrity** through their completion of independent home learning and through self-marking and peer-marking their work. Students will develop **endurance** through the completion of consolidatory activities such as past exam papers.*

**Curriculum Aims and Intent:**

*The AQA GCSE Biology course is intended to:*

- **Foster a deeper understanding of biology:** *By the end of the course, learners should have a comprehensive grasp of key biological principles and be able to explain how these relate to real-world applications in fields like medicine, agriculture, and environmental science.*
- **Promote scientific inquiry and investigation:** *The course encourages students to develop practical skills, such as using microscopes, conducting experiments, and analysing data. Through these activities, learners gain insight into scientific methods and how biological knowledge is constructed and validated.*
- **Prepare students for further study:** *The course lays the foundation for learners interested in pursuing further studies in biology, including A-levels or vocational qualifications, or careers in biology-related fields such as healthcare, biotechnology, and environmental science.*
- **Equip students with transferable skills:** *Learners are trained to think critically, solve problems, analyse information, and communicate scientific ideas effectively, all of which are key skills for future academic and professional success.*
- **Increase awareness of biology's impact on society:** *The course emphasizes the relevance of biology in daily life, from understanding how our bodies work to appreciating the challenges related to health, food security, and climate change.*

*By the end of the AQA GCSE Biology course, students will:*

- *Understand the structure and function of biological systems at molecular, cellular, and organism levels.*
- *Appreciate the processes and mechanisms that sustain life, such as respiration, photosynthesis, and homeostasis.*
- *Grasp the principles of genetics and evolution, including how variation leads to adaptation and biodiversity.*
- *Be able to explain how biological knowledge is applied in medicine, agriculture, and environmental management.*

- Understand the importance of evidence and experimentation in building scientific knowledge.
- Recognise how human activity affects ecosystems and the steps we can take to mitigate negative impacts.

#### Resources:

- Oxford University Press GCSE Textbook (available on Kerboodle or Amazon) <https://www.amazon.co.uk/AQA-GCSE-Biology-Student-Book/dp/0198359373>
- Revision guide for Separate Science: <https://www.amazon.co.uk/AQA-GCSE-Biology-Revision-Guide/dp/0198359403>
- Oxford University Press GCSE Biology workbook
- Kerboodle <https://kerboodle.com>
- BBC Bitesize <https://www.bbc.co.uk/bitesize>
- GCSEPod
- Focus eLearning (useful for practicals)
- PMT (for past paper questions) <https://www.physicsandmathstutor.com/biology-revision/gcse-aqa/>

#### How we keep parents informed:

*Year 10 - Progress reports are published 4 times per year, in October, November, March and July, with a face-to-face parents' evening in March.*

#### How parents can help their child:

*Regularly check Class Charts to keep track of homework that has been set and make sure that test dates are noted*

*Assist with homework where possible and make sure that students are revising for tests using revision guides, Kerboodle and BBC Bitesize*

*Purchase revision guides and workbooks (via Amazon or Parentmail)*

*Encourage the completion and marking of past paper questions*

*Liaise with teachers and attend Parents' evening*

#### What we study and when:

Term	Unit, Topic or Summary of Work Covered	Knowledge, Understanding & Skills Developed	ACHIEVE / Personal Development Focus	How The Work Is Assessed	Careers Links
1	<b>B5: Communicable Disease</b>	<ul style="list-style-type: none"> <li>• The different types of pathogens and the diseases they cause.</li> <li>• The mechanisms of disease transmission.</li> <li>• The methods and safety precautions for culturing microorganisms.</li> <li>• The use of antiseptics and antibiotics in controlling disease.</li> <li>• The body's defence systems, including the immune response.</li> </ul>	<p><b>Collaboration:</b> Completion of a required practical.</p> <p><b>Versatility:</b> Application of theoretical concepts.</p>	<p>This chapter will be assessed in an end-of topic test.</p> <p>There will be a longer response question (6 marker) on <b>B5.9</b></p>	<ul style="list-style-type: none"> <li>• Microbiologist</li> <li>• Epidemiologist</li> <li>• Immunologist</li> <li>• Public Health Official</li> <li>• Pharmaceutical Scientist</li> <li>• Pathologist</li> <li>• Nurse or Doctor (Infectious Disease Specialist)</li> </ul>

