



# BIOLOGY

**Exam Board: Welsh Joint Education Committee (WJEC)**

**Names of members of staff: Dr Scott Godfrey (Head); Mr Steven Mansfield (Deputy Head); Dr Rachel Archer; Mrs Natalie Goddard; Mr Joseph Newberry**

**Summary:** A two year A Level course, examined at the end of Year 12 and Year 13

**What do I need to know or be able to do before taking Biology?**

You will need to get at least an A in both: Biology GCSE/ IGCSE and Chemistry GCSE/ IGCSE. Students will be expected to interpret and process results which will involve plotting graphs and the use of statistical analysis and therefore it is desirable for students to have achieved a grade A or above in Mathematics GCSE/ IGCSE.

**What will I learn?**

Students will be able to:

- Acquire an in-depth knowledge of the Biological world and gain an appreciation of its significance
- Develop a respect for all living things and an understanding of their interaction and functions
- Develop experimental skills including use of the microscope and slide preparation, dissection, chromatography and many biochemical procedures
- Develop an understanding of scientific method including controlling variables, statistical analysis and evaluation of results

**WJEC Specification content:**

- Unit 1 - Basic Biochemistry and Cell Organisation (including Nucleic acids and introductory Genetics)
- Unit 2 - Biodiversity and Physiology of Body Systems (including gas exchange and circulatory systems)
- Unit 3 - Energy, Homeostasis and the Environment (including the Nervous System and Kidney function)
- Unit 4 - Variation, Inheritance and Immunology (including application of reproduction and genetics)
- Unit 5 - Practical Examination (including investigation, analysis and evaluation of experimental data)



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## What examinations will I have to take?

There are two theory examination papers at the end of the first AS year (Units 1 and Units 2) and two theory examination papers at the end of second A2 year (Units 3 and Units 4). These may involve structured questions, problem solving, application of knowledge, calculations and extended writing questions.

- Unit 1 - First AS year - 80 marks -1 hours 30 minutes - 20% of qualification
- Unit 2 - First AS year - 80 marks -1 hours 30 minutes - 20% of qualification
- Unit 3 -Second A2 year - 90 marks -2 hours - 25% of qualification
- Unit 4 -Second A2 year - 90 marks -2 hours - 25% of qualification
- Unit 5 - Practical Exam - Second A2 year - 50 marks (Experimental Task 20 marks; Practical analysis Task 30 marks) -10% of qualification

Unit 5 Practical exams are assessed externally where a student will be assessed on their practical skills in an experimental task and also their written skills with in an exam paper which can include such things as graphs, statistical analysis of data and evaluation of various techniques.

## Field Trip

As an integral part of the course, we take students out on a fieldtrip for up to four days at the beginning of their second A2 year. This is so students can learn critical ecological practical skills which they cannot be taught within the classroom and enable them to apply key statistical analysis whilst interacting and experiencing first-hand key ecological interactions.

## What could I go on to do at the end of my course?

- Follow a degree course in Biology, Biochemistry, Zoology, Microbiology, Marine Biology, Plant Science, Genetics, Medicine, Dentistry, Nursing, Agriculture and Forestry, Psychology, Pharmacy etc.
- Biology as a science discipline is a useful addition to the list of subjects read predominately by Arts or Humanities based students. It demonstrates the ability to think logically and to present or evaluate data