



## Biology

### **One year AS/Two year A level.**

Biology is concerned with the structure, function, growth, evolution and distribution of living organisms and how they interact with the environment.

#### **Requirements:**

The College minimum to start an advanced level course is one grade B and four grade Cs at GCSE. Students wishing to undertake this course require BB in Core and Additional Science GCSE or grade B in Biology GCSE and grade C in GCSE Mathematics and English Language. The student will also be expected to meet the Average Points Score for this subject. It is not recommended to take Biology as a single science.

#### **This subject will focus on:**

- biochemistry – the structure and function of biological molecules;
- cells – their structure and how all the organelles work;
- cell membranes and cell signalling;
- DNA and how proteins are synthesised;
- cell division stem cells and their potential in medicine;
- exchange and transport – controlling the supply of nutrients and removal of waste, e.g. lungs, heart and blood vessels;
- plant transport – xylem and phloem and the movement of water, minerals and sugar;
- ecology – classification systems, importance of biodiversity and the consequences of human activities;
- evolution – the theory of natural selection and evidence to support Darwin's Theory;
- food – balanced diet and its link to heart disease, food preservation and how food productivity can be improved by selective breeding and use of fertilisers; and
- health and disease – AIDS/HIV, TB and Malaria are studied along with the immune system.

#### **You can expect to:**

- develop practical skills to complete qualitative, quantitative and evaluative tasks;
- develop an interest and enthusiasm for Biology;
- appreciate how the science contributes to economic success and develop an appreciation of how science works; and
- develop essential knowledge and understanding of different areas of Biology and how they relate to each other.

#### **Method of assessment:**

- Assessment is by examinations;
- Cells, Exchange and Transport 30% - taken in January;
- Molecules, Biodiversity, Food and Health 50% - taken in June; and
- a series of assessed practicals throughout the year 20%

**Progression:**

A variety of options will be open to you after completing this subject. You can apply for a degree course in Biological Sciences and the many different career options that can develop from Biology. Medicine and all the other professions in the health sector require Biology. Biology can lead to a number of other career options including sports science and forensic science.

**Student Success at Havering Sixth Form College:**

Biology had a 99% pass rate at A Level in 2009.

Ryan Burnett (ex Sanders Draper) who achieved an A grade in Biology and is studying medicine at University College London said: "The tutors and students combined to make Biology the highlight of the day and ensured I achieved the best results possible".