

Biology at KS5

Overview

Biology at A level is an information-rich course designed to develop theoretical and practical scientific skills, knowledge and understanding. It offers exciting insights into the contemporary world of science.

Biology is a multidisciplinary subject that is made up of many different and interdependent fields.

Students study biology in a range of different contexts, including aspects of industrial and everyday life, which requires them to investigate and solve problems.

A Level Biology

Students will sit two AS examinations at the end of year 12 (AQA 7401) and three A2 examinations at the end of year 13 (AQA 7402).

Year 12

During Year 12 the students will cover four main areas:

Section 1: Biological molecules

- Different types of molecules such as carbohydrates, fats and proteins
- The structure of DNA and methods of replication

Section 2: Cells

- Their general structure and ways of studying them
- Movement in and out of cells
- The immune response

Section 3: Organisms exchange substances with their environment

- Gas exchange in a variety of animals and plants
- Mass transport in animals & plants

Section 4: Genetic information, variation and relationships between organisms

- DNA, genes and chromosomes
- Genetic diversity
- Biodiversity

During the year, students will cover six required practicals

Year 13

Section 5: Energy transfer in and between organisms

- Photosynthesis
- Respiration
- Energy and ecosystems

Section 6: Organisms respond to changes in their environments

- Stimuli, both internal and external
- Nervous coordination
- Principles of homeostasis and negative feedback

Section 7: Genetics, populations, evolution and ecosystems

- Inheritance and speciation

Section 8: The control of gene expression

- How the alteration of the sequence of bases in DNA can alter the structure of proteins
- Regulation of transcription and translation
- Gene technologies

During the year the students will cover six required practicals.