



A Level Biology at Latymmer

Ms A Bridle (HOD)



Why study biology?

"The biggest innovations of the 21st century will be at the intersection of biology and technology."

Steve Jobs

Doctors trial £100 blood test that could transform how NHS detects Alzheimer's

More than 1,000 patients to take part in trial to see if the approach leads to faster and more reliable diagnoses



10th September 2025

The Millennium Seed Bank: 25 Years of Impact and Inspiration



27 October 2025

27th October 2025

nature

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NEWS | 31 October 2025

Personalized gene editing helped one baby: can it be rolled out widely?

In a world first, a bespoke gene-editing therapy benefited one child. Now researchers plan to launch a clinical trial of the approach.

31st October 2025

Why study biology?

- **Health & Medicine** - Understanding and treating disease, developing new therapies
- **Environmental Crisis** - Tackling climate change, biodiversity loss, sustainability
- **Food Security** - Feeding the world's growing population
- **Biotechnology Revolution** - Gene editing, synthetic biology, cutting-edge innovation
- **Understanding Ourselves** - How our brains work, why we age, our evolutionary origins

What does biology offer you?

- **Scientific Method** - Designing experiments, testing hypotheses, analysing data objectively
- **Critical Thinking** - Evaluating evidence, identifying patterns, solving complex problems
- **Practical Laboratory Skills** - Using specialized equipment, conducting investigations safely and accurately
- **Data Analysis** - Interpreting graphs, statistics, and scientific results to draw conclusions
- **Communication** - Explaining complex scientific concepts clearly in writing and discussion
- **Diverse careers opportunities** - Provides a strong foundation for many diverse careers in natural sciences

