

A-LEVEL BIOLOGY

WHY STUDY BIOLOGY AT A-LEVEL?

A-level Biology is a challenging and rewarding course that will give you a deep understanding of the living world, from the smallest molecules to the largest ecosystems. You will learn about the fundamental principles of biology, including evolution, genetics, and ecology, and you will have the opportunity to develop essential scientific skills such as designing and carrying out experiments, analysing data, and drawing conclusions. These skills are highly transferable and will be valuable in any career.

TOPICS STUDIED

MODULE 1

Development of practical skills in Biology

This module covers the essential practical skills that students need for success in A-Level Biology. Students will learn how to design and carry out experiments, collect and analyse data, and draw conclusions.

MODULE 2

Foundations in Biology

This module covers the fundamental principles of biology, including cell structure and function, biochemistry, genetics, and evolution.

MODULE 3

Exchange and transport

This module covers how substances are exchanged and transported within and between organisms. Students will learn about the different types of transport systems, including diffusion, osmosis, and active transport.

MODULE 4

Biodiversity, evolution & disease

This module covers the diversity of life on Earth, how evolution has shaped this diversity, and how diseases are caused and spread. Students will learn about the different types of organisms, the mechanisms of evolution, and the immune system.

MODULE 5

Communication, homeostasis and energy

This module covers how organisms communicate with each other and their environment, how they maintain homeostasis, and how they obtain and use energy. Students will learn about the endocrine system, the nervous system, and photosynthesis.

MODULE 6

Genetics, evolution and ecosystems

This module covers the principles of genetics, how evolution works at the population level, and how ecosystems function. Students will learn about inheritance, genetic variation, and natural selection.

In addition to these six modules, students also need to complete a practical endorsement in order to achieve the full A-level qualification. This endorsement is awarded to students who have demonstrated the ability to plan, carry out, and analyse practical investigations.

ASSESSMENT STRUCTURE

ASSESSMENT 1

Biological Processes (Module 1, 2, 3 and 5)

- Written exam: 2 hours and 15 minutes
- 100 marks
- 37% of A-level

ASSESSMENT 2

Biological Diversity (Module 1, 2, 4 and 6)

- Written exam: 2 hours and 15 minutes
- 100 marks
- 37% of A-level

ASSESSMENT 3

Unified Biology (synoptic exam including all modules)

- Written exam: 1 hour and 30 minutes
- 70 marks
- 26% of A-Level

PRACTICAL COMPONENT

Completion of 12 required practicals across the course

- Teacher assessed



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ENTRY REQUIREMENTS

Grade 6 in GCSE Biology or
Grade 6-6 in GCSE Combined Science

CAREER PATHWAY

Biology is a highly sought-after subject by employers, and studying A-Level Biology will open up a wide range of career opportunities for you. You could go on to study biology, biochemistry, genetics, or other related subjects at university, or you could pursue a career in medicine, dentistry, veterinary science, or research. Biology is also a highly relevant subject for many other careers, such as environmental science, food science, and biotechnology.

IS THIS COURSE FOR ME?

Yes, if you have enjoyed the GCSE course and have a real interest in learning more deeply about the interconnected systems in our body, the complex interactions within ecosystems and taking a bigger picture approach to biological systems. A-Level biology develops a vast array of key skills within our students. To perform well, good mathematical skills are essential for you, especially if you desire going on to study beyond A-Levels. A-Level biology is an essential course for anybody looking to go on and study biological science, and is very supportive of applicants for medicine, dentistry and veterinary courses.

NEED MORE INFORMATION?

Please contact Mr Stephen Butler, Subject Lead Science, sbutler@lighthall.co.uk

Link to exam board specification: <https://www.ocr.org.uk/Images/687834-download-a-level-specification.pdf>

READING LIST

- Head Start to A-Level Biology (CGP Books)
- A Short History of Nearly Everything (Bill Bryson)
- Life On Earth (David Attenborough)
- The Selfish Gene (Richard Dawkins)
- Wilding: The Return of Nature to A British Farm (Isabella Tree)
- Bad Science (Ben Goldacre)
- The New Scientist (magazine)
- Nature Digest (Online daily subscription)

