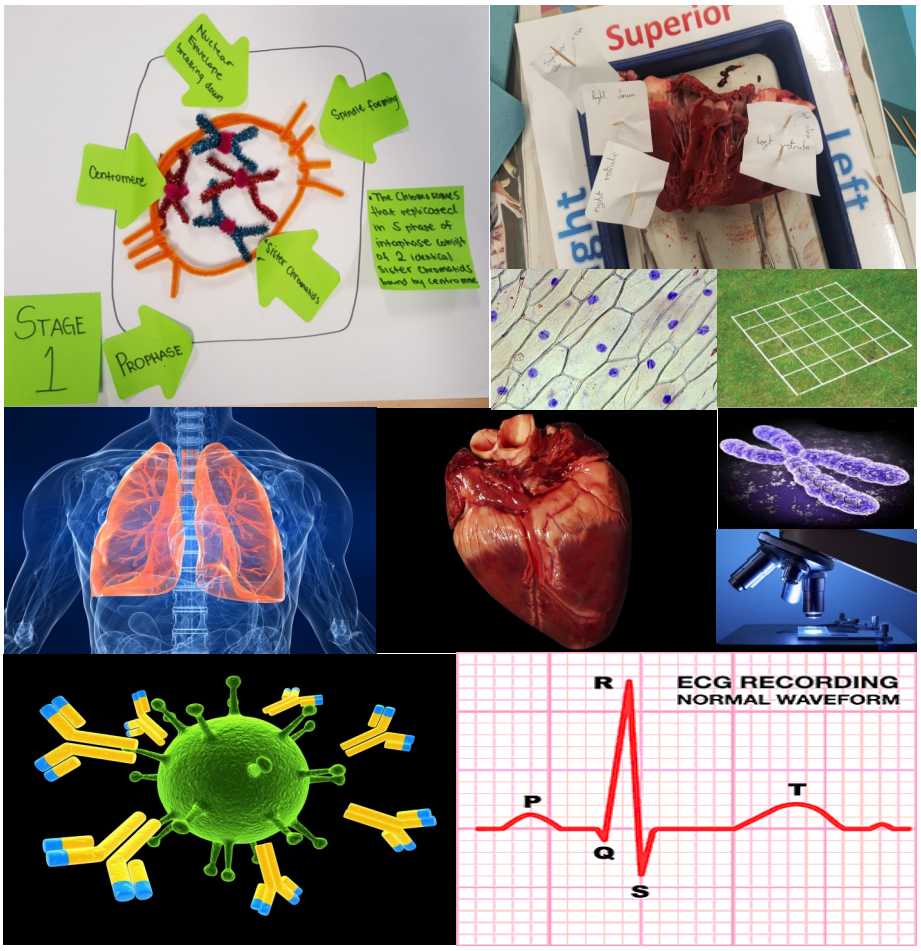
Biology



A-level Biology at Southborough Sixth Form

OCR Biology

www.ocr.org.uk

Requirements for the course

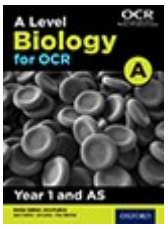
- You will need the minimum of a GCSE grade 5/6
- It is preferred that you have completed either a 'Triple Science' course or a GCSE 'Biology' course
- 'Double Science' students will only be considered if their grades in Biology are high.

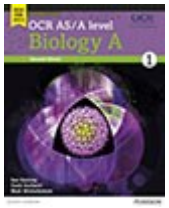
Expectations of students

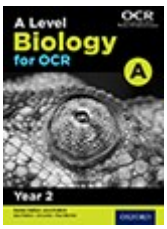
- You will work hard!
- You will support your lessons with independent reading
- You will keep up with the standards required

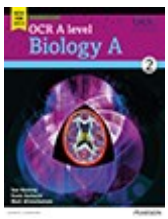
Scientific Literacy

- There is a strong emphasis on scientific literacy and cutting-edge biology
- Students will need to read scientific periodicals to keep updated with the new technological advances in science