Latymer Biology 2025 Results

Total grades	A*	A	B	C	D	E	U	X
74	27	29	8	8	1	1	0	0

- Average grade = A
- 76% A* - A

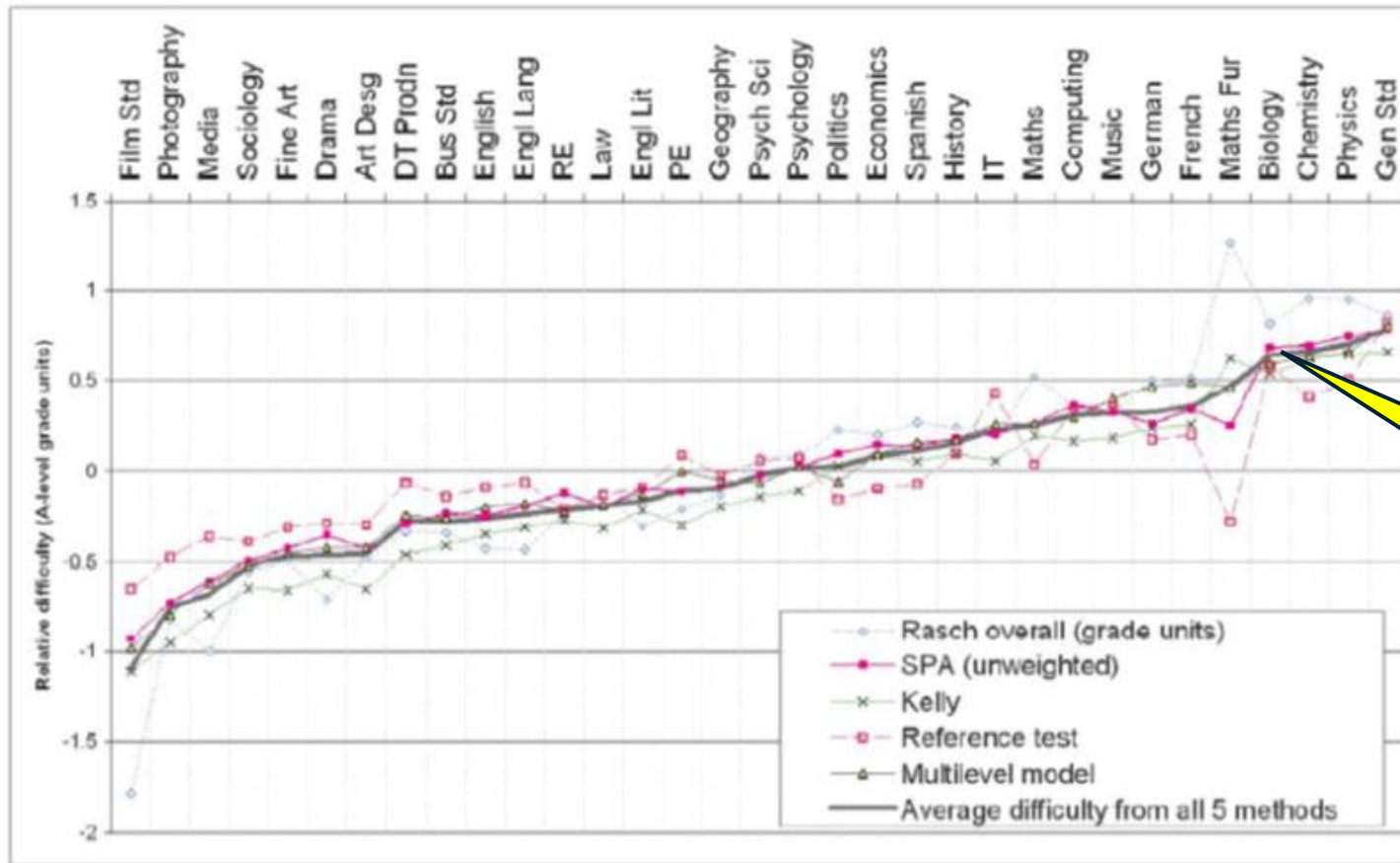
Latymer 2025 Leavers destinations

- Biology at Oxford
- Natural sciences at Cambridge
- Audiology at UCL
- Biological sciences at Imperial
- Medicine at Manchester
- Biomedical science at Reading
- Dentistry at Kings
- Environmental science at Manchester
- Biochemistry at Bristol
- Biomedical engineering at Queen Mary
- Pharmacology at Kings
- Veterinary science at Bristol
- Global health and social medicine at Kings
- Neuroscience at Nottingham

Entry requirements

- **GCSE grade 7 or above in Biology *or* Combined Science**
- Total of **6 GCSEs grade 7 or above**
- OCR 21st Century Science not ideal, but the website has bridging activities to convert over the Summer
- External applicants are more than welcome - Assessment test for Science / Maths applicants on Saturday 10th January 2026

