Kings
Education for Life

Factsheet

A-level Biology

A-level Biology factsheet

Overview

Explore the make-up and evolution of life itself and discover how it adapts to its internal and external environments. Biology is a pre-requisite subject for many degrees in Biological Science and Medical related fields of study. Biologists also develop skills and understanding of scientific methods, data analysis, observation, correlations and causal relationships.

Key Facts

Start Dates:

- 5 April 2021 (only in Brighton)
- 6 September 2021
- 3 January 2022

Colleges:

- Bournemouth
- Brighton
- London
- Oxford

Entry level:

- Academic: Completed 10 years of schooling (GCSE or equivalent)
- English: IELTS 5.5 or equivalent

Minimum age:

- 16

Length:

- 2 Academic Years (3 terms)
- We also offer a One-Year A-level in Biology and an entry from Year 12.

Continued overleaf ↘

Lessons:

- Average 7 hours per week for each A-level subject (plus homework and private study)

Class size:

- 4-10

Learning outcomes

- Gain UK national university entrance qualification
- Raise English to university level
- Develop study skills required at degree level
- Develop specialist subject expertise

Course content and structure

The following syllabus outline is based on AQA exam board content. Please note that exam boards may vary from college to college.

Year 1

Biological molecules

- Monomers and Polymers
- Carbohydrates
- Lipids
- Proteins
- Nucleic acids
- ATP
- Water
- Inorganic ions

Cells

- Cell structure
- The cell cycle
- Transport across cell membranes
- Cell recognition and the immune system

Organisms and substance exchange

- Surface area to volume ratio
- Gaseous exchange
- Digestion and absorption
- Mass transport
- Mass transport in animals
- Mass transport in plants

Genetic information, variation and relationships between organisms

Continued overleaf ↘

- DNA, Genes and chromosomes
- DNA and protein synthesis
- Genetic diversity can arise as a result of mutation or during meiosis
- Genetic diversity and adaptation
- Species and taxonomy
- Biodiversity within a community
- Investigating diversity

Year 2

Energy transfers in and between organisms

- Photosynthesis
- Respiration
- Energy and ecosystems
- Nutrient cycles

How organisms respond to changes in their internal and external environments

- Stimuli, both internal and external
- Nervous coordination
- Skeletal muscles as effectors
- Homeostasis

Genetics, populations, evolution and ecosystems

- Inheritance
- Populations
- Evolution and speciation
- Populations in Ecosystems

The control of gene expression

- Alteration of the sequence of bases in DNA
- Stem cells
- Genome projects
- Gene technologies

Typical A-level subject combinations with Biology

- Maths, Chemistry and Biology
- Maths, Physics, Chemistry and Biology

Continued overleaf ↘

Sample enrichment activities

- 3-day residential field trip
- The Big Bang fair, NEC Birmingham
- Natural History Museum visit
- Oxford University Science laboratory visit
- Oxford University School of Medicine visit

- The Royal Society, London
- Science Club
- Science in the News Club
- Google Science Fair
- AIM conferences

Sample academic calendar (2021-2022)

Year 1

September

- 6th: term starts
- Student induction

October

- 18 – 22nd: half term
- Progress tests

November

- University fairs and talks

December

- 10th: term ends
- End of term exams

January

- 3rd: term starts

February

- 10th – 11th: half term
- Progress tests
- University fairs

Continued overleaf ↘

March

- End of term exams
- 18th: term ends

April

- 4th: term starts

May

- Progress tests

June

- Exams
- 10th: term ends

Year 2

September

- 5th Sept: term starts

October

- 17th – 21st: half term
- 15th October: UCAS deadline (Medicine)
- Progress tests

November

- University fairs and talks

December

- 9th: term ends
- End of term exams

January

- 2nd: term starts
- 15th January: UCAS deadline (other subjects)

February

- 9 – 10th: half term
- Progress tests

Continued overleaf ↘

March

- 17th: term ends
- Mock exams

April

- 3rd: term starts
- Progress tests

May

- Final exams

June

- 9th June: term ends

Recommended reading

Below is a list of books which may help you prepare for your studies prior to arrival. Please note that additional books, and online resources such as websites and journals will be shared once you begin your course.

- AQA Biology A Level Student Book by Ted Lister, Janet Renshaw
- The Selfish Gene by Richard Dawkins
- Y: The Descent of Men by Steve Jones
- Genome: The Autobiography of a Species in 23 Chapters by Matt Ridley
- DNA: The Secret of Life by James Watson
- The Origin of Species by Charles Darwin
- This Is Biology: The Science of the Living World by Ernst Mayr

Degree progression

A-level Biology, often in conjunction with other science-based subjects, can lead to the following types of degree course. It is a particularly good choice for people who want to pursue a future career in health and clinical professions.

- Biomedical Sciences
- Biochemistry
- Dentistry
- Dietetics
- Earth Sciences
- Environmental science
- Forensic Science
- Geology

- Medical Science
- Medicine
- Nursing
- Optometry
- Pharmacy

Continued overleaf ↘

- Physiotherapy
- Sports Science
- Veterinary Science

Sample alumni progression

Aysha Ahmad Sharudin

- Biology/Chemistry/Maths/Persian
- University of Exeter (Neuroscience)

Chun Yu Chan

- Biology/Chemistry/Maths/Physics
- Queen’s University Belfast (Medicine)

Hon Ming Lam

- Biology/Chemistry/Maths
- University of Bristol (Pathology)

Maryam Aghaeinasababad

- Biology/Chemistry/Maths
- Royal Veterinary College (Veterinary Medicine)

Negin Nematiniaye Masooleh

- Biology/Chemistry/Maths/Persian
- University of Leeds (Medical Science)

Pantea Hassannia

- Biology/Chemistry/Maths/Physics
- University of Surrey (Medical Engineering)

Ping Hei Cheng

- Biology/Chemistry/Maths/Physics
- Queen’s University Belfast (Medicine)

Sadam Raziyev

- Biology/Chemistry/Maths
- University of Bristol (Cellular and Molecular Medicine)

Timofei Fedotov

- Biology/Maths/Further maths/Physics
- University of Oxford (Engineering)

Continued overleaf ↘

Continued overleaf ↘