



Curriculum Map cover sheet

Subject: KS5 Biology	Year Group	Key Stage
Links to prior learning A Level Biology lessons are carefully designed to build on the foundation of knowledge students developed at GCSE. To support students with a smooth transition from GCSE to A Level we have the following in place: - Structured curriculum planning: All links to prior knowledge are clearly annotated in the department's schemes of work, ensuring that each lesson connects meaningfully to what students have previously learned. - Reinforcement of core concepts: Teachers explicitly reference relevant GCSE material to help students make connections and strengthen their understanding of more advanced content.	Retrieval Practice To help reinforce key knowledge and promote long-term memory retention, our students take part in weekly retrieval activities: -Year 12: Once a week, students complete a 10-question quiz at the start of a lesson, focused on topics they have already studied. This regular practice helps consolidate learning and identify areas that may need further review. -Year 13: Students complete a 12-question quiz each week, revisiting content from their first year of study. This ensures that foundational knowledge from Year 12 remains strong while they tackle new Year 13 material.	Adaptive teaching strategies To support your child's progress, a range of evidence-based strategies are used consistently in lessons: -Scaffolded exam practice: Students are provided with structured exam questions that may include key vocabulary prompts, hints, or gap-fill exercises to build confidence and understanding. -Verbal support: Teachers offer verbal guidance during class discussions to help students articulate their thinking and deepen their understanding. -Ongoing assessment: Regular formative assessments are used to identify areas for improvement. Targeted feedback is provided to help address any learning gaps. -Cold calling for engagement and assessment: All students are included in cold-calling questioning during lessons. -Collaborative learning opportunities: Activities such as Think-Pair-Share are used to encourage discussion, collaboration, and peer support, helping students refine their ideas and learn from one another.
Literacy Strong literacy skills are essential for success in A Level Biology, where precise language, subject-specific	Oracy Oracy is actively practised and demonstrated through various interactive strategies that promote student	Numeracy Numeracy plays a critical role in A Level Biology, with at least 10% of the marks in OCR exams dedicated to the

vocabulary, and clear written communication are key to achieving high marks. We develop these skills through a range of strategies embedded in our teaching: - Specification annotations: Each student receives a copy of the specification for every topic. They are expected to regularly annotate these documents with definitions, key terms, diagrams, and concise summaries. This process not only supports content revision but also helps students practise selecting and using subject-specific vocabulary effectively. - Vocabulary development and spelling accuracy: As part of this annotation work, students are encouraged to research unfamiliar terms and check spelling to ensure accuracy. This reinforces correct scientific language and helps them become more confident and precise in their written responses. -Understanding exam command words: Time is dedicated to studying the command words that begin exam questions (e.g. describe, explain, evaluate). This ensures students fully understand what is being asked and can structure their responses appropriately—an important aspect of scientific literacy. -Using mark schemes to refine language: Students engage with official exam mark schemes to identify the terminology and phrasing that examiners expect. They also learn to recognise wording that is close to correct but not credited, improving their ability to express ideas clearly and accurately under exam conditions.	engagement, communication, and critical thinking, such as: - Class discussions and debates: Students participate in discussions and debates on complex biological topics, such as ethical issues in biology or the implications of scientific discoveries. These opportunities encourage students to articulate their understanding, listen critically to others, and respond to different viewpoints. - Collaborative learning: Activities like Think-Pair-Share and group discussions allow students to work together, share ideas, and build on each other's contributions. - Questioning and Answering (Cold Calling): Cold calling is used to encourage all students to actively participate in answering questions. This practice helps students refine their ability to respond concisely, articulate their thoughts clearly, and listen attentively to peer contributions. - Presentations and scientific explanations: Students occasionally present their findings or understanding of specific biological topics to the class, demonstrating their ability to structure information logically and communicate clearly. -Use of Scientific Terminology: Throughout lessons, students are encouraged to use and refine their scientific vocabulary. This includes practicing pronunciation and using the correct terminology.	application of mathematical skills. To support students in this area, a variety of mathematical techniques are integrated throughout the curriculum. Students will develop and practise foundational skills, including: • Converting between units • Calculating percentage increase and decrease • Using significant figures and decimal places • Calculating means In addition to these essential skills, students will also engage with more advanced mathematical concepts such as the following statistical tests: • Spearman's rank correlation • Student's t-test • Standard deviation • Chi-squared test • Hardy-Weinberg equilibrium • Simpson's diversity index These mathematical techniques are introduced in the context of biological topics, helping students understand their relevance to real-world scientific investigations. Students will also be required to analyse and interpret data presented in various formats, such as tables, graphs, and statistical outputs. Regular practice with these question types helps build students' confidence and proficiency.
Careers across the Curriculum Starting in September 2025, students will receive a weekly article from Biological Science Review magazine. Each article will highlight an exciting and inspiring career that a background in Biology can lead to. These articles aim to broaden students'	Wider Curriculum opportunities Extracurricular Activities: In previous years, a KS5 Science Club has provided students with opportunities to explore scientific topics beyond the A Level syllabus, encouraging curiosity, collaboration, and independent inquiry. We aim to offer similar clubs and projects in the future to	Super Curriculum From September 2025, students will have the opportunity to subscribe to Biological Science Review magazine at a discounted rate through the school. This highly regarded publication is designed to extend students' learning beyond the classroom, with engaging, accessible articles that deepen

