Biology

IGCSE Biology

YEAR 9 OPTION BOOKLET: 2024-2026

Subject: Biology

Course Title: Cambridge iGCSE Biology - 0610

Why study this subject: Biology is the study of living things. It is a fascinating course which covers the full range of life on Earth from a molecular level such as the study of genetics through to understanding how separate organisms interact in a community when studying ecology. Taken together with either one or both of chemistry and physics this course gives students a thorough understanding of the natural world around us. Biology is an excellent subject to study in preparation for further studies in science and also is useful if pursuing careers in medicine, dentistry, pharmacy, ecology, environmental science, climate science or specialist fields in biology such as zoology or botany.

Aims of this subject:

1. To provide an enjoyable and worthwhile educational experience for all learners, whether or not they go on to study science beyond this level

2. To enable learners to acquire sufficient knowledge and understanding to:
    - become confident citizens and develop an informed interest in scientific matters
    - be suitably prepared for studies beyond Cambridge IGCSE

3. To allow learners to recognise that science is evidence based and understand the usefulness, and the limitations, of scientific method

4. To develop skills that:
    - are relevant to the study and practice of biology
    - are useful in everyday life
    - encourage a systematic approach to problem-solving
    - encourage efficient and safe practice
    - encourage effective communication through the language of science

5. To develop attitudes relevant to biology such as:
    - concern for accuracy and precision
    - objectivity
    - integrity
    - enquiry
    - initiative
    - inventiveness

6. To enable learners to appreciate that:
    - science is subject to social, economic, technological, ethical and cultural influences and limitations
    - the applications of science may be both beneficial and detrimental to the individual, the community and the environment

Assessment at a glance:

All candidates must enter for three papers.
Core students will sit Papers 1, 3 and 5.
Extended students will sit Papers 2, 4 and 5.

Paper 1 (CORE) 45 minutes

A multiple-choice paper consisting of 40 items of the four-choice type. Questions will be based on the Core syllabus content.
This paper will be weighted at 30% of the final total mark.

Paper 2 (EXTENDED) 45 minutes

A multiple-choice paper consisting of 40 items of the four-choice type.
Questions will be based on the Extended syllabus content (Core and Supplement).
This paper will be weighted at 30% of the final total mark.

Paper 3 (CORE) 1 hour 15 minutes

A written paper consisting of short-answer and structured questions. Questions will be based on the Core syllabus content.
80 marks
This paper will be weighted at 50% of the final total mark.

Paper 4 (EXTENDED) 1 hour 15 minutes

A written paper consisting of short-answer and structured questions.
Questions will be based on the Extended syllabus content (Core and Supplement).
80 marks
This paper will be weighted at 50% of the final total mark.

Paper 5 (ALL STUDENTS) 1 hour 15 minutes

Practical Test
The paper is structured to assess grade ranges A*–G. 40 marks
This paper will be weighted at 20% of the final total mark.

OR

Paper 6 (ALL STUDENTS) 1 hour 15 minutes

Alternative to Practical Test
The paper is structures to assess grade ranges A* - G. 40 marks.
This paper will be weighted at 20% of the final total mark.

Curriculum content:

All students study the following topics:

1. Characteristics and classification of living organisms
2. Organisation of the organism
3. Movement in and out of cells
4. Biological molecules
5. Enzymes
6. Plant nutrition
7. Human nutrition
8. Transport in plants
9. Transport in animals
10. Diseases and immunity
11. Gas exchange in humans
12. Respiration
13. Excretion in humans
14. Coordination and response
15. Drugs
16. Reproduction
17. Inheritance
18. Variation and selection
19. Organisms and their environment
20. Biotechnology and genetic engineering
21. Human influences on ecosystems

Practical basis of Science:

All scientific subjects are, by their nature, experimental. So it is important that all students learn those practical skills that allow them to perform investigations into the topics of study. It is only through a program of theoretical study underpinned by rigorous experimental practice that students will be properly prepared for further study in the Sciences at AS or A-level, into University and beyond.

This approach will not only provide opportunities for developing experimental skills but will increase the appeal of the course, and the enjoyment of the subject. Practical work helps learners to acquire a secure understanding of the syllabus topics and to appreciate how scientific theories are developed and tested. It also promotes important scientific attitudes such as objectivity, integrity, co-operation, inquiry and inventiveness.

Experimental skills and investigations

The Cambridge International exam board states that candidates should be able to:

1. Demonstrate knowledge of how to safely use techniques, apparatus and materials (including following a sequence of instructions where appropriate).
2. Plan experiments and investigations.
3. Make and record observations, measurements and estimates.
4. Interpret and evaluate experimental observations and data.
5. Evaluate methods and suggest possible improvements.