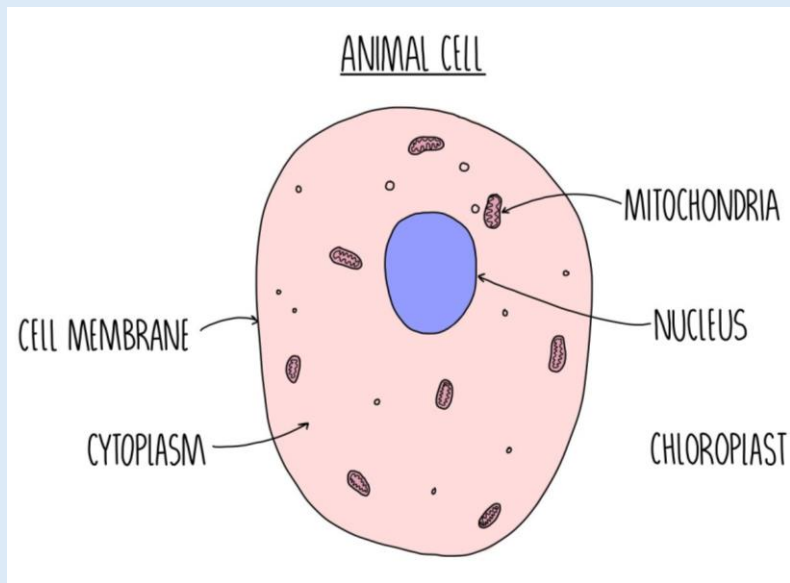
Drastic jump from GCSE to A Level



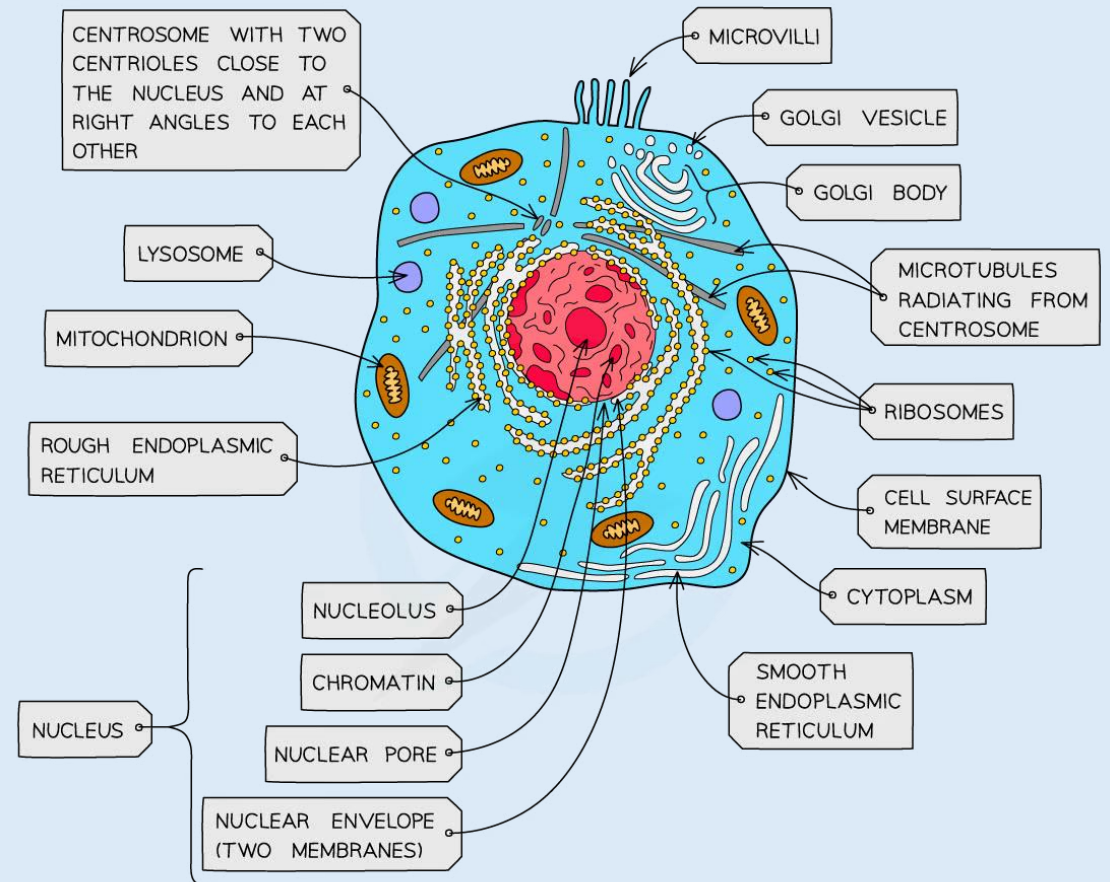
Biology is NOT an easy subject!

