

6th FORM BIOLOGY

Courses available:

OCR Advanced Subsidiary GCE in Biology H021.

OCR Advanced GCE in Biology H421

International Baccalaureate Standard Level (SL)

International Baccalaureate Higher Level (HL)

Why 6th Form Biology?

Because you enjoy what you have read, seen on television and experienced in lessons, or perhaps because you like the challenges which this multidisciplinary subject offers and feel that it will prepare you for your intended university course and career?

Rapid evolution of the Biology syllabus has occurred recently, encouraging students to tackle exciting new concepts, building upon a broad foundation of knowledge. Whatever the reason for choosing Biology, you should find it to be both interesting and rewarding.

How is the programme structured?

AS / A2 Biology

Students follow a modular Biology course (i.e. modules are sat in January and June of both AS & A2 years. Modules may be resat and grade forecasts for UCAS are based upon the results gained). AS certification is determined by 3 modules: two separate theory papers plus internally assessed coursework. A2 is awarded after a further two theory modules and again uses internally assessed coursework. There are 8 periods per week of Biology during the AS year and 9 ppw during the A2 year, providing a very rigorous preparation for university Biology.

Some of the areas explored include:

AS	A2
Biological molecules	Nerves
Cytology	Hormones
Transport across membranes	Excretion
Enzyme kinetics	Photosynthesis
Cell cycle	Respiration
Gas exchange	Cellular control
Transport in humans & plants	Genetics, meiosis and variation
DNA & protein synthesis	Biotechnology
Diet and food production	Cloning in plants and animals
Health and Disease	Genomes and gene technologies
Biodiversity	Ecosystems
Classification	Populations and sustainability
Evolution	Plant responses
Field Trip to the School's Field Study Centre	Animal behaviour

What does success at A level Biology require?

Prep and revision for exams must be seen by students as opportunities for independent learning. 6th Form Biologists must spend a minimum of three hours per week researching essays, answering structured question papers and writing up practicals, and be prepared to read around the subject. Sound analytical, practical and communication skills are essential for success, although we hope these will develop during the course.

Ideally, A level Chemistry should be taken in tandem with Biology for those embarking on a Biology related career. Physics, Mathematics, Further Mathematics and Geography also make excellent additional subjects. Most universities expect Medical and Veterinary Science students to have studied Biology and Chemistry with Mathematics and / or Physics, with high A grades expected at A2 and a minimum of 5 or 6 GCSEs at A* (for students educated in the UK) with the remainder at A grade or higher. The elite universities may soon require applicants to gain A* at A level (from 2010), which is achieved by gaining at least 80% overall in the A level and have scored at least 90% in total for the 3 A2 modules in the U6.

IB Biology

Students follow a linear Biology course which is assessed terminally. The subject is examined by three separate theory papers plus internally assessed coursework. Much of the SL Biology is covered by the GCSE Biology syllabus and few topics are explored at great depth. SL Biology is not an appropriate preparation for a Biology related degree course. Students who gain A* at GCSE Biology would be expected to aim for a level 6/7 at SL Biology. There are 4 periods per week of Biology during the IB1 year and 4 ppw during the IB2 year.

Some of the areas explored include:

Standard (SL)	Higher (HL)
Biological molecules	Biological molecules
Cytology	Cytology
Transport across membranes	Transport across membranes
Enzyme kinetics	Enzyme kinetics
Cell division	Cell division
Human diet	Human diet (advanced)
Nerves	Nerves
Hormones	Hormones (advanced)
Blood transport	Blood transport (advanced)
Exercise	Exercise
Health and disease	Health and disease
Gas exchange	Gas exchange
Muscle physiology	Muscle physiology
Trip to the School's Field Study Centre	Trip to the School's Field Study Centre
Respiration	Respiration (advanced)
Ecosystems	Ecosystems
Populations and sustainability	Populations and sustainability
DNA & protein synthesis	DNA & protein synthesis
Genetics	Genetics
Genomes and gene technologies	Genomes and gene technologies
Photosynthesis	Photosynthesis (advanced)

The HL course goes to more depth than the SL Biology with 6ppw for both IBI & IB2. In addition, 2 more modules are studied, so there is also greater breadth than SL. HL Biology is an adequate preparation for Biology related degree courses (including medicine).

What does success at IB Biology require?

Prep and revision for exams must be seen by students as opportunities for independent learning. HL Biologists must spend a minimum of 3 hours per week researching essays, answering structured question papers and writing up practicals, and be prepared to read around the subject; SL students will need to make c.2 hours for this. Sound analytical, practical and communication skills are essential for success, although we hope these will develop during the course.

To gain a level 6/7 at HL Biology, UK students should have gained a high A or A* at GCSE, whilst those from overseas will need prepare themselves as fully as possible before arrival. The School Registrar will send overseas students a copy of the OCR GCSE Biology revision guide, which they are strongly advised to review and learn before arrival.

Ideally, HL Chemistry and SL (or HL) Mathematics and should be taken in tandem with HL Biology, for those embarking on a Biology related career. Most universities expect Medical and Veterinary Science applicants to have studied HL Biology with HL Chemistry with SL/HL Mathematics and usually expect applicants to be predicted 7,7,6 / 7,6,6 in their HL subjects plus an overall score of 35 points or more. Grade forecasts for UCAS are based upon the results gained in the IBI end of year examinations.

Extra-curricular opportunities:

As a member of a major Public School, you should use the opportunities available to you to develop a UCAS personal statement which is interesting and diverse. You need to have demonstrated interests and skills beyond the classroom, both of the academic and non-academic kind. It is the responsibility of all students to find work experience which is related to the degree course which they intend to study.

To help you in this process, you are encouraged to attend as many of the Harpur Science Forum lectures as possible (a lecture series hosted by Bedford School and Dame Alice Harpur School); become a committee member, take notes, ask questions and engage with the speakers, for you may have a university interviewer who will ask you about them. In addition, we encourage you to take up membership of [The Royal Institution](#) and if possible attend black tie Friday Evening Discourses. [The Royal Society](#) holds free evening science lectures and runs excellent [Summer Science Exhibitions](#). Students should enter the [Peterhouse: Kelvin Science Prize](#) and the [National Institute for Medical Research essay prize](#). Those who demonstrate a real aptitude for Biology are invited to enter the [British Biology Olympiad](#); the elite from this are selected to represent the UK at the International Biology Olympiad. We also run the challenging Talalay Science Presentation competition, the winner of which receives a substantial financial award.

Oxbridge students are expected to make time to submit essays and give presentations on topics of their own choice. They must read extensively beyond the syllabus and ensure they are able to converse fluently on the recent developments described in journals e.g. New Scientist (the School Library provides a free online version). Oxbridge preparation is a

process in which highly motivated and talented students develop their knowledge and skills independently, with guidance from the Head of Department or Master i/c UCAS.