

Biology

Awarding Body: AQA

Level: A-Level

Introduction

Biology is a challenging and engaging subject. It enables us to make advances in our understanding of how living organisms function and it provides the means to design new methods for diagnosing and treating diseases.

If you are interested in Biology and have enjoyed studying it at GCSE, then the A-level course presents the perfect opportunity to extend your studies and deepen your understanding of this fascinating subject. A-level Biology gives you a detailed insight into the key concepts and principles that underpin our understanding of living organisms and the way they interact with each other and their surroundings. It will challenge and develop your problem solving, numeracy, communication, experimentation and analytical skills. Your study of Biology will involve a combination of practical work and theory and is taught in a well-equipped laboratory by our team of very experienced staff.

Year one content

Your study will look at many aspects of Chemistry and will develop further the topics learned during the AQA GCSE Trilogy Science and GCSE Biology courses.

Your study within year one will include the following:

- **Biological molecules** (monomers & polymers, carbohydrates, proteins, lipids, nucleic acids, ATP, water)
- **Cells** (structure of prokaryotic and eukaryotic cells; viruses; methods of studying cells; the cell cycle and cell division, transport across membranes, cell recognition and the immune system)
- **Exchange** (surface area to volume ratio, gas exchange, digestion and absorption, mass transport)
- **Genetics** (DNA, genes & chromosomes, DNA & protein synthesis, genetic diversity, taxonomy, biodiversity)

Year two content

- **Energy transfers between organisms** (photosynthesis, respiration, energy and ecosystems, nutrient cycles)
- **Responses to environment** (survival and response; receptors; control of heart rate; the nervous system; muscle structure and function, homeostasis)
- **Population genetics & evolution** (inheritance; populations; speciation; ecosystems)
- **Control of gene expression** (mutation; totipotency; transcription & translation; cancer genetics; genome research)

The final assessment of the course will consist of three written exams, all of which will be taken in June of the second year of teaching.

The assessment of practical work will be included both in the written exams and through a *practical endorsement*. This will assess students' practical capabilities throughout the course and is issued alongside the A-level grade as either a Pass or Fail.

What you need

Biology is available as part of the academic pathway, and as such has the same entry requirements as this pathway in addition to a grade 5 or higher within GCSE Biology (or grade 5/5 in GCSE Combined Science).

The course has some overlap with A-Level Mathematics, with up to 10% of the marks available within written assessments being 'Level 2' mathematics. It is for this reason that anyone considering Biology at A-Level requires a grade 5 or higher for GCSE Maths.

Prospective students should also be confident and secure in their knowledge and understanding of GCSE Chemistry.

Career and further study

An A-Level in Biology is a highly versatile qualification and can enable you to progress to higher level study in any number of fields, most obviously Science or Medicine.

Textbook

You are expected to purchase your own textbook.

Trips

We have arranged for all A-level Biology students to attend Woolley Firs Environmental Centre in Maidenhead to complete the fieldwork aspect of their course. This will give them experience in using a range of fieldwork equipment and methods of sampling to obtain data which will then be statistically analysed. The cost of the trip will be £14 (current as of September 2022).