



# Biology

The International A Level Biology Course is divided in two years, AS and A2. In AS we will study Unit 1, 2 and 3. A2 is made up of Unit 4, 5 and 6. Unit 3 and 6 are practical Units.

All Units will be externally assessed in June.

## AS

### Unit 1 Lifestyle, Transport, Genes and Health

- Structure and function of carbohydrates, lipids and proteins; enzyme action
- Structure and properties of cell membranes; passive and active transport
- Structure and role of DNA and RNA
- Replication; protein synthesis
- Monohybrid inheritance
- Gene mutations
- Principles of gene therapy; social and ethical issues.

### Unit 2 Development, Plants and the Environment

- Cell structure and ultrastructure of eukaryote and prokaryote cells; cell specialisation
- The role of meiosis
- Genotype and environmental influence
- Stem cell research and its implications
- Biodiversity, adaptations and natural selection
- Principles of taxonomy
- Plant cell structure

### Unit 3 Practical Biology and Research Skills

Students are expected to develop experimental skills, and a knowledge and understanding of experimental techniques, by carrying out a range of practical experiments and investigations while they study Units 1 and 2. This unit will assess students' knowledge and understanding of experimental procedures and techniques that were developed throughout Units 1 and 2.

**Assessment:** Written examinations for all units



# Biology

## A2

### Unit 4 The Natural Environment and Species Survival

- Photosynthesis; energy transfer within ecosystems
- Evidence for global warming
- Evolution through natural selection and speciation
- Nutrient recycling
- DNA profiling and PCR
- Structure of bacteria and viruses infectious diseases (e.g. AIDS and TB) and immunology.

### Unit 5 Energy, Exercise and Coordination

- ATP, glycolysis, anaerobic/aerobic respiration
- Control and functioning of heart; ventilation and cardiac output
- Homeostasis
- The nervous system
- Impact of exercise on body, and improving performance
- Hormonal coordination
- Brain structure and development
- Imbalances in brain chemicals
- Human Genome Project.

### Unit 6 Practical Biology and Investigative Skills

Students are expected to develop a wide knowledge and understanding of experimental procedures and techniques throughout the whole of their International Advanced Level course. They are expected to become aware of how these techniques might be used to investigate interesting biological questions.

This unit will assess students' knowledge and understanding of experimental procedures and techniques and their ability to plan whole investigations, analyse data and to evaluate their results and experimental methodology.

**Assessment:** Written examinations for all units

**Prerequisites:** A good knowledge of the GCSE Biology specification is assumed