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Biology

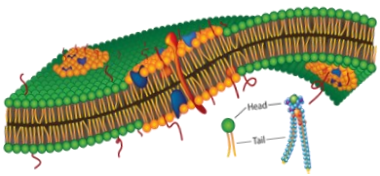
A Level Biology

First Year

- Cell structure
- Biological molecules
- Nucleotides and nucleic acids
- Enzymes
- Biological membranes
- Cell division
- Cell diversity and cellular organisation
- Exchange surfaces
- Transport in plants
- Transport in animals
- Disease, prevention and immune system
- Biodiversity
- Classification and evolution

Second Year

- Communication and Homeostasis
- Excretion as an example of homeostatic control
- Neural communication
- Hormonal communication
- Plant and animal responses
- Photosynthesis
- Respiration
- Cellular control
- Patterns of inheritance
- Manipulating genomes
- Cloning and biotechnology
- Ecosystems
- Populations and sustainability.



Mathematical skills
(10% of written examination)

At the end of your course you will be taught a number of mathematical skills. Most of these are skills to tackle statistical analysis.

- Convert between different units
- Work out breathing rate
- Recognise and use expressions in decimal and standard form
- Use ratios, fractions and percentages
- Estimate results
- Use calculators to find and use power, exponential and logarithmic functions
- Construct and interpret frequency tables, diagrams, bar charts and histograms
- Understand simple probability
- Understand mean, median and mode
- Use a scatter diagram to identify correlation
- Make order of magnitude calculations
- Select and use statistical tests
- Calculate standard deviation

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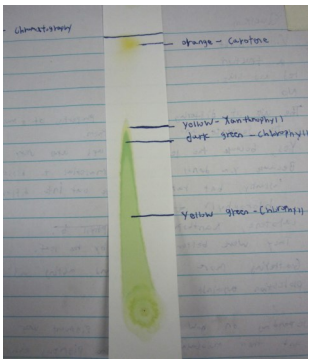
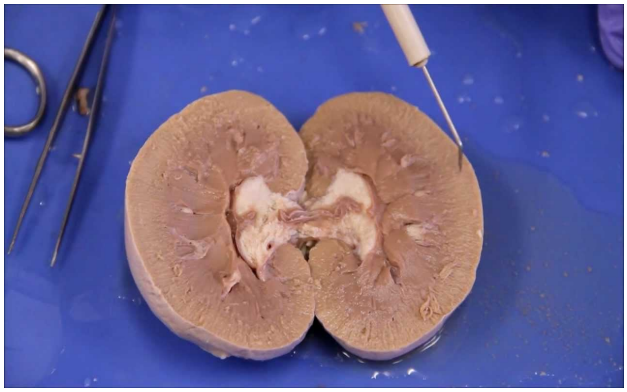
Practical endorsement for Biology

- A minimum of 12 compulsory practicals
- Assessed by teacher
- Either a pass or fail
- Performance reported as a **separate** A-level grade



Practicals include

1. Microscopes
2. Dissections
3. Environmental sampling
4. Enzyme rates
5. Colorimitry
6. Chromatography
7. Microbiological techniques
8. Transport in and out of cells



9. Qualitative testing
10. Computer modelling of DNA
11. Animal responses such as pulse
12. Student's research investigation (to be decided)

Assessment Overview for an AS only qualification

Paper			Marks	Duration	Weighting
Paper 1	**Breadth in biology**		**70**	1 hr 30 min	50%
	Section A	Multiple choice	20		
	Section B	Structured questions covering theory and practical skills	50		
Paper 2	**Depth in biology**		**70**	1 hr 30 min	50%
	Structured questions and extended response questions, covering theory and practical skills		70		

Assessment Overview for A level qualification

Paper			Marks	Duration	Weighting
Paper 1	**Biological processes**		**100**	2 hr 15 min	37%
	Section A	Multiple choice	15		
	Section B	Structured questions and extended response questions covering theory and practical skills	85		
Paper 2	**Biological diversity**		**100**	2 hr 15 min	37%
	Section A	Multiple choice	15		
	Section B	Structured questions and extended response questions covering theory and practical skills	85		
Paper 3	**Unified biology**		**70**	1 hr 30 min	26%
	Structured questions and extended response questions covering theory and practical skills		70		