understanding of the many opportunities available within the field—ranging from research and healthcare to environmental science and biotechnology. By regularly engaging with these articles, students will gain valuable insight into how their A Level Biology studies can translate into real-world careers, helping them make informed decisions about their future pathways. In the past, Queensmead has hosted events such as a Careers in Medicine evening, alongside other career-focused sessions. Guest speakers have been invited to engage with Biology students, promoting the study of science-related courses at university, degree-level apprenticeships, and careers in the sciences. Looking ahead, there are plans to explore opportunities such as university taster days, summer schools, and visits to science-related workplaces to provide students with valuable insight into potential career pathways.	continue supporting students' passion for science. Curriculum-Linked Educational Visits: School trips and external visits play an important role in bringing biological concepts to life. For example, a visit to a zoo directly supports learning in topic 4.2.1 (<i>Biodiversity</i>), allowing students to explore real-world applications such as the role of zoos in ex situ conservation efforts. Personal Development (PD) Sessions There are strong connections between A Level Biology and the fortnightly Personal Development (PD) sessions students attend. Topics such as health and disease, genetics, bioethics, and environmental sustainability often overlap	understanding and broaden knowledge across a range of biological topics. Reading widely around the subject not only nurtures a genuine passion for Biology but also helps students develop the critical thinking and subject confidence that often lead to stronger performance in final exams.  Super Curriculum - SCIENCE
Assessment and feedback Regular assessment and targeted feedback are essential in helping students monitor their progress and identify areas for improvement. Feedback is delivered in a variety of forms, including written comments on assessed work, verbal feedback during class discussions or individual support, and whole-class feedback highlighting common strengths and areas for development. Examples of forms of assessment, for which feedback is given: <i>Cold calling in lessons</i> Teachers strive to actively engage all students by directing questions to each individual at least once per lesson, ensuring consistent checks on both understanding and participation. <i>Weekly Retrieval Practice:</i> Short quizzes are used at the start of lessons to reinforce key knowledge. Students receive immediate verbal feedback to address misconceptions and strengthen		

understanding.

End-of-Topic Tests:

At the end of each topic, students complete a more formal assessment. These tests help track progress over time and inform future teaching and revision.

Mini Whiteboard Checks:

Mini whiteboards are used in every lesson to carry out quick, low-pressure checks of student understanding, enabling teachers to identify and address whole class and individual learning needs immediately.

Mock Examinations:

Full mock exams are held at key points in the academic year, giving students experience with exam-style questions and conditions.

Practical Assessments:

Students complete a minimum of 12 assessed practicals over the two-year course, developing essential scientific skills and fulfilling the practical endorsement component of the A Level.

Year 1Year 2**Module 1**

1.1 Practical skills assessed in a written examination

- 1.1.1 Planning
- 1.1.2 Implementing
- 1.1.3 Analysis
- 1.1.4 Evaluation

1.2 Practical skills assessed in the practical endorsement

- 1.2.1 Practical skills
- 1.2.2 Use of apparatus and techniques

Module 2

- 2.1.1 Cells and microscopy
- 2.1.2 Biological molecules
- 2.1.3 Nucleic acids
- 2.1.4 Enzymes
- 2.1.5 Plasma membrane
- 2.1.6 Cell division

Module 3

- 3.1.1 Gas exchange
- 3.1.2 Transport in animals
- 3.1.3 Transport in plants

Module 4

- 4.1.1 Communicable disease
- 4.2.1 Biodiversity
- 4.2.2 Classification
- 4.2.2 Evolution

Module 5

- 5.1.1 Communication and homeostasis
- 5.1.2 PART 1 Excretion: Liver
- 5.1.2 PART 2 Excretion: Kidneys
- 5.1.3 Neuronal communication
- 5.1.4 Hormonal communication
- 5.1.5 PART 1 Animal responses
- 5.1.5 PART 2 Plant responses
- 5.2.2 Respiration
- 5.2.1 Photosynthesis

Module 6

- 6.1.1 Cellular control
- 6.1.2 PART 1 Patterns in inheritance
- 6.1.3 Manipulation
- 6.2.1 Cloning and biotechnology

Module 6

- 6.1.1 Mutations
- 6.1.2 PART 2 More evolution
- 6.3.2 Conservation
- 6.3.1 Ecosystems
- 6.3.2 Populations

Summer Exams

Topics covered
in each paper

Biological processes
(01)

100 marks

2 hour 15 minutes
written paper

37%
of total
A level

Module 1
Module 2
Module 3
Module 5

Biological diversity
(02)

