

A Level Biology

Studying Biology

Studying Biology at Advanced level helps lay the foundations for further study and careers in biological sciences.

It is also essential for pupils wishing to study **medicine, veterinary medicine** or **dentistry**.





Biology A-level goes into much more detail than you will have covered at GCSE. It will give you the skills to make connections and associations with all living things around you.

Biology literally means **'the study of life'** and if that's not important, what is? Being such a broad topic, you're bound to find a specific area of interest, plus it opens the door to a fantastic range of interesting careers.

AQA Biology 7402

At Advanced Level we study the AQA Biology specification (course code: 7402).

This is a **two year, linear course** with examinations at the end of the upper sixth year.

It is school policy **not** to enter pupils for the AS examinations at the end of the lower sixth year.

What do we teach:

Lower sixth (year 12) topics covered:

1. Biological molecules (eg Carbohydrates, lipids, proteins and DNA)
2. Cells
3. Organisms exchange substances with their environment
4. Genetic information, variation and relationships between organisms

What do we teach:

Upper sixth (year 13) topics covered:

5. Energy transfers in and between organisms
6. Organisms respond to changes in their internal and external environments
7. Genetics, populations, evolution and ecosystems
8. The control of gene expression

How do we teach it?

At any one time, pupils are engaged in two separate lines of study, each taught by a different member of staff. (See **handout** for topic list in more detail).

Practical work is integrated into the theory lessons where appropriate.

Practical work activities:

Biology, like all sciences, is a **practical subject**. Throughout the course you will carry out practical activities including:

- using microscopes to see cell division
- aseptic technique to study microbial growth
- investigating activity within cells
- investigating animal behaviours
- investigating distributions of species in the environment.
- dissection of animal or plant systems (heart, fish gills, leaves)

Practical skills:

These practicals you will give you the skills and confidence needed to investigate the way living things behave and work.

It will also ensure that if you choose to study a Biology-based subject at university, you'll have the **practical skills** needed to carry out successful experiments in your degree.

Field Work

Ecology is studied partly theoretically in the classroom, but largely on a **four day intensive field course** taught by the Field Studies Council. The A Level course requires pupils to have studied a range of ecological sampling techniques in the field.

Attendance on the field course is compulsory for all pupils studying Biology in the Upper Sixth year. The full cost of the 4 day residential field course is approximately £280.

Exams

There is **no coursework** on this course. However, your performance during practicals will be assessed.

There are **three exams** at the end of the two years for A-level, all of which are **two hours long**. At least 15% of the marks for A-level Biology are based on what you have learned in your practicals.

10% of Biology examinations will assess **mathematical skills** at higher tier GCSE level.

Mathematics skills:

10% of the overall assessment of A-level Biology will contain mathematical skills at least the standard of higher tier GCSE Mathematics or above.

What Maths skills will be assessed?

The following topics will be assessed:

6.1 (**MS** 0.1-0.5) Arithmetic and numerical application

6.2 (**MS** 1.-1.11) Handling data

6.3 (**MS** 2.1-2.5) Algebra

6.4 (**MS** 3.1-3.6) Graphs

6.5 (**MS** 4.1) Geometry and trigonometry

Entry requirements

A-level Biology builds on the work done in **GCSE Biology and Maths**, so you'll need good GCSE results from both. We would expect pupils choosing to study Biology at A Level would have at least a grade 7 at GCSE Biology or Double award Science.

Written communication is also important and you'll benefit from being a competent writer.

Possible degree options at University

According to bestcourse4me.com, the top seven degree courses taken by students who have an A-level in Biology are:

- Biology
- Psychology
- Sport and exercise science
- Medicine
- Anatomy
- Physiology and Pathology Pharmacology
- Toxicology and Pharmacy Chemistry.

Possible career options:

Studying A-level Biology at university gives you all sorts of exciting career options, including:

- Clinical molecular geneticist
- Nature conservation officer
- Pharmacologist
- Research scientist
- Higher education lecturer
- Secondary school teacher
- Soil scientist
- Dentist
- Doctor or veterinary surgeon

That's the end of the presentation.

Please feel free to ask any questions you wish!

Mr Grant/Mrs Whitton

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