

Biology

Why study Biology?

Biology A level involves the study of a wide range of exciting topics, ranging from molecular biology to the study of ecosystems and from microorganisms to mammoths. If you are interested in the detail of how processes in the body work, in health and disease, the variety of life on Earth, the flow of energy through ecosystems and how nutrients are recycled in the environment, how homeostasis, coordination and gene expression are carried out at a cellular level, then this is the right A level for you!

Biology is a great choice of subject for students who want a career in environmental, health and clinical professions, such as medicine, dentistry, veterinary science, physiotherapy, pharmacy, optometry, nursing, zoology, marine biology, environmental sciences or forensic science.

What does the course cover and what is expected of you?

Both AS and A-level biology are separate qualifications; students will sit all their AS exams at the end of the first year and all their A-level exams at the end of their second year. The A-level grade is only made up of the exam results received at the end of the A-level course; the AS results do not contribute towards this.

AS Biology is a 1 year course consisting of 4 main teaching topics; 1 – Development of practical skills, 2 – Cells and Biological molecules, 3 – Exchange and transport in animals and plants, and 4 – Biodiversity, evolution and disease.

Those who go onto the full A-level will study a further two units in their second year. The units covered are; 5 – Communication, homeostasis and energy, 6 –Genetics, evolution and ecosystems.

Throughout both courses, practical activities are planned to develop students' investigative skills, build on their knowledge and understanding of experimental design, methodology, use of specialist equipment, data collection, analysis and evaluation. This knowledge is assessed in all written exams. A-level students are required to complete a practical endorsement by undertaking a non-exam assessment component which rewards the development of practical competency in biology and is teacher assessed. Students will demonstrate competence in a range of skills and techniques in a minimum of 12 assessed practical activities. This is a pass or fail element of the course and does not affect the overall A level grade.

The AS exam papers are sat at the end of the AS course, in two 1 hour 30 minute papers (worth 50% each) which covers any content from unit 1 - 4 , with questions on relevant practical skills.

For the A-level, two 2 hour 15 minute papers (worth 37% each) and one 1 hour 30 minute paper (worth 26%) are sat at the end of the two year course covering all of the teaching content (units 1 – 6) with questions on relevant practical skills included. Students will also have to have completed the practical endorsement.

Pupils will be taught a minimum of 4 lessons per week with support tutorials being organised when necessary. Most of the course content is teacher-led; theory work is backed up by appropriate practical work, problem solving tasks, individual and group activities. However to complete the courses successfully a minimum of 8 hours a week of independent study is required. There is an extensive range of books and scientific journals, both in the main School Library and the Biology

Department as well as access to the Internet. Students are encouraged to make full use of the well-equipped laboratories (modern data-logging equipment, computers, video microscopes etc) during school hours and to see themselves, along with the Science Staff, as enthusiastic members of the A level team intent on achieving the highest standards.

Where can it take you?

Studying A level Biology allows progression into many areas:

- Specialist areas of Biology; including Biology, Microbiology, Biochemistry, Medicine, Pharmacy or any degree course requiring a high level of analytical and evaluative skills.
- Biochemistry which is a broad based scientific degree giving good grounding in scientific techniques. This would offer opportunities for employment in the scientific laboratories of, e.g. the pharmaceutical industry, the food manufacturing industry or hospital laboratories.
- There are opportunities for careers in environmental work following qualifications in specialised areas such as marine biology, freshwater biology or ecology.
- There are the more traditional courses in which A Level Biology is important, e.g. Medicine, Dentistry, Veterinary Science, Environmental Health Care, Pharmacy, Pharmacology, Physiotherapy and Nursing.

Entry requirements

Prospective students should preferably have achieved a Grade 6 or above in Double Award Science (or equivalent). Students should be aware that the course has a strong biochemical bias and that mathematical calculations form an integral part of the course. The scientific language used in this course is of a complex nature and students need to remember that elements of all papers focus on comprehension analysis, extended responses and an essay which is required in paper 3 as well as specialist subject knowledge.

Exam Board

OCR

Student View

Biology A-level has been really good fun, we have covered a huge range of interesting topics, like classification, health and disease, immunology and genetics. There is a lot of information to learn and understand so you have to be really interested to put the effort in to do well in exams which are quite hard. Teachers are always available for support after school; you have to do a lot of background work to do well in this area. I've loved it and want to study more at university when I leave!

Teachers Tip

A-level Biology is a challenging but fascinating subject; you will be taught through direct teaching by specialist subject teachers with lots of experience of making Biology A-level as interesting, visual and accessible as possible to deaf students, alongside regular practical opportunities and application studies, biology focused trips, project group work and a lot of individual study; this recipe will enable you to achieve your potential in this subject. If you enjoyed Biology at GCSE and are enthusiastic about extending your knowledge, come and talk to us to see if Biology A-level is right for you.