		<ul style="list-style-type: none"> <li>The issues surrounding antibiotic resistance.</li> </ul>	<p><b>Ambitious:</b> Additional research on pathogens and disease.</p>	<p><b>on human defence mechanisms.</b></p>	<ul style="list-style-type: none"> <li>Biomedical Scientist</li> </ul>
2	<b>B6: Preventing and Treating Disease</b>	<ul style="list-style-type: none"> <li><b>Understanding Vaccination:</b> Explain how vaccines work to protect against diseases and the importance of vaccination programs.</li> <li><b>Antibiotic Use and Resistance:</b> Describe the use of antibiotics to treat bacterial infections and the problems associated with antibiotic resistance.</li> <li><b>Drug Development and Testing:</b> Outline the process of developing and testing new drugs, including preclinical and clinical trials.</li> <li><b>Preventing Infection:</b> Identify methods of preventing the spread of infectious diseases, such as hygiene practices, and the role of public health measures.</li> <li><b>Monoclonal Antibodies:</b> Explain how they are made, what they are used for and their advantages and disadvantages.</li> </ul>	<p><b>Versatility:</b> Application of theoretical concepts.</p> <p><b>Integrity:</b> Discussion regarding vaccination and drug testing.</p>	<p>This chapter will be assessed in an end-of topic test.</p> <p>There will be a longer response question (6 marker) on <b>B6.4 on drug testing.</b></p>	<ul style="list-style-type: none"> <li>Pharmacologist</li> <li>Vaccine Developer</li> <li>Clinical Trial Coordinator</li> <li>Immunologist</li> <li>Pharmaceutical Sales Representative</li> <li>Doctor</li> <li>Biomedical Scientist</li> <li>Infectious Disease Specialist</li> <li>Biotechnologist</li> <li>Public Health Officer</li> </ul>
3	<b>B8: Photosynthesis</b>	<ul style="list-style-type: none"> <li>The concept of photosynthesis</li> <li>Adaptations of the leaf to make photosynthesis more efficient</li> <li>The factors affecting the rate of photosynthesis</li> <li>The uses of glucose in the plant</li> <li>How to adjust limiting factors to achieve maximum yield</li> </ul>	<p><b>Collaboration:</b> Completion of a required practical.</p> <p><b>Versatility:</b> Application of theoretical concepts.</p>	<p>This chapter will be assessed in an end-of topic test.</p> <p>There will be a longer response question (6 marker) on the <b>required practical.</b></p>	<ul style="list-style-type: none"> <li>Plant Scientist (Botanist)</li> <li>Agricultural Scientist</li> <li>Horticulturist</li> <li>Forestry Manager</li> <li>Environmental Scientist</li> <li>Biochemist</li> <li>Renewable Energy Specialist (Bioenergy)</li> <li>Hydroponics or Vertical Farming Specialist</li> <li>Conservation Scientist</li> <li>Food Scientist</li> </ul>
3	<b>B9: Respiration</b>	<ul style="list-style-type: none"> <li>State the word and symbol equation for respiration</li> <li>State where aerobic respiration takes place in the cell</li> <li>What are the key differences between aerobic and anaerobic respiration?</li> <li>How does the body respond to exercise?</li> <li>Why is it important for muscles to store glycogen? How can this be used during respiration?</li> </ul>	<p><b>Versatility:</b> Application of theoretical concepts.</p>	<p>This chapter will be assessed in an end-of topic test.</p> <p>There will be a longer response</p>	<ul style="list-style-type: none"> <li>Exercise Physiologist</li> <li>Sports Scientist</li> <li>Personal Trainer</li> <li>Biochemist</li> <li>Respiratory Therapist</li> <li>Dietitian/Nutritionist</li> <li>Doctor</li> </ul>

