



## 2021-22 Course Details

# A-Level Biology (OCR)

Biologists study the natural world and all living things in it, from large mammals to microscopic cells and DNA. Understanding how organisms work, and the complicated relationships that exist between all living things on our planet allows biologists to use the knowledge to stop the spread of disease, improve public health and improve animal care and conservation.

Biology will help you to develop essential biological knowledge through the nurturing of your interest and enthusiasm for the subject, as well as developing competence and confidence in a range of mathematical, practical and problem solving skills. Additionally, you will develop an understanding of how society makes decisions about scientific issues and how science contributes to the success of the economy and society, linking to careers including, Medicine, Nursing, Dentistry, Veterinary Science, Forensic Science, Zoology, Geology, Oceanography, Pharmaceuticals and Physiotherapy.

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### Qualities and qualifications needed

Grade 6 in GCSE Biology, Chemistry and Physics or Grade 6,6 in Combined Science. Additionally, a Grade 6 or above in Mathematics is desirable to cope with the mathematical demands of this course.

You need to have an interest science and enjoy practical work, as well as being organised, self-motivated, independent and have the ability to meet deadlines.

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### How will the course be assessed?

Formal assessment includes:

- Home Learning Assessments
- End of topics tests
- Practical assessment



**This course is 100% examination at the end of Year 13.**

There is no coursework element or opportunity to resit any examination during the two years.

Practical Endorsement is achieved through the demonstration of a variety of practical techniques.

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## Course content

The course is assessed via examination only. Learners will study six modules over the duration of the course:

### Module 1: Development of practical skills in Biology (internally assessed)

Throughout the two year course, students will complete 12 practicals in order to obtain the Biology Practical Endorsement. These practical investigations develop a range of scientific practical skills, including serial dilution, microbiological and aseptic techniques, microscopy skills and dissection, as well as understanding of how to record and analyse practical data. Students will obtain this qualification through the demonstration of competence across these practical tasks. Understanding of these practical tasks will also be assessed in the formal examinations.

### Module 2: Foundations in Biology

Students begin to develop their understanding of cell structure, including cell membranes and enzyme activity, and biochemistry, including biological molecules such as carbohydrates and proteins.

### Module 3: Exchange and transport

Students will apply their understanding of cell structure to the process of gas exchange in mammals, fish, insects and plants.

### Module 4: Biodiversity, evolution and disease

During Module 4, students will develop understanding of communicable diseases, disease prevention and the immune system, as well as biodiversity, classification and evolution.

### Module 5: Communication, homeostasis and energy

Here, students will further their understanding of communication; hormonal and nervous control and homeostasis within humans, so as to apply this to responses in plants and animals including photosynthesis and respiration.

### Module 6: Genetics, evolution and ecosystems

Finally, students will develop understanding of cellular control, inheritance and the genome, before applying this to real world contexts of sustainable ecosystems and cloning and biotechnology.



## Examinations



### Biological Processes

(2 hours 15 minutes – 37% of Grade)

Covers content from modules 1, 2, 3 and 5.



### Biological Diversity

(2 hours 15 minutes – 37% of Grade)

Covers content from modules 1, 2, 4 and 6.



### Unified Biology

(1 hours 30 minutes – 26% of Grade)

Covers content from all modules.

## Methods of teaching and learning

The course is designed to stimulate and challenge students, with the teaching of theory complimented by a range of practical activities. Guided learning is accompanied by frequent formal and informal assessment throughout to check understanding. Students are encouraged to take part in discussions, often covering challenging contrasts between ethics and science, allowing them to develop evaluation and analysis techniques applicable to a range of careers.