Drastic jump from GCSE to A Level

GCSE

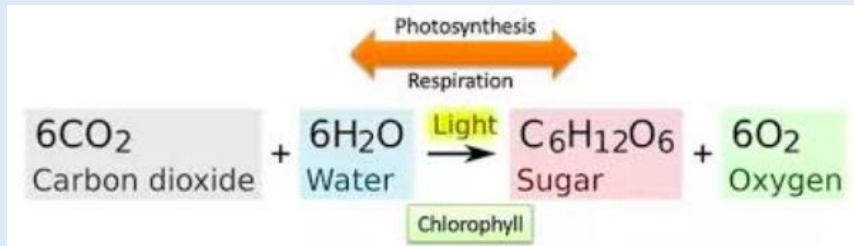


A Level

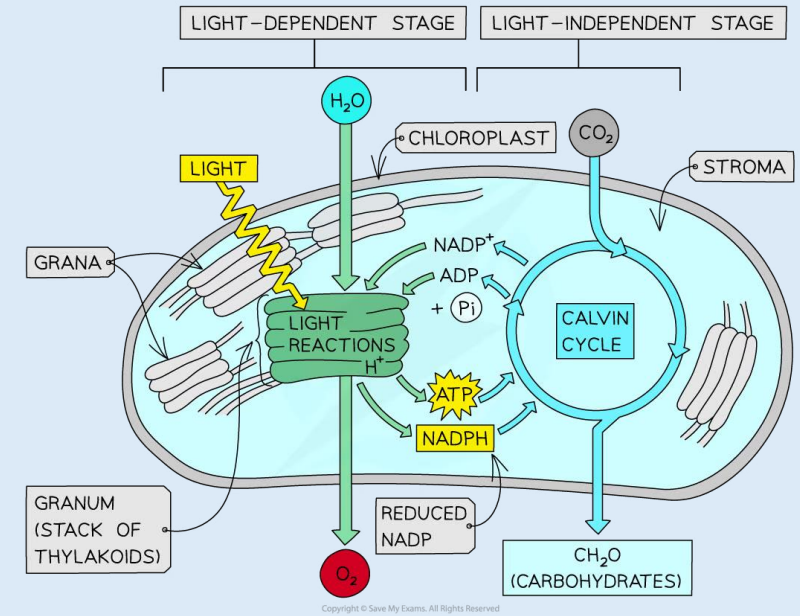
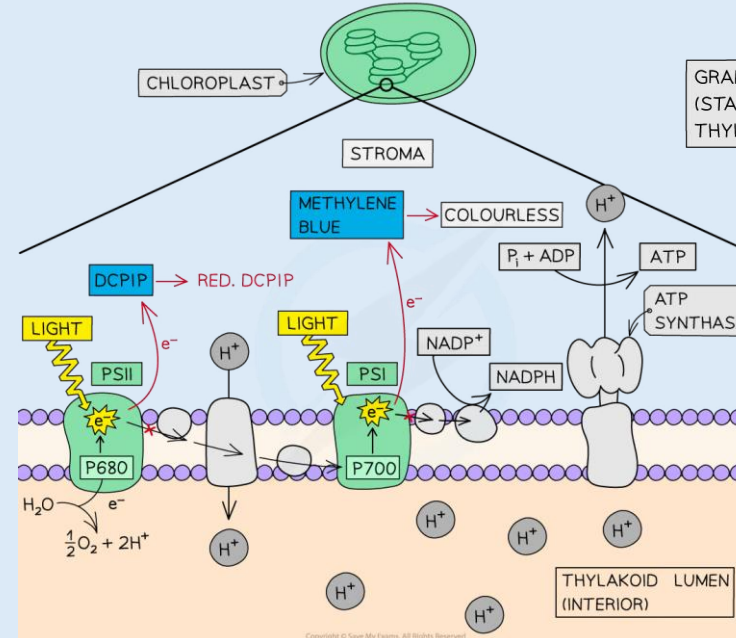


