

Key Stage 3 Curriculum Plan: **Science** 2023

Intent:

At Bishop Ullathorne Catholic School, our science department is committed to designing, delivering and re-evaluating an exceptional curriculum that nurtures curiosity, critical thinking, and a deep understanding of the natural world. Our intent is to empower students to become lifelong learners, skilled scientists, and informed global citizens. We aim to achieve this by:



1. **Building a Strong Foundation**

We ensure a comprehensive coverage of fundamental scientific principles, equipping students with a solid foundation to pursue advanced studies in science disciplines.

2. **Providing Real-World Context**

We emphasize the relevance of science in everyday life and global challenges. Our curriculum integrates real-world contexts, making connections between scientific concepts and their applications.

3. **Developing Scientific Literacy**

Our curriculum enhances students' scientific literacy, enabling them to critically evaluate information, make informed decisions, and engage in debates on scientific and ethical issues.

4. **Promoting Inquiry-Based Learning**

Our curriculum fosters a culture of inquiry, encouraging students to ask questions, explore hypotheses, and design experiments, thereby developing their scientific reasoning and problem-solving skills.

Year 7	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Working and thinking scientifically B1 - Cells C1 - Particles	P1 - Forces B2 - Structure and function of body systems	C2 - Elements, atoms and compounds P2 - Sound	B3 - Reproduction C3 - Reactions	P3 - Light C4 - Acids and Alkalis	P4 - Space
	Assessment:	Assessment: B1, C1 1 x 45 minute	Assessment: B1, B2, C1, P1 1 x 45 minute	Assessment:	Assessment: B1, B2, B3, C1, C2, P1, P2 1 x 45 minute	Assessment: End of Year Examination 1 x 45 minute
Year 8	Working and thinking scientifically B1 – Health and lifestyle	P1 – Electricity and magnetism	C2 – Separation techniques P2 - Energy	B4 – Inheritance C3 – Metals and other materials	P3 – Motion and pressure	C4 – The Earth

	C1 – The Periodic Table	B2 – Biological processes			B3 – Ecosystems and adaptation	
	Assessment:	Assessment: B1, C1 1 x 45 minute	Assessment: B1, B2, C1, P1 1 x 45 minute	Assessment:	Assessment: B1, B2, C1, C2, C3, P1, P2 1 x 45 minute	Assessment: End of Year Examination 1 x 45 minute
Year 9	B1a – Cell structure and division C1a – Atomic structure and the Periodic Table	P1 - Energy	B3 – Infection and response C1b – Separation techniques	C8 – Chemical analysis P3 – Particle model of matter	B7 - Ecology	B1b – Transport in cells
	Assessment	Assessment B1a, C1a 1 x 45 minute	Assessment B1a, C1a, P1 2 x 45 minute	Assessment	Assessment B1a, B3, C1, C8, P1, P3 2 x 45 minute	Assessment End of Year Examination 2 x 45 minute

Key Stage 4 Curriculum Plan: **Science** 2023

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Year 10	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	C2 - Bonding, structure, and the properties of matter	P2 – Electricity B2 – Organisation	C5 – Energy changes C6 – The rate and extent of chemical changes	B4 - Bioenergetics	C7 – Organic chemistry P4 – Atomic structure	C9 – Chemistry of the atmosphere C10 – Using resources
	Assessment:	Assessment: B1, B3, B7, C1, C2, C8, P1, P2, P3 2 x 45 minute (combined) 3 x 45 minute (triple)	Assessment:	Assessment: B1, B2, B3, B7, C1, C2, C5, C6, C8, P1, P2, P3 2 x 45 minute (combined) 3 x 45 minute (triple)	Assessment:	Assessment: End of Year Examination 3 x 1 hour (combined/triple)

Year 11	B5 – Homeostasis and responses	C3 – Quantitative chemistry C4 – Chemical changes	P5 - Forces	B6 – Inheritance, variation and evolution	P6 – Waves P7 – Magnetism P8 – Space (triple science only)	
	Assessment:	Assessment: Mock Examination 3 x 1 hour (combined) 3 x 1 hour 30 minutes (triple)	Assessment:	Assessment: Mock Examination 3 x 1 hour (combined) 3 x 1 hour 30 minutes (triple)	Assessment:	Assessment: GCSE Examination 6 x 1 hour 15 minutes (combined) 6 x 1 hour 45 minutes (triple)

