

### **Is this subject right for me?**

Do you have a curiosity about the natural world around you?

Are you keen to explore how things work in the biological world by the application of imaginative and logical thinking?

Do you enjoy exploring your ideas through practical work and fieldwork?

Biology is an ideal choice for students with an interest and curiosity about the diversity and origins of the living world around them. The A Level Biology course aims to develop an in-depth knowledge and understanding of the ways in which living organisms function. It focuses on the interactions of living organisms with their environment.

Perhaps you have enjoyed natural history programmes on television, seen some of the technological developments in genetic modifications or fertility treatment reported in the news or heard debates about the impact of human activity on the environment. If you are inspired to think more about these issues, then Biology could be for you! In Biology you will develop practical skills by planning experiments, collecting data, analysing experimental results and making critical conclusions. You will also learn how scientific models are developed, the applications and implications of science, the benefits and risks that science brings and the ways in which society uses science to make decisions.

Studying Biology is a good entry route into a variety of careers. Many students go on to study for Science or Environmental degrees. Biology is a natural choice for students aiming for careers in Medicine, Veterinary science or Paramedical subjects such as Osteopathy and Physiotherapy. Biology can lead to Nursing, teaching or more technical vocational qualifications.

Skills such as the ability to think logically and analytically, to work independently or in groups and to present ideas clearly orally and in writing are widely valued by employers. A wide variety of students study Biology - and not just those with aspirations to be the scientists of the future! They combine it with complementary subjects such as Chemistry, Physics, PE and Geography, or choose it for contrast with subjects such as English, Art or Philosophy.

### **What is the course content?**

AS Biology is divided into 3 units. Units 1 and 2 are assessed by examination and Unit 3 is externally assessed through coursework.

Unit 1: - You will learn more about some of the human body systems and how the kinds of lifestyle choices, such as diet and exercise, put you more, or less, at risk of suffering from disease.

You will find out how some parts of the body work, for example, about the lungs and how materials are transported around the body, and the role of enzymes.

Unit 2 - You will learn that your physical characteristics have been determined by your genetic makeup and influenced by the environment. In doing so, you will learn some cell biology, about the two main types of cell division and the purpose of each type, and about sexual reproduction.

You will study how there came to be so many different types of organisms in the world, ranging from microscopic organisms such as viruses to huge mammals such as whales. This unit explains the term biodiversity, and also the concept of natural selection and how it can lead to adaptation which drives evolution.

You will also learn about plants and their structure, and how the properties of some plants may be used to tackle issues such as sustainability.

A level Biology has a similar 3 unit structure to AS. Units 4 and 5 are assessed by examination and Unit 6 is internally assessed through coursework.

Unit 4 - Global warming and climate change are buzzwords that appear in media headlines and have been the source of much controversy and political divide. You will learn about the different types of evidence for global warming and the possible causes of it, and the effect it will have on animals and plants. You will also learn about ecology, photosynthesis and speciation.

Unit 5 - In this unit you will build on your knowledge about joints and movement, and learn more about the precise mechanism of skeletal muscle contraction, respiration and homeostasis in the context of exercise.

The brain is the most complicated and probably the least understood organ in the body. You will study the control of body systems by the nervous system and responses to the external environment.

### **How will your work be assessed?**

Assessment at AS Level

Units 1 and 2 are externally assessed written examination papers worth 80% in total of the AS mark. The papers will contain short structured questions and longer prose questions.

Unit 3 is externally assessed and worth 20% of the AS mark. You also receive a mark for producing a report on an application of biology seen during a visit or an area of personal interest.

Assessment at A Level - Your AS score counts for 50% of your total A level mark.

Units 4 and 5 are externally assessed written examination papers worth 80% of the A2 mark. The papers will contain objective

# Biology

## AS and A Level

questions, short questions and longer questions.

Unit 6 is internally assessed and worth 20% of the A2 mark. You will use the skills that you have gained to plan an investigation and carry out an experimental investigation based either in the laboratory or an ecological study of your choice.

### **What are the entry requirements?**

You will need to have achieved the following:

Grade CC in Double Science GCSE or grade C in Biology and Chemistry GCSE, also grade C in Mathematics GCSE. We *recommend* that students starting on AS Biology have achieved BB in Science for best chance of success. This is in addition to the standard college entry requirements for the programme you have chosen.

### **Other information**

You will need to be highly motivated and hard working as Biology is a demanding subject with a high workload. Biology is taught in well-equipped laboratories where lessons involve a variety of activities from research and debate to practical work and more formal lecture-style sessions. If you plan to progress to A2, you will be expected to participate in the field course at the end of the first year.