

A Level Biology Handbook

Examination Board: AQA

Course outline

This course will enthuse and develop a student's passion for biology and provide a solid grounding in foundation biology. The AS biology specification introduces students to many core concepts, which include biological molecules, cells, transport of substances and genetics. These core concepts are further developed in A Level biology.

Students could study the AS course in the first year only, however those wishing to study the A Level course will complete the first year, which has a common curriculum with the AS course and then continue on to year 2. It is important that students have a good knowledge of AS level biology before progressing on to A level – many of topics studied at AS Level are developed further. For the A Level biology course all exams will be taken at the end of year 2.

Students studying the **AS biology course** will sit two written exams at the end of year 1. Each paper will be 90 minutes long and each will have a weighting of 50% towards the AS qualification.

Students studying the **A Level biology course** will sit three written exams at the end of year 2. Each paper will be 2 hours long, with the first two papers having a weighting of 35% towards the qualification and the third paper having a weighting of 30% towards the final grade.

Is the course right for you?

Students must have studied **triple science at GCSE level and obtained a B grade and above**. A student with **A grade and above in Core Science and Additional Science may be considered**. They should also feel comfortable about manipulating numbers for statistical tests and conducting scientific investigations. At least an A grade in maths is would be beneficial if you wish to study A Level biology.

What can you do after the course?

This qualification should enable students to progress on to a Biology degree or a degree that combines biology with another subject such as chemistry. To take both biology and chemistry at A Level would be essential if you wish to study for a degree in medicine or pharmacy. There are various fields of study one may wish to follow such as conservation and microbiology to name but a few.

Biology Course Topics

<i>Biological Molecules</i>		<i>Cells, Organisms and their environment</i>		<i>Variation and genetics</i>	
AS STUDY ONLY	A LEVEL STUDY	AS STUDY ONLY	A LEVEL STUDY	AS STUDY ONLY	A LEVEL STUDY
Monomers and polymers Carbohydrates Lipids Proteins Enzymes DNA and RNA ATP Water Inorganic ions	Photosynthesis Respiration Blood glucose concentration	Eukaryotic cells Prokaryotic cells Microscopy Mitosis Immunity Transport across cell membranes Surface area and transport Gas exchange Digestion Cardiovascular system Transport in plants	Photosynthesis Energy and ecosystems Nutrient cycles Nervous co-ordination Homeostasis Blood water potential	Meiosis Adaptations Taxonomy Biodiversity DNA, genes and chromosomes DNA and protein synthesis	Inheritance Statistical analysis of populations Evolution Control of gene expression Gene technologies

EXAM FORMAT

COURSE	PAPER	TOPICS	DURATION	QUESTION FORMAT	% WEIGHTING
AS BIOLOGY	1	Monomers and polymers Carbohydrates Lipids Proteins Enzymes DNA and RNA ATP Water Inorganic ions Eukaryotic cells Prokaryotic cells Microscopy Mitosis Immunity Transport across cell membranes Surface area and transport Gas exchange Digestion Cardiovascular system Transport in plants Meiosis Adaptations Taxonomy Biodiversity DNA, genes and chromosomes DNA and protein synthesis Practical Skills	90 minutes	75 marks in total - 65 mark short answer questions - 10 marks comprehension question	50% of AS course
	2	Monomers and polymers Carbohydrates Lipids Proteins Enzymes DNA and RNA ATP Water Inorganic ions Eukaryotic cells Prokaryotic cells Microscopy	90 minutes	75 marks in total - 65 mark short answer questions - 10 marks comprehension question	50% of AS course

		Mitosis Immunity Transport across cell membranes Surface area and transport Gas exchange Digestion Cardiovascular system Transport in plants Meiosis Adaptations Taxonomy Biodiversity DNA, genes and chromosomes DNA and protein synthesis Practical Skills			
A LEVEL BIOLOGY	1	Monomers and polymers Carbohydrates Lipids Proteins Enzymes DNA and RNA ATP Water Inorganic ions Eukaryotic cells Prokaryotic cells Microscopy Mitosis Immunity Transport across cell membranes Surface area and transport Gas exchange Digestion Cardiovascular system Transport in plants Meiosis Adaptations Taxonomy Biodiversity DNA, genes and chromosomes DNA and protein synthesis Practical skills	2 hours	91 marks in total - 76 marks in a mixture of short and long answer questions - 15 marks extended response question	35% of A level course
		Photosynthesis			

	2	Respiration Blood glucose concentration Photosynthesis Energy and ecosystems Nutrient cycles Nervous co-ordination Homeostasis Blood water potential Inheritance Statistical analysis of populations Evolution Control of gene expression Gene technologies Practical Skills	2 hours	91 marks in total - 76 marks in a mixture of short and long answer questions - 15 marks comprehension question	35% of A level course
	3	Any content from the entire course Any practical skills	2 hours	78 marks in total - 38 marks structured questions, including practical techniques - 15 marks critical analysis of given experimental data - 25 marks one essay from a choice of 2 titles	30% of A level course