		<ul style="list-style-type: none"> <li>• What is produced during anaerobic respiration in muscle cells?</li> <li>• How is oxygen debt repaid?</li> <li>• What is the role of the liver during respiration?</li> </ul>	<b>Ambitious:</b> Design an exercise programme.	question (6 marker) on <b>B9.2 on the effect of exercise.</b>	<ul style="list-style-type: none"> <li>• Physiotherapist</li> <li>• Bioengineer (Biotechnology or Medical Devices)</li> <li>• Occupational Therapist</li> <li>• Cardiologist</li> </ul>
4 + 5	<b>B10: Human Nervous System</b>	<ul style="list-style-type: none"> <li>• <b>Homeostasis:</b> Understand the concept of homeostasis and how the nervous system helps maintain internal conditions.</li> <li>• <b>Structure and Function of the Nervous System:</b> Know the main parts of the nervous system and understand how they work together to respond to stimuli.</li> <li>• <b>Reflex Arc:</b> Be able to describe the reflex arc and the neurones involved; be able to describe the role of the synapses.</li> <li>• <b>The Brain:</b> Familiarize yourself with the major parts of the brain (cerebrum, cerebellum, medulla) and their functions.</li> </ul> <p><b>The Eye:</b> Know the major parts of the human eye, how the eye focuses light, and common problems of the eye.</p>	<p><b>Collaboration:</b> Completion of a required practical.</p> <p><b>Versatility:</b> Application of theoretical concepts.</p>	<p>This chapter will be assessed in an end-of topic test.</p> <p>There will be a longer response question (6 marker) on “The Reflex Arc.” This will be assessed in <b>B10.3.</b></p>	<ul style="list-style-type: none"> <li>• Neurologist</li> <li>• Neuroscientist</li> <li>• Endocrinologist</li> <li>• Psychiatrist</li> <li>• Neuropsychologist</li> <li>• Physiotherapist</li> <li>• Ophthalmologist</li> <li>• Biomedical Engineer (Neurotechnology)</li> <li>• Neurosurgeon</li> <li>• Pharmacologist (Neuropharmacology)</li> <li>• Reflexologist</li> <li>• Occupational Therapist</li> </ul>
5+6	<b>B11: Hormonal Coordination</b>	<ul style="list-style-type: none"> <li>• <b>The Endocrine System:</b> Know the major glands of the endocrine system (pituitary, thyroid, adrenal, pancreas, ovaries, testes), their functions and how many of their relative hormones are controlled by negative feedback.</li> <li>• <b>The Control of Blood Glucose:</b> Know how the pancreas controls blood glucose levels and how this links into diabetes and its treatment.</li> <li>• <b>Human reproduction:</b> Know the main human reproductive organs and how hormones interact in the menstrual cycle.</li> <li>• <b>Fertility:</b> Understand a number of different types of contraception, and how hormones can be used to treat infertility.</li> <li>• <b>Plant Hormones:</b> Understand how plants respond to light and gravity, and how plant hormones are used in agriculture and horticulture.</li> </ul>	<p><b>Versatility:</b> Application of theoretical concepts.</p> <p><b>Integrity:</b> Sensitive discussion regarding IVF and contraception.</p> <p><b>Collaboration:</b> Completion of a required practical.</p>	<p>This chapter will be assessed in an end-of topic test.</p> <p>There will be a longer response question (6 marker) on “Contraception Evaluation.” This will be assessed in <b>B11.7.</b></p>	<ul style="list-style-type: none"> <li>• Endocrinologist</li> <li>• Obstetrician/Gynaecologist</li> <li>• Pharmacologist</li> <li>• Biomedical Scientist (Endocrine Research)</li> <li>• Clinical Scientist (Endocrinology)</li> <li>• Genetic Counsellor (Endocrine Disorders)</li> <li>• Clinical Psychologist (Hormonal Influence on Behaviour)</li> </ul>