100 marks

2 hour 15 minutes
written paper

37%
of total
A level

Module 1
Module 2
Module 4
Module 6

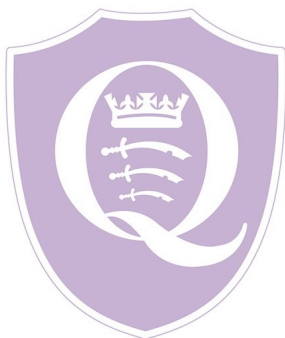
Unified biology
(03)

70 marks

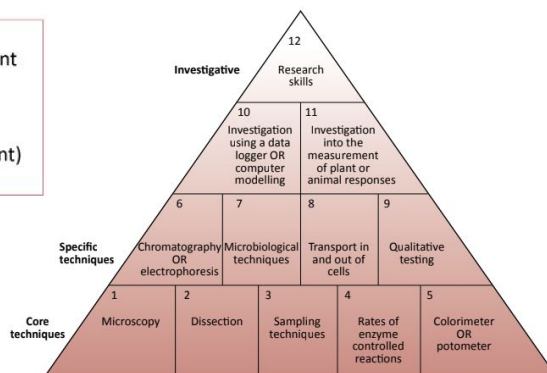
1 hour 30 minutes
written paper

26%
of total
A level

Module 1
Module 2
Module 3
Module 4
Module 5
Module 6



Practical Endorsement
in biology
(04)
(non exam assessment)



KS5 Biology Curriculum Map

Year 12

September

Taught all the way through the two year course:

1.1 Practical skills assessed in a written examination

- 1.1.1 Planning
- 1.1.2 Implementing
- 1.1.3 Analysis
- 1.1.4 Evaluation

1.2 Practical skills assessed in the practical endorsement

- 1.2.1 Practical skills
- 1.2.2 Use of apparatus and techniques

Teacher 1

2.1.1 Cells and microscopy

2.1.3 Nucleic acids

6.1.1 Mutations

2.1.5 Plasma membrane

3.1.1 Gas exchange

3.1.2 Transport in animals

Teacher 2

2.1.2 Biological molecules

2.1.4 Enzymes

2.1.6 Cell division

3.1.3 Transport in plants

4.1.1 Communicable disease

4.2.2 Classification

4.2.2 Evolution

Module 1

Module 2

Module 3

Module 4

Module 5

Module 6

Teacher 1 and teacher 2

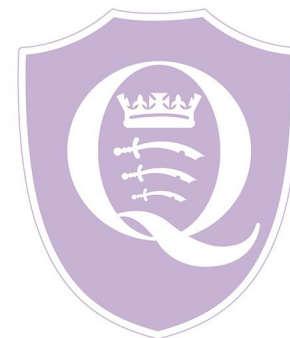
4.2.1 Biodiversity

6.3.2 Conservation

6.3.1 Ecosystems

6.3.2 Populations

July



KS5 Biology Curriculum Map

Year 13

September

Taught all the way through the two year course:

1.1 Practical skills assessed in a written examination

- 1.1.1 Planning
- 1.1.2 Implementing
- 1.1.3 Analysis
- 1.1.4 Evaluation

1.2 Practical skills assessed in the practical endorsement

- 1.2.1 Practical skills
- 1.2.2 Use of apparatus and techniques

Teacher 1

6.1.1 Cellular control

6.1.2 PART 2 More evolution

6.1.3 Manipulating genomes

5.1.5 Animal responses

5.1.3 Neuronal communication

5.1.5 Muscles

5.1.5 Plant responses

Teacher 2

6.1.2 PART 1 Patterns in inheritance

6.3.2 Populations

6.2.1 Cloning and biotechnology

5.1.2 Excretion

5.2.2 Respiration

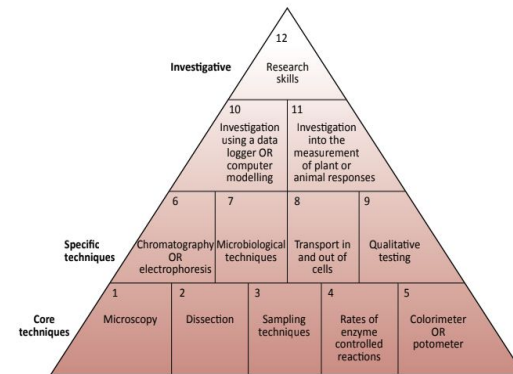
5.2.1 Photosynthesis

5.1.1 Communication and homeostasis

5.1.4 Hormonal communication

6.3.1 Ecosystems

Practical Endorsement in biology
(04)
(non exam assessment)



May

Summer Exams

Biological processes
(01)

100 marks

2 hour 15 minutes
written paper

37%

of total
A level

Module 1

Module 2

Module 3

Module 5

Biological diversity
(02)

100 marks

2 hour 15 minutes
written paper

37%

of total
A level

Module 1

Module 2

Module 4

Module 6

Unified biology
(03)

70 marks

1 hour 30 minutes
written paper

26%

of total
A level

Module 1

Module 2

Module 3

Module 4

Module 5

Module 6