	Induction Examination (independent study tasks) 1 x 1 hour 30 minutes	Internal Assessment (content covered to date) 2 x 1 hour 30 minutes	Mock Examination (content covered to date) 2 x 1 hour 30 minutes	Internal Assessment (content covered to date) 2 x 1 hour 30 minutes		AS Level Mock Examination 2 x 1 hour 30 minutes
Year 13	Respiration Energy in ecosystems detection of stimulus leading to a response Inheritance	Nutrient cycles Nervous coordination Populations Evolution and speciation Begin populations in ecosystems	Skeletal muscles as effectors Complete populations in ecosystems Altering sequence of DNA Begin controlling gene expression	Complete controlling gene expression Homeostasis	Using genome projects Gene technologies	
	Assessment:	Assessment: Internal Assessment (content covered to date) 2 x 1 hour 30 minutes	Assessment: Mock Examination (content covered to date) 3 x 2 hour	Assessment: Mock Examination (content covered to date) 3 x 2 hour	Assessment:	Assessment: A Level Examination 3 x 2 hour

Key Stage 5 Curriculum Plan: **Chemistry** 2023

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Year 12	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Atomic structure Amount of substance Bonding Introduction to organic chemistry Alkanes	Periodicity Group 2, the alkaline earth metals Group 7(17), the halogens Properties of Period 3 elements and their oxides Halogenoalkanes	Energetics Alkenes	Kinetics Alcohols	Chemical equilibria, Le Chatelier's principle and K _c Organic analysis	Oxidation, reduction and redox equations Acids and bases
	Assessment: Induction Examination (independent study tasks) 1 x 1 hour 30 minutes	Assessment: Internal Assessment (content covered to date) 2 x 1 hour 30 minutes	Assessment: Mock Examination (content covered to date) 2 x 1 hour 30 minutes	Assessment: Internal Assessment (content covered to date) 2 x 1 hour 30 minutes	Assessment:	Assessment: AS Level Mock Examination 2 x 1 hour 30 minutes
Year 13	Thermodynamics Optical isomerism Aldehydes and ketones Carboxylic acids and derivatives	Rate equations Aromatic chemistry	Equilibrium constant K _p for homogeneous systems Amines Polymers Amino acids, proteins and DNA	Electrode potentials and electrochemical cells Organic synthesis	Transition metals Reactions of ions in aqueous solution Nuclear magnetic resonance spectroscopy Chromatography	
	Assessment:	Assessment: Internal Assessment (content covered to date) 2 x 1 hour 30 minutes	Assessment: Mock Examination (content covered to date) 3 x 2 hour	Assessment: Mock Examination (content covered to date) 3 x 2 hour	Assessment:	Assessment: A Level Examination 3 x 2 hour

Key Stage 5 Curriculum Plan: **Physics** 2023

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	Particles and Radiation Matter and Radiation Quarks and Leptons Quantum Phenomena	Waves Waves Optics	Mechanics and Materials Forces in Equilibrium On the move Newton's Laws of Motion	Mechanics and Materials Force and Momentum Work, Energy and Power Materials	Electricity Electric Current DC Circuits	Further Mechanics and Thermal Physics Motion in a Circle
	Assessment: Induction Examination (independent study tasks)	Assessment: Internal Assessment (content covered to date)	Assessment: Mock Examination (content covered to date)	Assessment: Internal Assessment (content covered to date)	Assessment:	Assessment: AS Level Mock Examination 2 x 1 hour 30 minutes

	1 x 1 hour 30 minutes	2 x 1 hour 30 minutes	2 x 1 hour 30 minutes	2 x 1 hour 30 minutes		
Year 13	Further Mechanics and Thermal Physics Simple Harmonic Motion Thermal Physics Gases	Fields Gravitational Fields Electric Fields Capacitors Magnetic Fields	Fields Electromagnetic Induction	Nuclear Physics Radioactivity Nuclear Energy	Physics Option	
	Assessment:	Assessment: Internal Assessment (content covered to date) 2 x 1 hour 30 minutes	Assessment: Mock Examination (content covered to date) 3 x 2 hour	Assessment: Mock Examination (content covered to date) 3 x 2 hour	Assessment:	Assessment: A Level Examination 3 x 2 hour