

Royal Greenwich Trust School

Science Curriculum Booklet

Our Vision and Approach in Science

Our science curriculum provides a structured learning journey that builds knowledge and skills in biology, chemistry, and physics, aiming to develop scientific inquiry, critical thinking, and a deep understanding of the natural world and its impacts on our lives. It emphasizes "working scientifically" through hands-on investigations, data analysis, and questioning, progressing from basic concepts to more complex topics in a logical sequence.

We aspire for students to become curious investigators through the study of Science. Through exploring the world of scientific research and experimentation, we hope that students gain a deeper understanding of the world around them.

We plan and implement the Science curriculum across Key Stages 3 -5 in ways that challenge and inspire our students, whilst allowing responsive learning to take place. At all Key Stages we teach the substantive and disciplinary knowledge needed to give students a powerful and rich knowledge that allows them to interpret the word scientifically.

Our curriculum is divided into 3 main disciplines: Biology, Chemistry and Physics. We follow a spiral curriculum where content is taught and revisited through opportunities for interleaving.

Our KS3 curriculum is under review and we are building in several opportunities for inquiry based learning, developing curiosity, promoting critical thinking skills and building future readiness. Our specification is aligned to the National Curriculum and equips students with the skills needed to begin their journey at KS4.

Our specifications for Key Stage 4 and 5 are:

Key Stage 4

- AQA Combined Science (Trilogy) is followed from January of Year 9 with the option to study the triple sciences as separate subjects from Year 10. Combined Science is taught across 5 lessons of 55 minutes and Triple Science is taught with an addition of further 4 lessons of 55 minutes a week.

https://filestore.aqa.org.uk/resources/science/specifications/AQA-8464-SP-2016.PDF

- AQA GCSE Biology https://filestore.aqa.org.uk/resources/biology/specifications/AQA-8461-SP-2016.PDF
- AQA GCSE Chemistry https://filestore.aqa.org.uk/resources/chemistry/specifications/AQA-8462-SP-2016.PDF
- AQA GCSE Physics https://filestore.aqa.org.uk/resources/physics/specifications/AQA-8463-SP-2016.PDF

What students learn

Our curriculum is sequenced to cover a series of topics across the academic year to give students a full experience of all three sciences. The breakdown of topics covered across the year groups is detailed in the grid below. Please note this is subject to change as we adapt our curriculum to meet the needs of our students.

Term	Year 7	Year 8	Year 9	Year 10 (Combined Trilogy)	Year 10 Biology (Triple)	Year 10 Chemistry (Triple)	Year 10 Physics (Triple)
Term 1	Becoming a Scientist (introduction to secondary Science) Cells and Movement	Scientific Investigation Breathing Digestion	Forces Electromagnetism	B2 Organisation C2 Bonding, Structure and Properties of Matter	B2 Organisation	C2 – Bonding, Structure and properties of matter	P2 – Electricity P3 – Particle Model of Matter
Term 2	Matter Sound and Waves Acids and Alkalis	Contact forces and Pressure Electromagnets	The Earth's atmosphere and resources	P2 Electricity C3 – Quantitative Chemistry	B3 Infection and Response	C2 – Bonding, Structure and properties of matter	P3 – Particle Model of Matter
Term 3	Variation and Reproduction	Matter Periodic table	Disease and bioenergetics Preventing and treating disease	P3 Particle Model of Matter B3 Infection and Response	B3 Infection and Response	C3 – Quantitative Chemistry	P4 – Atomic Structure (Radiation)

Term 4	Variation and Reproduction Forces	Work Heating and cooling	Waves effects Wave properties	B3 Infection and Response P4 – Atomic Structure	B4 Bioenergetics (Photosynthesis and Response)	C4 – Chemical Changes	P5 – Forces
Term 5	Earth and the Universe Metals and Non-Metals	Climate Earth resources Types of reactions Chemical energy	Genetics and evolution	B4 Bioenergetics (Photosynthesis and Respiration)	B5 – Homeostasis and Response	C5 – Energy Changes	P5 – Forces
Term 6	Metals and Non-Metals Ecosystems Energy	Respiration Photosynthesis Evolution Inheritance	Atomic structure Periodic table Structure and bonding	C4 – Chemical Changes Consolidation	Consolidation	Consolidation	P5 – Forces Consolidation

