

Science Department KS4

Vision & Intent

The Science Department, in line with Eastlea Community School's core values, is committed to ensuring that all our students make greater than expected progress across all Key Stages in the subject of Science. Our Science curriculum has been designed to be rigorous, fun as well as challenging with the aim of developing students who are skilled critical thinkers, problem solvers, innovators and team players, as these are sought after desirable and transferable skills which would empower our students to excel beyond Eastlea.

Teaching and Learning at Key Stage 4:

The curriculum we offer at key stage 4 (year 10-11) is broad and balanced and provides a useful platform to enable our students to progress to further academic studies at A level or to follow a vocational, work-related pathway.

The journey towards becoming a successful life-long learner starts at an earlier age, but key stage 4 is extremely pivotal in determining the options/pathways available to students later in life. Many of the highly competitive universities and employers look at achievement at GCSE in determining which applicants to admit to their courses or work place. Most of our students do very well at A Levels and proceed further to the best Universities (Russel group and Oxbridge) to study Science.

Combined science students follow the AQA Combined Science: Trilogy GCSE (9 - 1). Details of this specification can be found at:

<http://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464>

Separate science students follow GCSE AQA Biology, Chemistry and Physics. Details of these specifications can be found at:

<http://www.aqa.org.uk/subjects/science/gcse/biology-8461>

<http://www.aqa.org.uk/subjects/science/gcse/chemistry-8462>

<http://www.aqa.org.uk/subjects/science/gcse/physics-8463>

Resources:

- **CGP New grade (9-1) GCSE Science:**
- **AQA Revision Guide**
- **Kerboodle AQA GCSE (9-1) Science: Biology, Chemistry and Physics**
- **The Origin of Species by Charles Darwin**
- **YouTube:** https://www.youtube.com/channel/UCqbOeHaAUXw9II7sBVG3_bw/playlistsort=dd&view=50&shelf_id=16
- www.bbc.co.uk/bitesize/gcse/science
- <https://www.newscientist.com/>
- <https://www.mygcse.com>
- <https://www.seneca.com>

Year 10

Science	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic/Focus	AQA Combined Science Trilogy Chemistry 2 - C7 Energy Changes, C8 Rates and Equilibrium, C9 Crude Oil and Fuels	AQA Combined Science Trilogy Physics 1 - P7 Radioactivity Physics 2 - P8 Forces in Balance, P9 Motion	AQA Combined Science Trilogy Biology 1 - B7 Non-Communicable Diseases, B8 Photosynthesis, B9 Respiration	AQA Combined Science Trilogy Chemistry 2 - C10 Organic Reactions (Triple), C11 Polymers (Triple), C12 Chemical Analysis	AQA Combined Science Trilogy Physics 2 - P10 Force and Motion, P11 Force and Pressure (Triple), P12 Wave Properties	AQA Combined Science Trilogy Biology 2 - B10 The Human Nervous System, B11 Hormonal Coordination, B12 Homeostasis in Action (Triple)
Resources	AQA Trilogy Science textbooks, Achieve in Science PPTs, additional PPTs, worksheets, practical equipment, modelling, practical demonstrations					
Assessment	End of topic tests, Exam question practise, Extended writing End of Autumn 1 Assessment (19th October 2020) End of Autumn 2 Assessment (07th December 2020) End of Spring 1 Assessment (08th February 2020) End of Spring 2 Assessment (22nd March 2020) End of Summer 1 Assessment (17th May 2020)					

	End of Summer 2 Assessment (28th May 2020)
Extended Learning Opportunities	After school clubs, STEM Trips, STEM careers
Working Scientifically	<p>At GCSE level we have included all the parts of what good science is; which include investigations, observations, experimentation and/or testing out ideas and thinking about them.</p> <p>All these will involve talking about reading and writing about science plus the actual doing, as well as representing Science in its many forms both mathematically and visually through models.</p> <p>Students will be encouraged to develop their knowledge and understanding in science through opportunities for working scientifically. Working scientifically is the sum of all the activities that scientists do.</p> <p>At GCSE working scientifically is woven into our medium term plans and schemes of work to support students to be engaged and enthused. Resources and activities will be provided to support Scientific thinking through the use of Scientific vocabulary in explanations, applications and evaluations.</p>

Year 11

Science	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic/Focus	AQA Physics Trilogy P13 Electromagnetic Waves, P14 Light P15 Electromagnetism	AQA Biology Trilogy B13 Reproduction, B14 Variation and Evolution, B15 Genetics and Evolution	AQA Chemistry Trilogy C13 The Earth's atmosphere, C14 The Earth's resources, C15 Using our resources	AQA Physics and Biology (Trilogy) P16 Electromagnetism, B16 Adaptation, Interdependence & Competition, B17 Organising an Ecosystem	AQA Biology, Chemistry and Physics(Trilogy) B18 Biodiversity and Ecosystems Revision Revision	AQA Biology, Chemistry Physics Trilogy Revision Revision Revision
Resources	AQA Physics Textbook, Achieve Science portal, AQA Kerboodle online portal, BBC Bitesize Revision Guide mygcscience.co.uk, free science video, Doodlelearn.co.uk, Senaca.co.uk					
Assessment	End of Topic Test, Online Quizzes, Exam question practice, Extended writing End of Autumn 1 Assessment (19th October 2020) End of Autumn 2 Assessment (07th December 2020) End of Spring 1 Assessment (08th February 2020) End of Spring 2 Assessment (22nd March 2020)					

	<p>End of Summer 1 AssessmentAssessment (17th May 2020</p> <p>End of Summer 2 AssessmentAssessment (28th May 2020)</p>
Extended Learning Opportunities	STEM Trips, Project based learning, Debates, Workshops
Working Scientifically	<p>At GCSE level we have included all the parts of what good science is; which include investigations, observations, experimentation and/or testing out ideas and thinking about them.</p> <p>All these will involve talking about reading and writing about science plus the actual doing, as well as representing Science in its many forms both mathematically and visually through models.</p> <p>Students will be encouraged to develop their knowledge and understanding in science through opportunities for working scientifically. Working scientifically is the sum of all the activities that scientists do.</p> <p>At GCSE working scientifically is woven into our medium term plans and schemes of work to support students to be engaged and enthused. Resources and activities will be provided to support Scientific thinking through the use of Scientific vocabulary in explanations, applications and evaluations.</p>