BBG Academy Curriculum 2025-2026 – Science

This document contains details of how the subject is sequenced over the years of delivery. Included are assessment points and the prior learning that will be included in these assessments. It also includes where topics are revisited to maximise student retrieval and retention. Along with curriculum content, opportunities to develop links with careers are also identified in order to bring the relevance of the curriculum into the wider life context.

Curriculum Intent Statement

The purpose of our Key Stage 3 scheme is to provide robust foundations to allow students to develop into analytical, methodical, and innately inquisitive scientists. Students are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. The three disciplines are split into topics which are introduced in Year 7 and built upon in Year 8 and 9. Teaching is focused on the scientific method and students are given opportunities within lessons to build the necessary skills to suggest a hypothesis, collate valid data and make logical conclusions, using knowledge shared with them. Students are assessed on their mastery of knowledge and the application of this knowledge in both 'real world' and investigative science. Good habits are reinforced at every possible opportunity: scientific language is used, math's skills are modelled, recall of key knowledge is reinforced and students are given opportunities to both ask and answer questions using experimental approaches.

Teaching science in key stage 4 continues to build upon and deepen the knowledge, understanding and scientific skills developed in the earlier key stage. In Biology, the topics covered seek to understand living organisms and life. It considers the complex systems involving interactions between genes, the environment and random chance. Physics builds its explanations on measurable quantities that can be put into numerical relationships. Chemistry draws heavily on the use of models and modelling to explain the behaviour of matter and routinely involves the synthesis of the objects it studies. Pupils continue to work scientifically and think like a scientist through a broad, coherent and practical based curriculum that will challenge and inspire students.

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Pupils complete either GCSE Combined Science or separate sciences (GCSEs in Biology, Chemistry and Physics).

GCSE Combined Science AQA 8464

Biology Paper 1

Overview	Focus
Written exam: 1 hour 15 minutes Foundation and Higher Tier 70 marks	• Topic 1 – Cell Biology • Topic 2 – Organisation • Topic 3 – Infection and Response • Topic 4 – Bioenergetics A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

Biology Paper 2

Overview	Focus
Written exam: 1 hour 15 minutes Foundation and Higher Tier 70 marks	• Topic 5 – Homeostasis and response • Topic 6 – Inheritance, variation and evolution • Topic 7 –Ecology A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-

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response questions.
Calculators may be used in the examination.

Chemistry Paper 1

Overview	Focus
Written exam: 1 hour 15 minutes Foundation and Higher Tier 70 marks	• Topic 1 –Atomic Structure and the periodic table • Topic 2 – Bonding, structure, and the properties of matter • Topic 3 – Quantitative chemistry • Topic 4 – Chemical changes • Topic 5 – Energy changes A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

Chemistry Paper 2

Overview	Focus
Written exam: 1 hour 15 minutes Foundation and Higher Tier 70 marks	• Topic 6 –the rate and extent of chemical change • Topic 7 – Organic chemistry • Topic 8 – Chemical Analysis • Topic 9 – Chemistry of the atmosphere • Topic 10 – Using resources

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	A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

Physics Paper 1

Overview	Focus
Written exam: 1 hour 15 minutes Foundation and Higher Tier 70 marks	• Topic 1 – Energy • Topic 2 – Electricity • Topic 3 – Particle model of matter • Topic 4 – Atomic Structure A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

Physics Paper 2

Overview	Focus
Written exam: 1 hour 15 minutes Foundation and Higher Tier 70 marks	• Topic 5 –Forces • Topic 6 –Waves • Topic 7 – Magnetism and electromagnetism

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	A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

GCSE Separate Science 8461,8462,8463

Biology Paper 1

Overview	Focus
Written exam: 1 hour 45 minutes Foundation and Higher Tier 100 marks	• Topic 1 – Cell Biology • Topic 2 – Organisation • Topic 3 – Infection and Response • Topic 4 – Bioenergetics A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