Term	Year 11 Combined Science	Year 11 Triple Physics	Year 11 Triple Chemistry	Year 11 Triple Biology
Term 1	C5 – Energy changes B5 – Homeostasis and response P5 - Forces	P5 - Forces	C6 – The rate and extent of chemical change	B5 – Homeostasis and Response
Term 2	C6 – The rate and extent of chemical change B6 - Inheritance, variation and evolution P6 - Waves	P6 – Waves P7- Magnetism and electromagnetism	C7 – Organic Chemistry C8- Chemical analysis	B6 - Inheritance, variation and evolution
Term 3	C7 - Organic chemistry C8- Chemical analysis P7- Magnetism and electromagnetism	P8 - Space	C9 - Chemistry of the atmosphere C10 -Using resources recap	B7 – Ecology
Term 4	B7 – Ecology C9 - Chemistry of the atmosphere C10 -Using resources recap	Consolidation Revision	Consolidation Revision	Consolidation Revision
Term 5	Consolidation Revision	Consolidation Revision	Consolidation Revision	Consolidation Revision
Term 6	Consolidation Revision	Consolidation Revision	Consolidation Revision	Consolidation Revision

How you can support your child's learning in science

Ensure your child:

- completes his/her 1-hour science homework every week which will be given online (Satchel 1) or as a worksheet handed in lesson;
- practises science exam questions (GCSE exam questions or KS3 exam questions) from past exam papers;
- completes all targets written in their class book by the teacher (written in green pen) and is answered by the student in red pen;
- reads around the subject and practises exam questions for an additional 3- 5 hours a week (KS4 and KS5 students) as additional work is required to supplement the homework given. Please see websites below for past science exam papers.

Websites that you can visit for KS3 students:

- https://www.bbc.co.uk/bitesize/subjects/zng4d2p

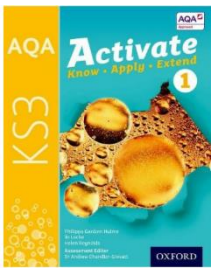
Websites that you can visit for KS4 students:

- https://revisionscience.com/gcse-revision/science/science-gcse-past-papers/aqa-gcse-science-past-papers
- http://www.bbc.co.uk/schools/gcsebitesize/science/
- http://www.my-gcsescience.com/
- https://www.youtube.com/channel/UCqbOeHaAUXw9Il7sBVG3_bw
- https://www.primrosekitten.com/products/gcse-revision-pack
- https://www.youtube.com/channel/UCBgvmal8AR4QIK2e0EfJwaA
- http://www.s-cool.co.uk/

Websites that you can visit for KS5 Students:

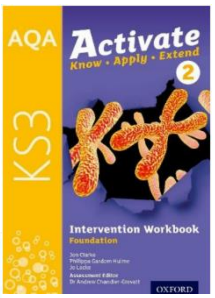
- https://www.creative-chemistry.org.uk/
- http://www.titrations.info/acid-base-titration
- http://www.rsc.org/learn-chemistry/resource
- http://www.sparknotes.com/chemistry/acidsbases/titrations/section1.rhtml
- http://www.virtlab.com/main.aspx
- http://www.docbrown.info/index.htm
- http://gradegorilla.com/UKschools.php

Books that you may wish to purchase:

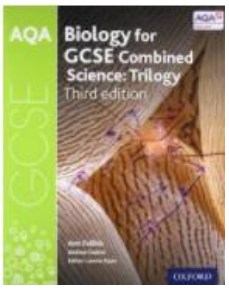


Activate 1 book KS3 AQA (Oxford University Press) – Year 7,8 and 9

Activate 2 book KS3 AQA (Oxford University Press) – Year 7,8 and 9



Any AQA GCSE combined trilogy science books for year's 9 to 10 and 11.



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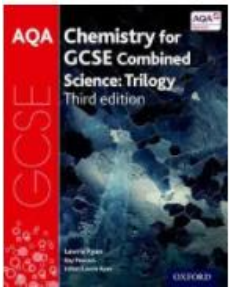

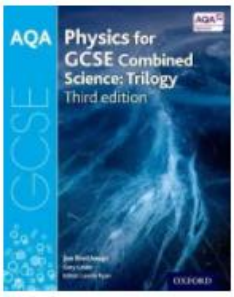

separate AQA GSCE biology, chemistry and physics science book for year 10 and 11 studying triple science only.

