

A Level Biology... FAQs!

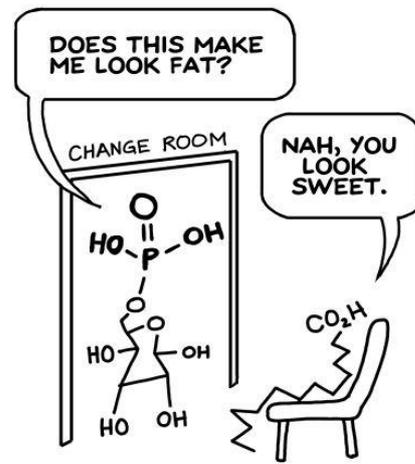
Q. What syllabus are we studying?

OCR Syllabus Biology A

The course consists of 6 modules. Modules 1 and 2 set out fundamental building blocks of biology and are studied and built upon throughout the course, they are also examined in all final papers.

Q. What modules will we study and when?

Modules 2, 3 and 4 are taught in the first year of the course and form (with modules 1) examinable subject content for the end of year 12 exams. Module 1 is referred to throughout the course as is not direct taught as a stand-alone module. Year 13 sees more in-depth study through modules 5 and 6.



Module 1: Development of practical skills in biology

We will study how to apply the scientific method to carry out experimental work in biology including experimental design, identification of variables, recording of data and data analysis. You will complete a non-examined practical endorsement by completing practical work throughout the course.

Module 2: Foundations in biology

We will practice using microscopy to study cell structure of a variety of organisms. Biologically important molecules such as carbohydrates, proteins, water and nucleic acids are studied with respect to their structure and function. The structure and mode of action of enzymes in catalysing biochemical reactions is studied. Membranes form barriers within, and at the surface of, cells. This module also considers the way in which the structure of membranes relates to the different methods by which molecules enter and leave cells and organelles. The division and subsequent specialisation of cells is studied, together with the potential for the therapeutic use of stem cells.

Module 3: Exchange and transport

This module looks at the structure and function of gas exchange and transport systems in a range of animals and terrestrial plants. The significance of surface area to volume ratio in determining the need for ventilation, gas exchange and transport systems in multicellular organisms is emphasised. The examples of terrestrial green plants and a range of animal phyla are used to illustrate the principle, this will include exposure to living organisms via field trips and other experiences.

Module 4: Biodiversity, evolution and disease

We will learn about the incredible biodiversity of organisms; how they are classified and the ways in which biodiversity can be measured. This module serves as an introduction to ecology, emphasising practical techniques and an appreciation of the need to maintain biodiversity. You will also gain an understanding of the variety of organisms that are pathogenic and the way in which plants and animals

have evolved defences to deal with disease. The impact of the evolution of pathogens on the treatment of disease is also considered. The relationships between organisms are studied, considering variation, evolution and phylogeny.

Modules 5 and 6 are taught in the second year of the course

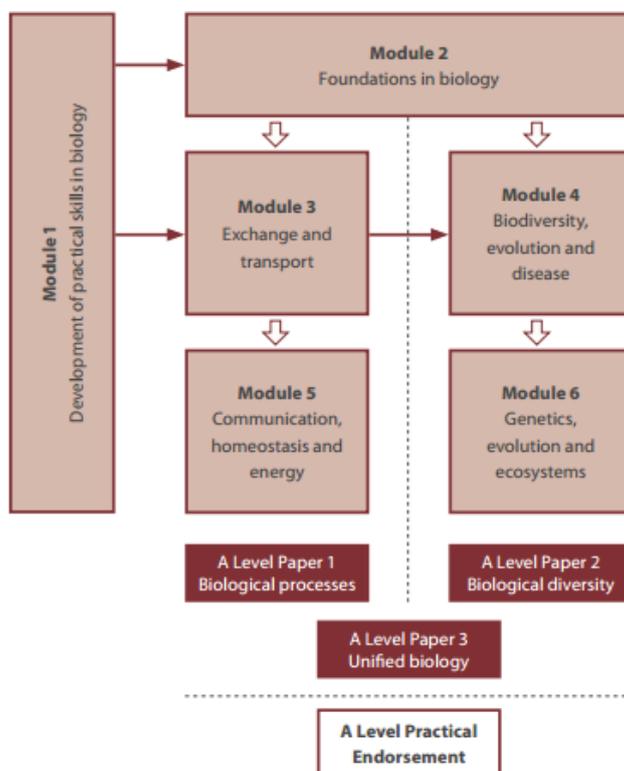
Module 5: Communication, homeostasis and energy

