

Biology A Level

Why Study Biology?

The field of Biology is continuing to exert a major influence in all areas of society; medical, technical, moral and ethical. Biology also remains at the forefront of modern scientific advance, particularly in areas of biotechnology and genetics.



What Subjects could I study with Biology?

- Chemistry Physics Mathematics Geography Physical Education
- Psychology Geology

Careers in Biology

- Biochemist Botanist Dietician Optometrist Medicine (If you are intending to be a Doctor you MUST also study Chemistry) Ecologist Environmental Health Officer Horticulture Marine Biologist Microbiologist Nutritionist
- Pharmacist Radiographer Veterinary Surgeon Zoologist



What Do I Study on the A-Level Biology Course?

1. Biological molecules
2. Cells
3. Organisms exchange substances
4. Genetic information, variation and relationships between organisms
5. Energy transfers in and between organisms
6. Organisms respond to changes in environments
7. Genetics, populations, evolution and ecosystems
8. The control of gene expression

Paper 1	Paper 2	Paper 3
What's Assessed <ul style="list-style-type: none"> Any content from Topics 1-4, including relevant practical skills 	What's Assessed <ul style="list-style-type: none"> Any content from Topics 5-8 including relevant practical skills 	What's Assessed <ul style="list-style-type: none"> Any content from Topics 1 - 8, including relevant practical skills
Assessed <ul style="list-style-type: none"> Written exam: 2 hours 91 marks 35% of A-Level 	+	Assessed <ul style="list-style-type: none"> Written exam: 2 hours 91 marks 35% of A-Level
Questions <ul style="list-style-type: none"> 76 marks: a mixture of short and long answer questions 15 marks: extended response questions 	+	Questions <ul style="list-style-type: none"> 76 marks: a mixture of short and long answer questions 15 marks: comprehension question
		Assessed <ul style="list-style-type: none"> Written exam: 2 hours 78 marks 30% of A-Level
		Questions <ul style="list-style-type: none"> 38 marks: questions, including practical techniques 15 marks: critical analysis of given data 25 marks: one essay from a choice of two titles



These qualifications are linear which means that students will sit all the exams at the end of the course.



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Practical Work

A variety of practical work is essential to develop students skills and understanding of the process of scientific investigation. A student's practical skills are assessed throughout the year in the lab books/folders, as well as in the written exams.

CPAC practical endorsement The practical skills for the A-Level are completed throughout twelve practical investigations over the course and are assessed in the written exams. There is a separate endorsement of practical skills, which are assessed throughout the course using the lab books.



Year 12

1. Investigation into the effect of a named variable on the rate of an enzyme controlled reaction
2. Preparation of stained squashes of cells from plant root tips
3. Production of a dilution series of a solute to produce a calibration curve with which to identify the water potential of plant tissue
4. Investigation into the effect of a named variable on the permeability of cell surface membranes
5. Dissection of animal or plant gas exchange or mass transport system or of organ within such a system
6. Use of aseptic technique to investigate the effect of antimicrobial substances on microbial growth



Year 13

7. Use of chromatography to investigate the pigments isolated from leaves of different plants
8. Investigation into the effect of a named factor on the rate of dehydrogenase activity in extracts of chloroplasts
9. Investigation into the effect of a named variable on the rate of respiration of cultures of single-celled organisms
10. Investigation into the effect of an environmental variable on the movement of an animal using either a choice chamber or a maze
11. Production of a dilution series of a glucose solution and use of colorimetric techniques to produce a calibration curve with which to identify the concentration of glucose in an unknown "urine" sample
12. Investigation into the effect of a named environmental factor on the distribution of a given species (this practical is completed on an Ecology fieldtrip—this is a residential trip so a cost will be involved)



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