Biology Paper 2

Overview	Focus

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Written exam: 1 hour 45 minutes Foundation and Higher Tier 100 marks	• Topic 5 – Homeostasis and response • Topic 6 – Inheritance, variation and evolution • Topic 7 – Ecology A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

Chemistry Paper 1

Overview	Focus
Written exam: 1 hour 45 minutes Foundation and Higher Tier 100 marks	• Topic 1 – Atomic Structure and the periodic table • Topic 2 – Bonding, structure, and the properties of matter • Topic 3 – Quantitative chemistry • Topic 4 – Chemical changes • Topic 5 – Energy changes A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination

Chemistry Paper 2

Overview	Focus

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Written exam: 1 hour 45 minutes Foundation and Higher Tier 100 marks	• Topic 6 – the rate and extent of chemical change • Topic 7 – Organic chemistry • Topic 8 – Chemical Analysis • Topic 9 – Chemistry of the atmosphere • Topic 10 – Using resources A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

Physics Paper 1

Overview	Focus
Written exam: 1 hour 45 minutes Foundation and Higher Tier 100 marks	• Topic 1 – Energy • Topic 2 – Electricity • Topic 3 – Particle model of matter • Topic 4 – Atomic Structure

Physics Paper 2

Overview	Focus
Written exam: 1 hour 45 minutes Foundation and Higher Tier 100 marks	• Topic 5 – Forces • Topic 6 – Waves • Topic 7 – Magnetism and electromagnetism

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A mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Calculators may be used in the examination.

KS4 Exam Board Specification (Combined Science): AQA Combined Science Trilogy (8464)

KS4 Exam Board Specification (Biology): AQA Biology (Separate Sciences) (8461)

KS4 Exam Board Specification (Chemistry): AQA Chemistry (Separate Sciences) (8462)

KS4 Exam Board Specification (Physics): AQA Physics (Separate Sciences) (8463)

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Year 10

Year 10 assessment dates

Assessment week 1 – 10-11-25

Assessment week 2 – 09-02-26

Term	Content	Sequencing	Assessment	Careers links & Experiences
Autumn 1	**Topic: Biology paper 1** **Cell Structure & Cell Division** **Transport in Cells** **Tissues, Organs and Organ Systems** **Health & Disease** **Enzymes & Digestion** **Infection & Response** **Working Scientifically**	**Previous topics built on in this topic: Cells, observing, specialised cells, cell transport, diffusion, levels of organisation, structure of the digestive system, digestive enzymes, food tests, absorption of nutrients, a balanced diet, diet deficiencies, obesity and malnutrition.**	**Consolidation/ Summative assessment:** **WRR - Cells & microscopy** **WRR - Osmosis in plant cells** **WRR - Food tests.**	Jobs that use Food and Nutrition - Careers - BBC Bitesize

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Autumn 2	**Topic: Biology paper 1 & Chemistry paper 1** **Infection and Response cont...** **Bioenergetics** **Atomic Structure & The Periodic Table** **Bonding, Structure & The Properties of Matter** **Working Scientifically**	**Previous topics built on in this topic:** **Breathing and gas exchange, effects of exercise, aerobic and anaerobic respiration, plant nutrition and photosynthesis.** **The particle model, atoms, elements, compounds, chemical formulae, chemical reactions and word equations, conservation of mass, periodic table and patterns in the periodic table.**	**Consolidation/ Summative assessment:** **WRR - Rate of photosynthesis** **Biology paper 1 (2024)** **WRR - Atomic Structure & Bonding**	All careers in health and science | National Careers Service
Spring 1	**Topic: Chemistry paper 1 & Physics 1** **Quantitative Chemistry** **Use of amount of substance in relation to masses of pure substances** **Chemical Changes** **Reactions of Acids**	**Previous topics built on in this topic:** **The particle model, atoms, elements, compounds, chemical formulae, chemical reactions, naming compounds and word**	**Consolidation/ Summative assessment: WRR - Electrolysis & Chemistry Paper 1**	Chemical engineer | Explore Careers | National Careers Service