We will study the importance of organisms' ability to respond to external stimuli, we will do this through the study of communication within the body, which may be chemical and/or electrical. We will also study the fundamental importance of homeostasis with control of temperature, blood sugar and blood water potential as examples. The biochemical pathways of photosynthesis and respiration are studied in detail, with an emphasis on the formation and use of ATP as the source of energy for biochemical processes and synthesis of biological molecules.

Module 6: Genetics, evolution and ecosystems

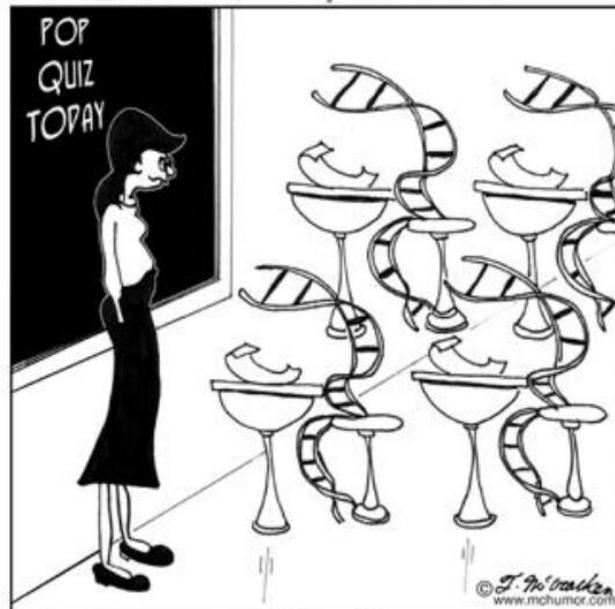
The role of genes in regulating and controlling cell function and development is explored. Heredity and the mechanisms of evolution and speciation are also covered. Some of the practical techniques used to manipulate DNA such as sequencing and amplification are considered and their therapeutic medical use. The use of microorganisms in biotechnology is also covered. We will discuss the associated ethical considerations; it is important that you are able to employ a balanced understanding of such issues. We also study the significance of the role of microorganisms in recycling materials within the environment and maintaining balance within ecosystems; the need to conserve environmental resources evaluated, whilst appreciating the potential conflict arising from the needs of an increasing human population.

Q. How are we going to be assessed?



Content Overview	Assessment Overview	
<p>Content is split into six teaching modules:</p> <ul style="list-style-type: none"> • Module 1 – Development of practical skills in biology • Module 2 – Foundations in biology • Module 3 – Exchange and transport • Module 4 – Biodiversity, evolution and disease • Module 5 – Communication, homeostasis and energy • Module 6 – Genetics, evolution and ecosystems <p>Component 01 assesses content from modules 1, 2, 3 and 5.</p> <p>Component 02 assesses content from modules 1, 2, 4 and 6.</p> <p>Component 03 assesses content from all modules (1 to 6).</p>	<p>Biological processes (01)</p> <p>100 marks</p> <p>2 hour 15 minutes written paper</p>	<p>37%</p> <p>of total A level</p>
	<p>Biological diversity (02)</p> <p>100 marks</p> <p>2 hour 15 minutes written paper</p>	<p>37%</p> <p>of total A level</p>
	<p>Unified biology (03)</p> <p>70 marks</p> <p>1 hour 30 minutes written paper</p>	<p>26%</p> <p>of total A level</p>
	<p>Practical endorsement in biology (04)* (non exam assessment)</p>	<p>Reported separately</p> <p>(see section 5g)</p>

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DNA Testing.