



BIOLOGY

Entry Requirement: Grade 7-7 in Double Award Science or grade 7 in Triple Award Biology. A grade 7 in Mathematics is also required.

Examination Board: AQA 7402

Course Content:

The A Level course is divided into 8 topics (please see specification document for more detailed topic content): -

Topic 1 Biological molecules: - monomers and polymers, carbohydrates, lipids, proteins, nucleic acids, DNA replication, ATP, water and inorganic molecules.

Topic 2 Cells: - cell structure, magnification, cell cycle, transport across cell membranes, cell recognition and the immune system.

Topic 3 Organisms exchange substances with their environment: - surface area to volume ratio, gas exchange, digestion and absorption and mass transport.

Topic 4 Genetic information, variation and relationships between organisms: - genetic material, protein synthesis, genetic diversity, adaptation, taxonomy, biodiversity and investigating diversity.

Topic 5 Energy transfers in and between organisms: - photosynthesis, respiration, energy and ecosystems and nutrient cycles.

Topic 6 Organisms respond to changes in their internal and external environments: - survival and response, receptors, control of the heart rate, nerve impulses, synaptic transmission, skeletal muscle, homeostasis, blood glucose control and control of blood water potential.

Topic 7 Genetics, populations, evolution and ecosystems: - inheritance, populations, evolution, speciation and populations in ecosystems.

Topic 8 The control of gene expression: - mutation, gene expression, regulation of transcription and translation, gene expression and cancer, using genome projects, recombinant DNA technology, DNA probes and hybridization and genetic fingerprinting.

Assessment:

| Paper: | Topics Assessed | % of A level | Duration | Marks |
|---------------|--|---------------------|-----------------|--------------|
| 1 | Any content from modules 1-4, inc. relevant practical skills | 35% of A level | 120 mins | 91 marks |
| 2 | Any content from modules 5-8, inc. relevant practical skills | 35% of A level | 120 mins | 91 marks |
| 3 | Any content from modules 1-8, inc. relevant practical skills | 30% of A level | 120 mins | 78 marks |

Additional information:

Students will be required to complete 12 assessed practical activities across the 2 year A Level course. These have been set by the examination board and will also be assessed in the relevant examination paper.

Quality of written communication and mathematical skills are assessed in all units and credit may be restricted if communication is unclear.

In Biology, students will learn how the subject is applied to practical situations in the outside world. Other skills they will learn include: logical thinking, communication, analysis, data handling and observation.

Beyond A Level Biology:

Studying Biology can open the door to a wide range of career options including: Medicine, Nursing, Midwifery, Physiotherapy, Veterinary Medicine, Zoology, Marine Biology, Dentistry, Natural Science, Environmental Science, Ecology, Forensics and Biotechnology.