

Year 11 Curriculum Overview [2026-2027]

Science – Separate Science

Autumn Term	Knowledge & Understanding			Literacy Skills Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
	Composites	Components [KEY concepts & subject specific vocab]	Formal Retrieval [if any]			
HT1	C6 Rates of Reaction	- Calculating rates of reactions - Factors which affect the rates of chemical reactions - Collision theory and activation energy - Catalysts - Reversible reactions - Energy changes and reversible reactions - Equilibrium - The effect of changing conditions on equilibrium - The effect of changing concentration - The effect of temperature changes on equilibrium - The effect of pressure changes on equilibrium	MCQ Formative assessment	- Keyword and definition - Subject language [Speak like a Scientist] - Inclusive questioning - Writing a method - Write like a Scientist - Comprehension/Extended reading - Extract key points from texts	Personal Skills - Teamwork - Problem solving - Practical applications Scientific Careers - Research scientist - Laboratory technician - Analytical Chemist	MCQ rates – 20 marks Formative Assessment – collision theory 6 marker Summative Assessment – triple foundation 52 marks, higher 55 marks

HT1/2	B5 Homeostasis and Response	• Homeostasis • The human nervous system • Human endocrine system • Control of blood glucose concentration • Hormones in human reproduction • Contraception • The use of hormones to treat infertility • Feedback systems	MCQ Formative Assessment	• Keyword and definition • Subject language [Speak like a Scientist] • Inclusive questioning • Writing a method • Write like a Scientist • Comprehension/Extended reading • Extract key points from texts	Personal Skills • Teamwork • Problem solving • Practical applications Scientific Careers • Midwife, • Gynaecologist • Data scientist • Dialysis nurse • Doctor • Diabetic specialist dietician • Embryologist • Fertility nurse • Health care assistant • Phlebotomist • Neurologist • Neuroscientist • Diabetes specialist nurse	MCQ Formative Assessment – diabetes 6 marker Summative Assessment triple foundation 34 marks, higher 38 marks

HT1/2	P5 Forces	• Scalar and vector quantities • Contact and non-contact forces • Gravity • Resultant forces • Work done and energy transfer • Moments, levers and gears • Pressure in a fluid • Atmospheric pressure • Forces and elasticity • Describing motion along a line - Distance and displacement • Speed • Velocity • The distance-time relationship • Acceleration • Newton's first law • Newton's second law • Newton's third law • Stopping distance • Reaction time • Factors affecting braking distance • Momentum as a property of moving objects • Conservation of momentum	MCQ Formative Assessment	• Keyword and definition • Subject language [Speak like a Scientist] • Inclusive questioning • Writing a method • Write like a Scientist • Comprehension/Extended reading • Extract key points from texts	Personal Skills • Teamwork • Problem solving • Practical applications Scientific Careers • Pilot • Pro cyclists • Aerospace engineer • race car drivers • Gymnast • Engineer – wind tunnel testing	MCQ forces 11 marks Formative Assessment Summative Assessment triple Foundation 39 marks, higher 39 marks
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		Changes in momentum				
HT2	C7 Organic Chemistry	- Crude oil, hydrocarbons and alkanes - Fractional distillation and petrochemicals - Properties of hydrocarbons - Cracking and alkenes - Structure and formula of alkenes - Reactions of alkenes - Alcohols - Carboxylic acids - Addition polymerisation - Condensation polymerisation - Amino acids - DNA and other naturally occurring polymers	MCQ Formative Assessment	- Keyword and definition - Subject language [Speak like a Scientist] - Inclusive questioning - Writing a method - Write like a Scientist - Comprehension/Extended reading - Extract key points from texts	Personal Skills - Teamwork - Problem solving - Practical applications Scientific Careers - Fine fragrance evaluator - Flavour chemist - Medicinal chemist - R&D Chemist	MCQ Formative Assessment – fractional distillation 6 marks Summative Assessment – triple foundation 40, higher 40

HT2	C8 Chemical Analysis	• Pure substances • Formulations • Chromatography • Test for hydrogen • Test for oxygen • Test for carbon dioxide • Test for chlorine • Flame tests • Metal hydroxides • Carbonates • Halides • Sulfates • Instrumental methods • Flame emission spectroscopy	MCQ Formative Assessment	• Keyword and definition • Subject language [Speak like a Scientist] • Inclusive questioning • Writing a method • Write like a Scientist • Comprehension/Extended reading • Extract key points from texts	Personal Skills • Teamwork • Problem solving • Practical applications Scientific Careers • Computational toxicologist • Soil scientist • Bioanalytical scientist • Process chemist • Pollution control officer • Astrochemist • Forensic scientist • Sports scientist	MCQ Formative Assessment – chromatography 8 marks Summative Assessment – triple foundation 40, higher 34
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HT3/4	B6 Inheritance, variation and evolution	- Sexual and asexual reproduction - Meiosis - Advantages and disadvantages of sexual and asexual reproduction - DNA and the genome - DNA Structure - Genetic Inheritance - Inherited disorders - Sex determination - Variation - Evolution - Selective breeding - Genetic engineering - Cloning - Theory of evolution - Speciation - The understanding of genetics - Evidence for evolution - Fossils - Extinction - Resistant bacteria - Classification of living organisms	MCQ Formative Assessment	- Keyword and definition - Subject language [Speak like a Scientist] - Inclusive questioning - Writing a method - Write like a Scientist - Comprehension/Extended reading - Extract key points from texts	Personal Skills - Teamwork - Problem solving - Practical applications Scientific Careers - Medical research - Genetics counselling - Farming - Genetic research - Managerial roles – problem solving and sequencing - Food production	MCQ Formative Assessment – Genetic Engineering 6 marks Summative Assessment – triple foundation 33 marks, Higher 34 marks
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HT 3	P6 Waves	• Transverse and longitudinal waves • Properties of waves • Reflection of waves • Sound waves • Waves for detection and exploration • Types of electromagnetic waves • Properties of electromagnetic waves • Uses and applications of electromagnetic waves • Lenses • Visible Light • Emission and absorption of infrared radiation • Perfect black bodies and radiation	MCQ Formative Assessment MOCK's Summative Paper 1's for Biology, Chemistry and Physics	• Keyword and definition • Subject language [Speak like a Scientist] • Inclusive questioning • Writing a method • Write like a Scientist • Comprehension/Extended reading • Extract key points from texts	Personal Skills • Teamwork • Problem solving • Practical applications Scientific Careers • Ophthalmologist • Lighting technician • Audiologist • Architecture • Sound engineer • Decorator	MCQ Formative Assessment – Wave speed RP 6 marks Summative Assessment – triple foundation 41 marks, higher 40 MOCKS on Paper 1's out of 70 marks each

