



Science Curriculum

Our philosophy is Science for all. We believe that science has something to suit students of all abilities and aspirations. We have very high expectations for our students to meet and exceed their potential in Science.

The Science team consists of 5 full time Science teachers across the three specialisms and a Science technician. We have 5 fully equipped Science labs in which all Science lessons are delivered.

Key Stage 3

In Year 7 and 8 students have 6 hours of Science lessons a fortnight and all topics are 10-12 lessons. Students are assessed during topics and at the end of each topic. In addition, students will sit cumulative assessments at each assessment point on the school calendar.

Year 7 topics

Autumn\Winter	Lab safety & transition assessment	Cells	Forces & Gravity	Particles
Spring	Mixtures	Magnets & Electricity		
Summer	Reproduction & Variation	Energy Costs & Transfer		

Year 8 topics

Autumn\Winter	Breathing & Digestion	Types of Reaction	Light & Sound	
Spring	Magnets & Electricity	Periodic table & elements	Respiration & Photosynthesis	
Summer	Wave effects & Photosynthesis	Interdependence		



Key Stage 4

Overview

At key stage 4 we offer 2 courses AQA GCSE Combined Science, Trilogy (8464) and AQA Triple Science (8461, 8462, 8463). All students have 9 hours of Science a fortnight. From year 9 students will be streamed and the top 3 sets will be taught the Triple Science content, as we move through the course adjustments are made depending on the cohort as to how many students follow each route. These qualification is linear. Linear means that students will sit all their exams at the end of the course.

Trilogy

Course structure

Students cover topics from Biology, Chemistry and Physics and will usually have 3 Science teachers. The topics covered are:

Biology: Cell biology, Organisation, Infection and response, Bioenergetics, Homeostasis and response, Inheritance, variation and evolution, Ecology, Key ideas.

Chemistry: Atomic structure and the periodic table, Bonding, structure, and the properties of matter, Quantitative chemistry, Chemical changes, Energy changes, The rate and extent of chemical change, Organic chemistry, Chemical analysis, Chemistry of the atmosphere, Using resources, Key ideas.

Physics: Energy, Electricity, Particle model of matter, Atomic structure, Forces, Waves, Magnetism and electromagnetism, Key ideas.

Assessments

There are six papers: two Biology, two Chemistry and two Physics all at the end of Y11. Each of the papers will assess knowledge and understanding from distinct topic areas. There is no coursework element, students are required to carry out a number of required practical activities and their knowledge and understanding of these will be assessed in the exams.



Biology Paper 1

What's assessed

Biology topics 1–4: Cell Biology; Organisation; Infection and response; and Bioenergetics.

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.



Biology Paper 2

What's assessed

Biology topics 5–7: Homeostasis and response; Inheritance, variation and evolution; and Ecology.

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.

Chemistry Paper 1

What's assessed

Chemistry topics 8–12: Atomic structure and the periodic table; Bonding, structure, and the properties of matter; Quantitative chemistry; Chemical changes; and Energy changes.

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.



Chemistry Paper 2

What's assessed

Chemistry topics 13–17: The rate and extent of chemical change; Organic chemistry; Chemical analysis; Chemistry of the atmosphere; and Using resources.

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.



Physics Paper 1
<p>What's assessed</p> <p>Physics topics 18–21: Energy; Electricity; Particle model of matter; and Atomic structure.</p>
<p>How it's assessed</p> <ul style="list-style-type: none"> • Written exam: 1 hour 15 minutes • Foundation and Higher Tier • 70 marks • 16.7 % of GCSE
<p>Questions</p> <p>Multiple choice, structured, closed short answer, and open response.</p>

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Physics Paper 2
<p>What's assessed</p> <p>Physics topics 22–24: Forces; Waves; and Magnetism and electromagnetism</p>
<p>How it's assessed</p> <ul style="list-style-type: none"> • Written exam: 1 hour 15 minutes • Foundation and Higher Tier • 70 marks • 16.7 % of GCSE
<p>Questions</p> <p>Multiple choice, structured, closed short answer, and open response.</p>

Triple-Course structure

The same topics are covered as in Trilogy but some areas are covered in more detail.

Biology

Cell biology, Organisation, Infection and response, Bioenergetics, Homeostasis and response, Inheritance, variation and evolution, Ecology, Key ideas.

Paper 1	+	Paper 2
<p>What's assessed</p> <p>Topics 1–4: Cell biology; Organisation; Infection and response; and Bioenergetics.</p>		<p>What's assessed</p> <p>Topics 5–7: Homeostasis and response; Inheritance, variation and evolution; and Ecology.</p>
<p>How it's assessed</p> <ul style="list-style-type: none"> • Written exam: 1 hour 45 minutes • Foundation and Higher Tier • 100 marks • 50 % of GCSE 		<p>How it's assessed</p> <ul style="list-style-type: none"> • Written exam: 1 hour 45 minutes • Foundation and Higher Tier • 100 marks • 50 % of GCSE
<p>Questions</p> <p>Multiple choice, structured, closed short answer and open response.</p>		<p>Questions</p> <p>Multiple choice, structured, closed short answer and open response.</p>



Chemistry

Atomic structure and the periodic table, Bonding, structure, and the properties of matter, Quantitative chemistry, Chemical changes, Energy changes, The rate and extent of chemical change, Organic chemistry, Chemical analysis, Chemistry of the atmosphere, Using resources, Key ideas.

Paper 1:	+	Paper 2:
What's assessed Topics 1–5: Atomic structure and the periodic table; Bonding, structure, and the properties of matter; Quantitative chemistry, Chemical changes; and Energy changes.		What's assessed Topics 6–10: The rate and extent of chemical change; Organic chemistry; Chemical analysis, Chemistry of the atmosphere; and Using resources.
How it's assessed <ul style="list-style-type: none">• Written exam: 1 hour 45 minutes• Foundation and Higher Tier• 100 marks• 50 % of GCSE		How it's assessed <ul style="list-style-type: none">• Written exam: 1 hour 45 minutes• Foundation and Higher Tier• 100 marks• 50 % of GCSE
Questions Multiple choice, structured, closed short answer and open response.		Questions Multiple choice, structured, closed short answer and open response.

Physics

Energy, Electricity, Particle model of matter, Atomic structure, Forces, Waves, Magnetism and electromagnetism, Key ideas.

Paper 1:	+	Paper 2:
What's assessed Topics 1–4: Energy; Electricity; Particle model of matter; and Atomic structure.		What's assessed Topics 5–8: Forces; Waves; Magnetism and electromagnetism; and Space physics. Questions in Paper 2 may draw on an understanding of energy changes and transfers due to heating, mechanical and electrical work and the concept of energy conservation from Energy and Electricity .
How it's assessed <ul style="list-style-type: none">• Written exam: 1 hour 45 minutes• Foundation and Higher Tier• 100 marks• 50 % of GCSE		How it's assessed <ul style="list-style-type: none">• Written exam: 1 hour 45 minutes• Foundation and Higher Tier• 100 marks• 50 % of GCSE
Questions Multiple choice, structured, closed short answer and open response.		Questions Multiple choice, structured, closed short answer and open response.