

Biology

Pearson Edexcel A Level Biology B (9BI0)

Head of Department: Mr Adam Hedges

Introduction

Biology at Epsom has been at the core of the College since 1855 due to the strong links it enjoys with the Royal Medical Foundation. Biology at Epsom enjoys excellent state of the art resources such as genetic engineering machinery, including a PCR machine and gel electrophoresis kits. This is in addition to the wealth of natural history specimens we have in our very own museum.

A-level biology is a demanding course that aims to develop the intellectual and practical abilities needed to understand the biological and medical sciences, as they exist today. It requires students to rapidly assimilate and apply large volumes of information, and therefore suits those who are both self-disciplined and organised in addition to their genuine interest in the subject.

If you are interested in discovering about why bees live in social groups but grizzly bears don't, or understanding how altitude affects human physiological performance, then studying biology may be for you!

Subject Requirements

Grade 8 or 9 in IGCSE biology (or equivalent). Students studying the Double Award science course should be aiming for 8,8 to pursue biology A-level.

Course Outline

There are ten core topics covered over the two years. Practical work is at the heart of the course and involves both lab work and fieldwork to encompass the ecological aspects of the A-level.

Lower Sixth topics:

Topic 1: *Biological Molecules*

Topic 2: *Cells, Viruses and Reproduction of Living Things*

Topic 3: *Classification and Biodiversity*

Topic 4: *Exchange and Transport*

Topic 8: *Origins of Genetic Variation*

Topic 10: *Ecosystems*

Upper Sixth topics:

Topic 5: *Energy for Biological Processes*

Topic 6: *Microbiology and Pathogens*

Topic 7: *Modern Genetics*

Topic 9: *Control Systems*

Higher Education and Careers

The range of careers and future opportunities open to biologists is almost endless. The transferrable skills gained mean they are well placed to pursue a range of future careers, from medicine and research

to finance and law. A large percentage of students who study biology A-level at Epsom go on to life sciences degrees at university with popular choices including biology, biochemistry, biomedical science and natural sciences courses. Often, to study these courses at top Russell Group universities, students need at least one other science subject (inclusive of maths) alongside biology A-level.

What should I study alongside biology?

Chemistry, maths, physics, psychology, geography and PE all complement biology, and it is important to study another science subject or maths alongside it if a biology-related degree course is a possibility.

Is there anything else I should consider?

There is a large jump in the complexity of questions from GCSE to A-level and students should anticipate a huge step up when they start in the Lower Sixth. Perseverance and resilience, along with a commitment to the large volume of work required outside of lessons, is essential. The department has developed a scaffolded program to support students' consolidation and extension work outside of the classroom, and they must engage with this from the start of the course to maximise their chances of a top grade.