St Mary Redcliffe and Temple School

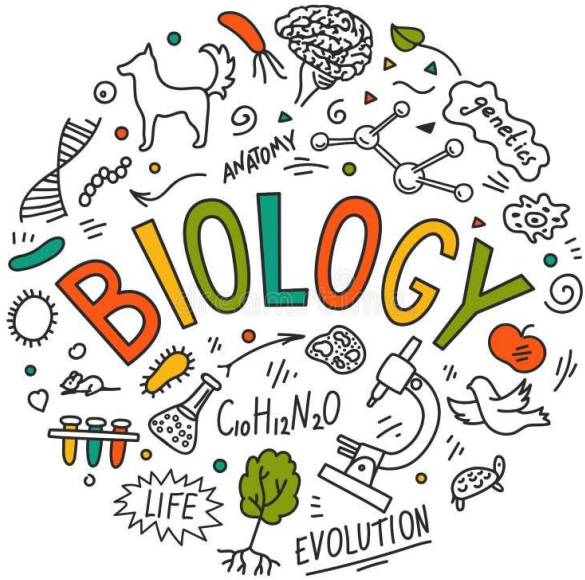
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Biology

Exam board : Edexcel Biology A (SNAB)

Specification no : 8BNO (AS)/9BNO (A level)

Link to the Specification: Here



AS course

Module	Code	Assessment	AS%
Lifestyle, Transport, Genes & Health (Topics 1+2)	8BNO/01	Exam: 1 hour 30 mins, Multiple-choice, short open-response, calculations, extended writing questions.	50%
Development, Plants & The Environment (Topics 3+4)	8BNO/02	Exam: 1 hour 30 mins, Multiple-choice, short open-response, calculations, extended writing questions.	50%

A level course

Module	Code	Assessment	A Level %
The Natural Environment & Species Survival (Topics 1-4 +5+6)	9BNO/01	Exam: 2 hours, multiple-choice, short open-response, calculations, extended writing questions.	33.3%
Energy, Exercise and Coordination (Topics 1-4 +7+8)	9BNO/02	Exam: 2 hours, multiple-choice, short open-response, calculations, extended writing questions.	33.3%
General and practical Applications in Biology (Topics 1-8)	9BNO/03	Exam: 2 hours. Synoptic questions from whole course. One long question based on pre-release scientific article.	33.3%
Science practical endorsement	9BNO/04	Core practical work carried out during the 2 years to be assessed against national common standards.	Pass/fail

The A level Biology course offers a unique chance to study real-life and cutting-edge applications of modern biology. Students begin by reading and discussing a real-life storyline and closely study the related underlying biological principles. Relevant practical activities involving investigations, microscope work, model-making and role-plays form an essential part of the course. The course requires a good knowledge of biology but emphasizes the application of knowledge so expect study work to reflect this.

Course delivery

A Level Biology is taught by highly qualified Biology teachers from a range of disciplines including pharmacology, marine ecology, neuroscience and genetics. You will be taught by two members of staff in year 12 and two members of staff in year 13.
You will have 10 lessons a fortnight in year 13 and 9 lessons a fortnight in year.

Course Content:

AS Level

Topics 1+2: Lifestyle, Transport, Genes, Health: What is the risk of getting cardiovascular disease? What factors affect the risk and how do they work? The biology covered to understand this includes heart and circulation structure and function as well as the chemistry and function of food molecules. The symptoms and causes of the hereditary disorder Cystic Fibrosis are examined including details of how it affects normal lung and digestion functions, and what is happening at the molecular level from DNA structure and genetic code to protein synthesis, structure and function. The ethics of genetic screening and treatments are discussed.

Topics 3+4: Development, Plants and The Environment: How does DNA replicate and how are new cells made? How does DNA control the development from a single egg into a complex multi-cellular organism? How do plants overcome the difficulties of being located in one place and how have humans exploited their ingenuity? The concern for disappearing biodiversity and loss of potential natural resources is used to highlight the need for biologists to identify, name and classify species. We look at the role of zoos in the conservation of endangered species.

A Level (AS plus the following)

Topics 5+6: The Natural Environment and Species Survival: An understanding of how ecology, genetics, photosynthesis and evolution play a role in how human populations interact with wildlife and the consequences on successful conservation. We examine whether climate change is actually occurring by looking at effects on biodiversity and ecosystems. How the battle is fought between pathogen and host and why diseases can still occur despite the host's protective mechanisms. How does the forensic scientist use this knowledge in determining the cause of death? All students attend a residential field trip to Slapton Ley Field Study Centre, Devon, in October.

Topics 7+8: Energy, Exercise and Coordination: Explores the relationship between respiration, homeostasis, muscle physiology and athletic performance, how genetics and animal models help understand the workings of the nervous system, including the role of neurotransmitters and the consequences of imbalances in conditions like Parkinson's disease.

Practical Skills: You will carry out core practicals and be assessed in the written exams on your ability to use apparatus skilfully and safely, produce and record valid and reliable measurements and present and analyse data appropriately. In addition, your skills will be assessed against nationally agreed criteria. You will get a pass/fail for practical skills in addition to the exam grade.

Practical endorsement grade

Students will complete 18 core practicals across the course so that their competency in the lab can be assessed. This is internally assessed against common practical assessment criteria and students will receive a 'pass' or 'fail' for this.

Entry requirements:

65 in two science subjects (including 6 in Biology if done separately) and 6 in Maths. This is addition to the standard entry requirements for studying at SMRT.

Field trip

In year 12, students will attend a field trip to Folly Farm to complete part of their practical endorsement. There is a voluntary cost associated with this trip.

Resources

- Fully resourced, modern laboratory facilities.
- All lessons available on an online sharepoint, along with core practical and exam question information.
- Twilight intervention session for additional practice
- Access to previous students' revision plans.

Recommended reading / websites:

Silent Spring by Rachel Carson, (penguin). (One of the most influential books of the 20th century. Understand why we need biologists)
Genome by Matthew Ridley (The Autobiography of our Species in 23 Chapters, one chapter for each of our chromosomes).
The Language of the Genes by Steven Jones (human genetics explained in clear and interesting way)
http://www.rsb.org.uk/
www.nationalstemcentre.org.uk/elibrary

For further information:
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