Drastic jump from GCSE to A Level

GCSE

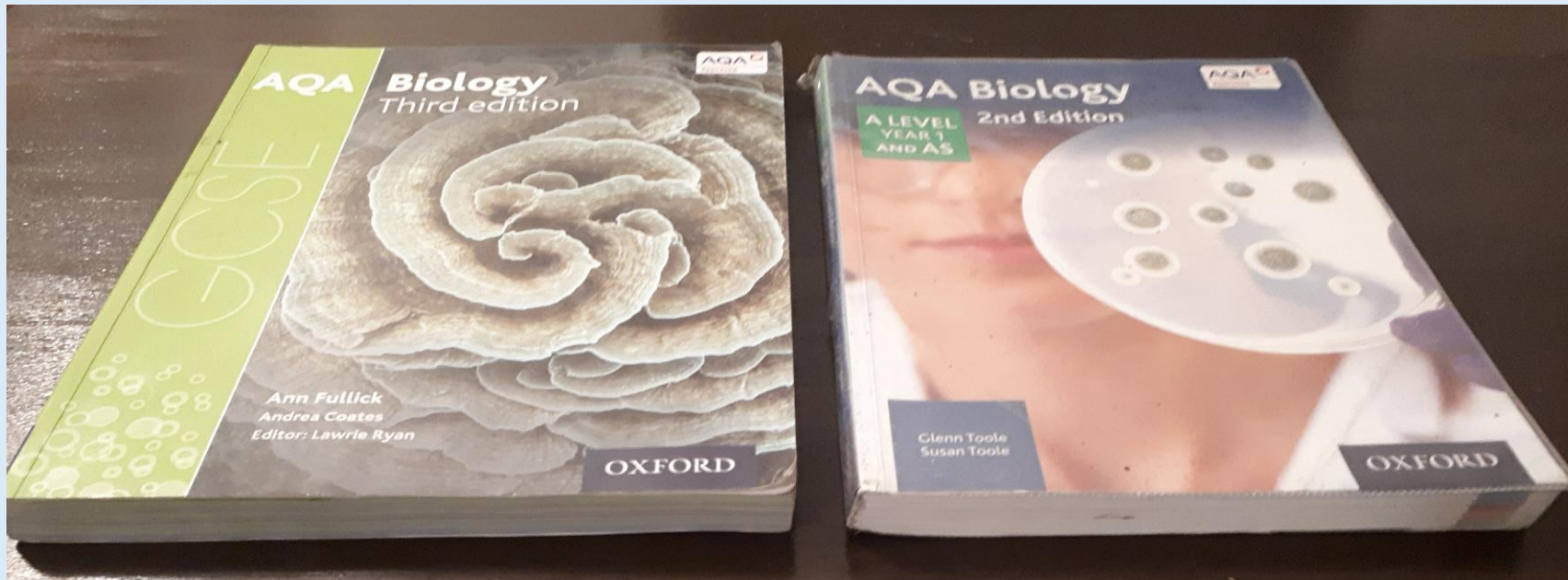


A Level



Drastic jump from GCSE to A Level

- A-level is a lot more work and the exam questions are a lot less formulaic
- You will have biology almost every day
- You will have to work outside lessons too



Paper 3 has a 25 mark essay

Section B

Answer **one** question.

You are advised to spend no more than 45 minutes on this section.

*Do not write
outside the
box*

0 7

Write an essay on **one** of the topics below.

EITHER

0 7 . 1

The importance of DNA as an information-carrying molecule **and** its use in gene technologies.

[25 marks]

OR

0 7 . 2

The importance of bonds and bonding in organisms.

[25 marks]

Maths skills are vital

- 10% of the exam questions will be mathematical/ statistical

- (c) By how many times is the species diversity in the canopy greater than in the understorey?
Show your working.

Use the following formula to calculate species diversity.

$$d = \frac{N(N-1)}{\sum n(n-1)}$$

where N is the total number of organisms of all species and n is the total number of organisms of each species.

Answer = _____

(3)

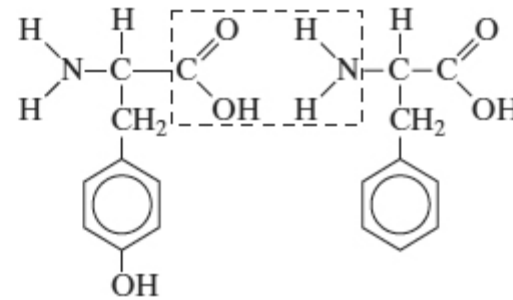
- (d) The scientists carried out a statistical test to see if the difference in the distribution of each species between the canopy and understorey was due to chance. The P values obtained are shown in the table.

Explain what the results of these statistical tests show.

You've got to enjoy chemistry (at least a bit!)

- The course contains a lot of biochemistry

The diagram shows the structure of two amino acid molecules, tyrosine and phenylalanine.



Tyrosine

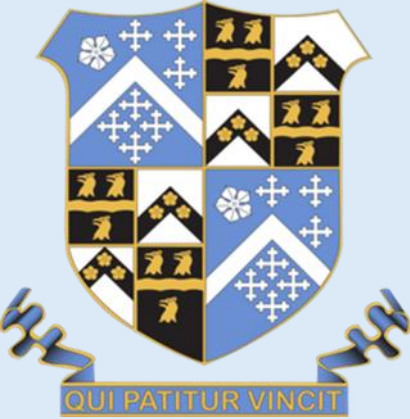
Phenylalanine

- (b) Copy from the diagram the R group in the phenylalanine molecule.

(1)

- (c) (i) In the space below, draw the chemical bond formed when these two amino acids are joined by condensation. You need only draw the parts of the molecules shown in the box.

Latymer Biology team



Dr Bermudez



Ms Bridle
(HOD)



Ms Kocjancic



Ms Owen



Ms Safdar



Ms Barber
(technician)