HT3/4	C9 Chemistry of the atmosphere	• The proportions of different gases in the atmosphere • The Earth's early atmosphere • How oxygen increased • How carbon dioxide decreased • Greenhouse gases • Human activities which contribute to an increase in greenhouse gases in the atmosphere • Global climate change • The carbon footprint and its reduction • Atmospheric pollutants from fuels • Properties and effects of atmospheric pollutants	MCQ Formative Assessment	• Keyword and definition • Subject language [Speak like a Scientist] • Inclusive questioning • Writing a method • Write like a Scientist • Comprehension/Extended reading • Extract key points from texts	Personal Skills • Teamwork • Problem solving • Practical applications Scientific Careers • Astrochemist • Atmospheric chemist • Solar technology engineer • Marine biogeochemist	MCQ Formative Assessment – global warming 6 marks Summative Assessment – triple foundation 40 marks, higher 39 marks

HT5	B7 Ecology	• Communities • Abiotic factors • Biotic factors • Adaptations • Levels of organisation • How materials are cycled • Decomposition • Impact of environmental change • Biodiversity • Waste management • Land use • Deforestation • Global Warming • Maintaining biodiversity • Trophic levels • Pyramids of biomass • Transfer of biomass • Factors affecting food security • Farming techniques • Sustainable fisheries • Role of biotechnology	MCQ Formative Assessment	• Keyword and definition • Subject language [Speak like a Scientist] • Inclusive questioning • Writing a method • Write like a Scientist • Comprehension/Extended reading • Extract key points from texts	Personal Skills • Teamwork • Problem solving • Practical applications Scientific Careers • Ecologist • Conservationist • Microbiologist • Zoologist • Hydrologist • Horticulturalist • Water treatment engineer / scientist • Geologist • Environmental engineer • Environmental manager	MCQ Formative Assessment Summative Assessment - trilogy foundation 38 marks, higher 41

HT4	P7 Electromagnetism	• Poles of a magnet • Magnetic fields • Electromagnetism • Fleming's left-hand rule • Electric motors • Loudspeakers • Induced potential • Uses of the generator effect • Microphones • Transformers	MCQ Formative Assessment	• Keyword and definition • Subject language [Speak like a Scientist] • Inclusive questioning • Writing a method • Write like a Scientist • Comprehension/Extended reading • Extract key points from texts	Personal Skills • Teamwork • Problem solving • Practical applications Scientific Careers • Electric car design • Magnet design • Recycling Centre sorting • National grid	MCQ Formative Assessment Summative Assessment - triple foundation 38 marks, higher 41
HT5	C10 Using Resources	• Using the earth's resources and sustainable development • Potable water • Waste water treatment • Alternative methods of extracting metals • Life cycle assessment • Ways of reducing the use of resources • Corrosion and its prevention • Alloys as useful materials • Ceramics, polymers and composites • The Haber Process	MCQ Formative Assessment MOCK's Summative Paper 1's for Biology, Chemistry and Physics	• Keyword and definition • Subject language [Speak like a Scientist] • Inclusive questioning • Writing a method • Write like a Scientist • Comprehension/Extended reading • Extract key points from texts	Personal Skills • Teamwork • Problem solving • Practical applications Scientific Careers • Analytical chemist • Bioleaching lab technician • R&D chemist • Science communicator • Water treatment engineer / scientist	MCQ Formative Assessment – life cycle assessments 6 marks Summative Assessment – triple foundation 40 marks, higher 40 MOCKS Summative Assessments Paper 2 Biology Chemistry and

		Production and use of NPK fertilisers				Physics each out of 70 marks
HT5	P8 Space Physics (Physics only)	- Our solar system - The life cycle of a star - Orbital motion, natural and artificial satellites - Red-shift	MCQ Formative Assessment	- Keyword and definition - Subject language [Speak like a Scientist] - Inclusive questioning - Writing a method - Write like a Scientist - Comprehension/Extended reading - Extract key points from texts	Personal Skills - Teamwork - Problem solving - Practical applications Scientific Careers - Astronomer - Aerospace engineer - Teacher - Astronaut - Cosmologist	MCQ Formative Assessment Summative Assessment – triple foundation 40 marks, higher 40
Revision of all units in preparation for examinations						