

GCSE Combined Science: Trilogy Course code: AQA 8464

Aims:

- To teach students a love of science through a variety of engaging, creative and motivational lessons by teaching both project based learning and stand-alone science lessons, providing opportunities for a hands on application of knowledge and skills.
- To use big ideas and mastery goals to equip all of the students for the future, providing students with the ability to connect concepts, ensuring that they can see the world analytically, explain phenomena and make predications
- To ensure that all students will gain the knowledge and practical skills to obtain appropriate GCSE grades, enabling them to become successful in science beyond GCSE.

Content:

In Year 10 and 11 students will have 5 regular science lessons per week. Our curriculum is based on the AQA KS4 Combined Science: Trilogy Curriculum. In both years, we re-explore and develop a range of modules that students have been introduced to in year 7, 8 and 9, splitting these into the distinct disciplines of Biology, Chemistry and Physics. Students will be given the opportunity to explore their ideas and questions, follow the evidence from results and question everything. Students are taught using a variety of theoretical and practical based learning.

Curriculum Map

Year	Curriculum Overview	Assessment
Year 10	Students will study a range of Biology, Chemistry and Physical modules including Organisation, Infection and Response, Bioenergetics, Quantitative Chemistry, Chemical Changes, Electricity and Atomic Structure	recall and creative extended learning
Year 11	Students will study a range of Biology, Chemistry and Physical modules including Inheritance, Variation and Ecology, Chemistry of the Atmosphere and Using Resources, Waves and Magnetism	9

Assessment:

This qualification is linear, meaning that all students will sit all their exams at the end of the course. There are six papers: two Biology, two Chemistry and two Physics. Each paper will assess knowledge and understanding from distinct topic areas. Each paper is 1 hour and 15 minutes in length, consists of 70- marks and has a range of multiple choice, structured, closed short answer and open response questions. Each paper accounts for 16.7% of the GCSE. Students will achieve 2 GCSE Grades.

- Biology topics 1–4: Cell Biology; Organisation; Infection and response; and Bioenergetics.
- Biology topics 5–7: Homeostasis and response; Inheritance, variation and evolution; and Ecology.



- Chemistry topics 8–12: Atomic structure and the periodic table; Bonding, structure, and the properties of matter; Quantitative chemistry; Chemical changes; and Energy changes.
- Chemistry topics 13–17: The rate and extent of chemical change; Organic chemistry; Chemical analysis; Chemistry of the atmosphere; and Using resources.
- Physics topics 18–21: Energy; Electricity; Particle model of matter; and Atomic structure
- Physics topics 22–24: Forces; Waves; and Magnetism and electromagnetism

There is also a practical aspect to the course with the practical assessment being designed to support and consolidate scientific concepts, develop investigative skills and build and master practical skills. Questions in the written exams will draw on the knowledge and understanding students have gained by carrying out the practical activities. These questions will count for at least 15% of the overall marks for the qualification.

Extended Learning:

Extended learning in science takes the form of Mode A extended learning, where the extended learning focusses on knowledge recall and Mode B, where the students are invited to express themselves creatively in order to succeed. There will also be opportunity for students to engage with science outside of the classroom through the enhanced curriculum provided at John Taylor Free School. This includes the STEAM club (Science Technology, Engineering, Arts and Maths) and attending science educational visits.

Connection to the JTFS Approach

Whole School Theme How does Science support this?		
	How does Science support this?	
STRIPE	STRIPE habits are used constantly within science; team player during	
	experimental teamwork and the reflective and resilient strand where students	
	are encouraged to reflect and refine their methodology. Students are also	
	constantly encouraged to be innovative when designing investigations.	
STEAM	As science is one of the key strands of STEAM, we focus on many opportunities	
	for students to connect their learning to other subjects. We also focus on job	
	opportunities and possibilities that exist for students beyond GCSE	
Literacy	Students are encouraged to write like a scientist. This includes learning many	
	new science specific words and using them appropriately within their work. This	
	is particularly relevant when recording the required practical element of the	
	course and for achieving high marks in open response questions.	
Numeracy	Students are encouraged throughout this module to relate the content that	
	they study to the skills they have learnt in maths. Modules in physics encourage	
	students to re-arrange equations, convert figures and perform complex	
	calculations.	
SMSC, British Values and	Students will investigate fuels for the future and methods to reduce the impact	
Citizenship	of climate change. They are encouraged to build respect for others in the	
G.6.26.131.11p	community with lessons around cloning and contraception. Students	
	, i	
	considering how scientific perceptions can alter due to the development of new	
	technologies. Students will consider local issues that develop British values, such	
	as light pollution in Astronomy or Recycling	