Class sizes and structure

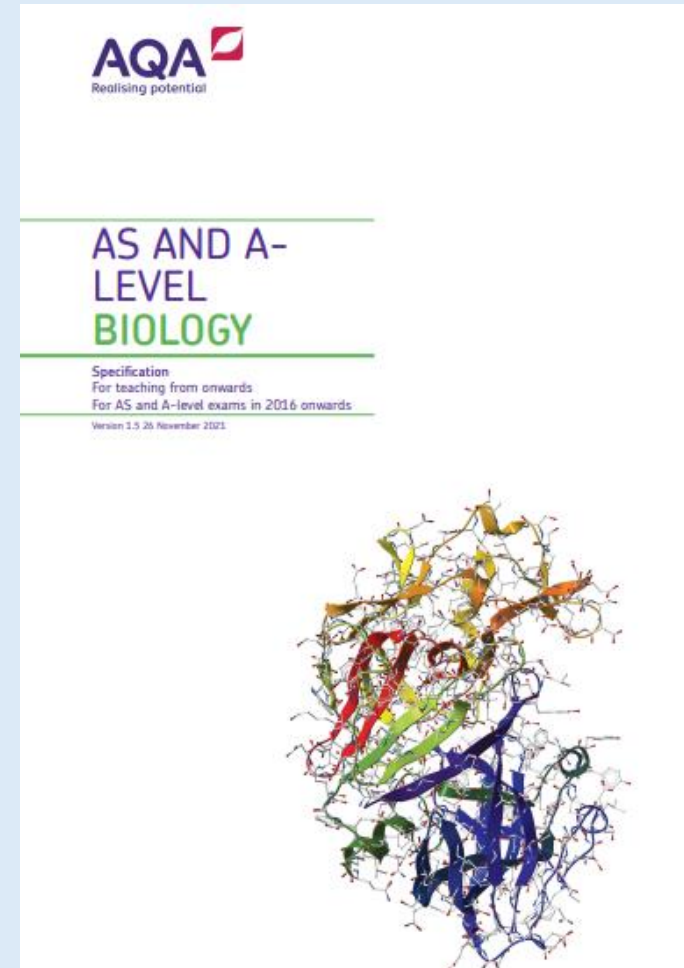
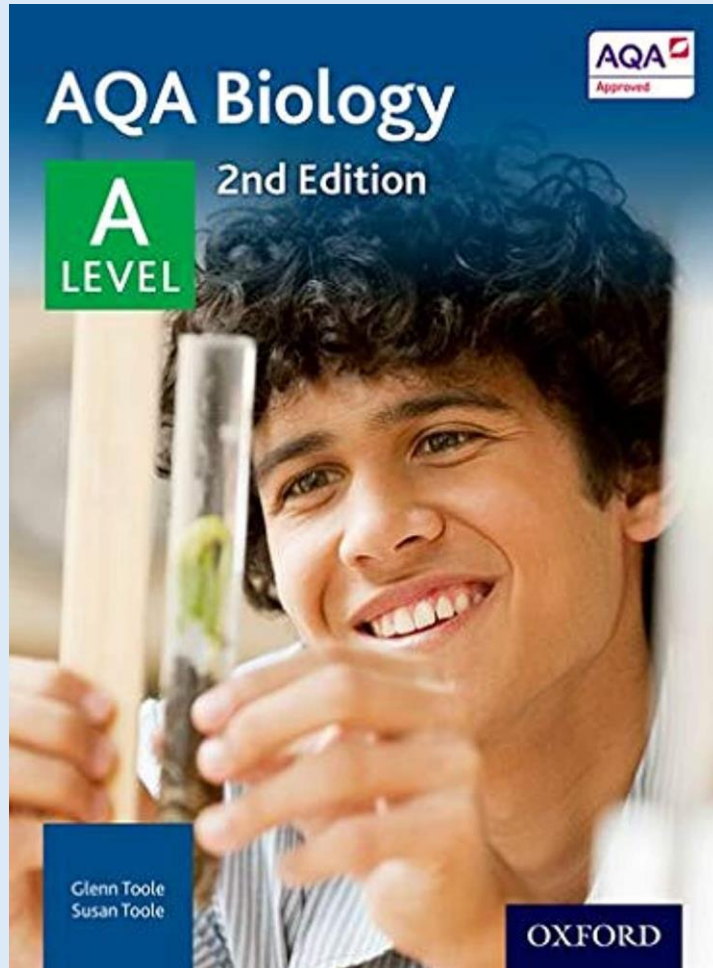
- About 1/3 of the sixth form take biology
- Roughly equal boys:girls
- 4 well-equipped biology labs and a dedicated biology specialist technician
- 5 Classes of around 15 students (largest Y12 class this year is 17)
- Classes are **not** based on ability
- Each class has **two teachers**

Enrichment opportunities

- Medical society
- Biology society
- Local field trip (part of course)
- Biology Olympiad
- External speakers

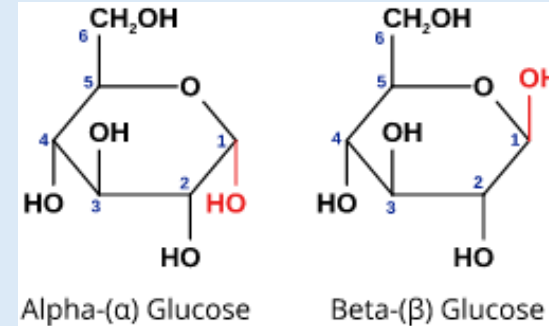


The Biology Curriculum – AQA (7402)