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	Electrolysis **Energy Changes** **Working Scientifically**	**equations, conservation of mass. PH scale and indicators, acids and metals, neutralisation, acids and carbonates and exothermic and endothermic reactions.**		
Spring 2	**Topic: Physics Paper 1** **Energy** **Conservation & dissipation of energy** **National & Global Energy Resources** **Electricity** **Particle Model of Matter** **Atomic Structure** **Working Scientifically**	**Previous topics built on in this topic:** **Energy diagrams, energy stores and transfers, specific heat capacity of water, insulators and work done. Making series circuits, measuring current and voltage, fixing faulty circuits. The particle model and atoms.**	**Consolidation/ Summative assessment:** **WRR - Global Energy Resources** **WRR - Domestic Uses of Electricity/Safety**	Renewable energy engineer | Explore Careers | National Careers Service

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Summer 1	**Topic: Physics Paper 1 & Biology Paper 2** **Atomic Structure Cont...** **Homeostasis & Response** **Inheritance, Variation & Evolution** **Ecology** **Working Scientifically**	**Previous topics built on in this topic:** **The particle model and atoms.** **DNA structure, selective breeding and genetic engineering, conservation and maintaining biodiversity and classification.** **Habitat loss, deforestation, climate change and biodiversity. Adaptations, variation, competition and natural selection.**	**Consolidation/ Summative assessment:** **Physics Paper 1** **WRR - Nervous System** **WRR - Hormones of the Menstrual Cycle** **WRR - Ecology**	Ecologist | Explore Careers | National Careers Service

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Year 11

Year 11 assessment dates

Assessment week 1 – 06-10-25

Assessment week 2 – 12-01-26

Term	Content	Sequencing	Assessment	Careers links & Experiences
Autumn 1	**Topic: Biology Paper 2 & Chemistry Paper 2** **Forces** **Homeostasis & Response** **Organic Chemistry** **Working Scientifically**	**Previous topics built on in this topic:** **Balanced and unbalanced forces, contact and non-contact forces, calculating speed, distance-time graphs, comparing speeds, pressure and stretching springs.** **Cells, specialised cells, levels of organisation and blood.**	**Consolidation/ Summative assessment:** **Mock Exams – B1, C1 & P1.**	What jobs can I do with a chemistry qualification? | RSC Education Biologist | Explore Careers | National Careers Service

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Autumn 2	**Topic: Physics Paper 2 & Biology Paper 2** **Waves** **Inheritance, Variation & Evolution** **Magnetism & Electromagnetism** **Working Scientifically**	**Previous topics built on in this topic:** **Water waves, sound waves and light (colour and the spectrum, reflection and refraction).** **DNA structure, selective breeding and genetic engineering, conservation and maintaining biodiversity.** **Magnets, magnetic fields, electromagnets and using electromagnets.**	**Consolidation/ Summative assessment:** WRR - Waves WRR - DNA Structure & Function WRR – Selective Breeding and Genetic Engineering	Where physics could take you: Career paths | Institute of Physics
Spring 1	**Topic: Physics Paper 2 & Chemistry Paper 2** **Space (Triple)** **Chemical Analysis** **Working Scientifically**	**Previous topics built on in this topic:** **Atoms, elements and compounds. Testing**	**Consolidation/ Summative assessment:** **Mock Exams B2, C1 & P2 (based on content done**	Careers with the European Space Agency ESA - Careers at ESA

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		gases and separating techniques.	**to date – up to and including waves)**	
Spring 2	**Topic: Revision** **Chemistry of the Atmosphere** **Using Resources** **Working Scientifically**	**Previous topics built on in this topic:** **Atmosphere and carbon cycle, climate change and biodiversity and recycling.**	**Consolidation/ Summative assessment:** **WRR – Chemistry of the Atmosphere**	Climate scientist | Explore Careers | National Careers Service
Summer 1	**Topic: Revision for GCSE Examinations**			

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