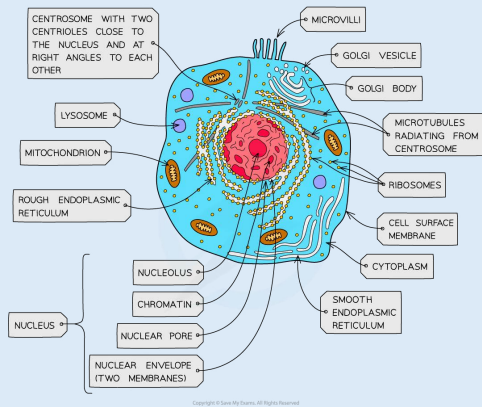


Y12 Topics

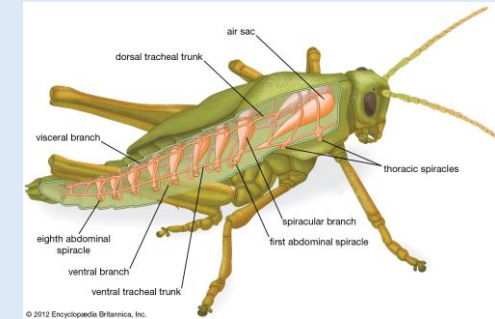
1. Biological molecules



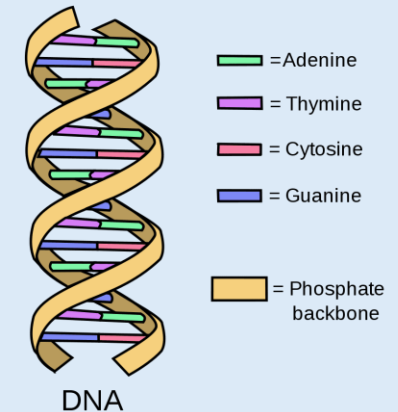
2. Cells



3. Organisms exchange substances with their environment



4. Genetic information, variation and relationships between organisms



Y12 Structure

	Teacher A	Teacher B
Autumn Term	Biological Molecules	Cells
Spring Term	Genetics and Variation	Exchange
Summer Term	Either AS external exam OR internal UCAS exam Ecology and Field Work (year 13 only)	

6 required practicals

1. Enzymes
2. Cell division in root tip (microscopy)
3. Osmosis in potato
4. Permeability of beetroot cell membranes
5. Dissection
6. Aseptic technique

Y12 External AS exam

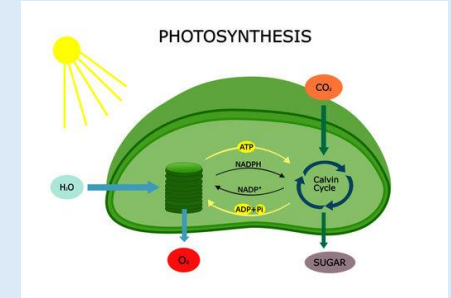
- Sat only by a small number of students intending to drop biology in Y13
- Rest of the cohort will sit the internal UCAS exam

Assessments

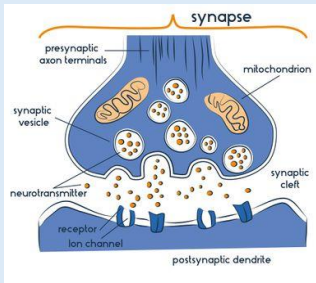
Paper 1	+	Paper 2
What's assessed <ul style="list-style-type: none">• Any content from topics 1–4, including relevant practical skills		What's assessed <ul style="list-style-type: none">• Any content from topics 1–4, including relevant practical skills
Assessed <ul style="list-style-type: none">• written exam: 1 hour 30 minutes• 75 marks• 50% of AS		Assessed <ul style="list-style-type: none">• written exam: 1 hour 30 minutes• 75 marks• 50% of AS
Questions <ul style="list-style-type: none">• 65 marks: short answer questions• 10 marks: comprehension question		Questions <ul style="list-style-type: none">• 65 marks: short answer questions• 10 marks: extended response questions

Y13 Topics

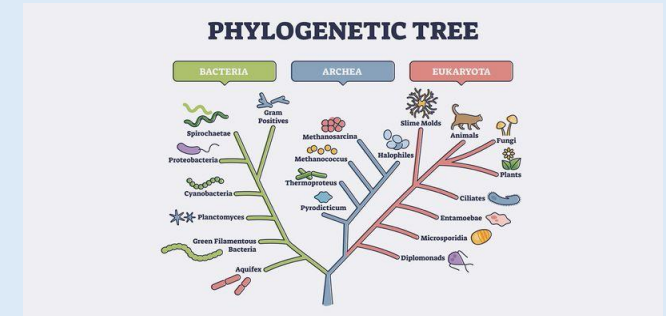
5. Energy transfers in and between organisms



6. Organisms respond to changes in their internal and external environments



7. Genetics, populations, evolution and ecosystems



8. The control of gene expression



DNA Template



Primers



DNA Polymerase



dNDPs



Buffer/Cofactors

Y13 Structure

	Teacher A	Teacher B
Autumn Term	Energy Transfers	Response to change
Spring Term	Gene expression	Genetics and Evolution
Summer Term	External A-level Exam	

6 more required practicals

7. Chromatography of plant pigments
8. Activity of Chloroplasts
9. Respiration in yeast
10. Behaviour of maggots
11. Measuring glucose in “urine” samples
12. Field work

Y13 A Level Exams

Assessments

marksphysicshelp MPH

Paper 1

What's assessed

- Any content from topics 1–4, including relevant practical skills

Assessed

- written exam: 2 hours
- 91 marks
- 35% of A-level

Questions

- 76 marks: a mixture of short and long answer questions
- 15 marks: extended response questions

+

Paper 2

What's assessed

- Any content from topics 5–8, including relevant practical skills

Assessed

- written exam: 2 hours
- 91 marks
- 35% of A-level

Questions

- 76 marks: a mixture of short and long answer questions
- 15 marks: comprehension question

+

Paper 3

What's assessed

- Any content from topics 1–8, including relevant practical skills

Assessed

- written exam: 2 hours
- 78 marks
- 30% of A-level

Questions

- 38 marks: structured questions, including practical techniques
- 15 marks: critical analysis of given experimental data
- 25 marks: one essay from a choice of two titles

3 X 2 hour papers.

Paper 3 is synoptic.

Practical skills are assessed across all 3 papers.

Paper 3 has a 25 mark synoptic essay

12 required practicals

Biology required activities (1-6 AS), (1-12 A-level) AQA	
Required activity	Apparatus and technique reference
1. Investigation into the effect of a named variable on the rate of an enzyme-controlled reaction	a, b, c, f, l
2. Preparation of stained squashes of cells from plant root tips; set-up and use of an optical microscope to identify the stages of mitosis in these stained squashes and calculation of a mitotic index	d, e, f
3. Production of a dilution series of a solute to produce a calibration curve with which to identify the water potential of plant tissue	c, h, j, l
4. Investigation into the effect of a named variable on the permeability of cell-surface membranes	a, b, c, j, l
5. Dissection of animal or plant gas exchange or mass transport system or of organ within such a system	e, h, j
6. Use of aseptic techniques to investigate the effect of antimicrobial substances on microbial growth	c, i
7. Use of chromatography to investigate the pigments isolated from leaves of different plants, eg leaves from shade-tolerant and shade-intolerant plants or leaves of different colours	b, c, g
8. Investigation into the effect of a named factor on the rate of dehydrogenase activity in extracts of chloroplasts	a, b, c
9. Investigation into the effect of a named variable on the rate of respiration of cultures of single-celled organisms	a, b, c, i
10. Investigation into the effect of an environmental variable on the movement of an animal using either a choice chamber or a maze	h
11. Production of a dilution series of a glucose solution and use of colorimetric techniques to produce a calibration curve with which to identify the concentration of glucose in an unknown 'urine' sample	b, c, f
12. Investigation into the effect of a named environmental factor on the distribution of a given species	a, b, h, k, l

You build your investigative and practical skills through **12 required practicals** assessed via 5 'CPAC' skills.

You 'pass' or 'fail' the practical aspect of the course, but all skills gained are relevant to the 3 papers.

CPAC Skills

1. Following written instructions
2. Planning and carrying out investigations
3. Working safely
4. Gathering and recording accurate data
5. Analysing data and researching

Is A Level Biology right for you?

- Do you like chemistry?
- Do you like maths and analysing data?
- Do you write full, in-depth answers?
- Do you work hard?
- Are you organised?
- Are you ambitious and like a challenge?
- Are you an independent learner?
- Do you have a **genuine strong interest in biology**? Never study an A Level science because somebody else is telling you to, you need to enjoy it to thrive.