

Year 11 – GCSE SCIENCE Programme of Study

Term	Autumn		Spring		Summer	
Biology	GCSE Inheritance, Variation & Evolution		GCSE Ecology		Half-term 1: Targeted Revision - GCSE Homeostasis & Response	
	Meiosis; DNA & the genome; inheritance & inherited diseases; evolution; classification; genetic engineering; sexual vs asexual reproduction (T); DNA structure & protein synthesis (T); cloning methods (T); Darwin, Wallace & evolution (T); speciation (T); Mendel & genetics (T)		The organisation of ecosystems; adaptations; interdependence & competition; biodiversity; decomposition (T); trophic levels & pyramids of biomass/energy (T), farming, fishing & food security (T), biotechnology (T) RP - Sampling RP - Decay (T)		Homeostasis; structure and function of the nervous system; the brain (T); the eye (T); control of body temperature (T); human endocrine system; control of blood glucose concentration; maintaining water and nitrogen balance in the body (T); hormones in human reproduction; contraception; use of hormones to treat infertility (H); negative feedback (H); plant hormones including tropism and uses of plant hormones (T). RP - Reaction time; RP - Germination (T)	
Assessment	Homeostasis End of Unit	Year 11 Paper 1 Mock Exams	Year 11 Paper 2 Mock Exams	Inheritance End of Unit Test	Ecology End of Unit Test	
Chemistry	GCSE Organic Chemistry		GCSE Chemical Analysis		GCSE Chemistry of Atmosphere	GCSE Using Resources
	Hydrocarbons; fractional distillation; cracking; alkenes; alcohols (T); carboxylic acids (T); polymerisation (addition & condensation) (T); natural polymers (DNA/starch/protein) (T)		Purity & formulations; chromatography; identification of common gases; identification of ions (T); instrumentation (T) RP - Chromatography RP - Identifying Ions		Atmosphere; greenhouse gases; global climate change; atmospheric pollutants; carbon footprint	Renewable & finite Resources; potable water; wastewater treatment; phytomining & bioleaching (H); corrosion (T); alloys, ceramics, polymers & composites (T); the Haber process (T); NPK fertilisers (T) RP - Potable Water
Assessment	Half-term 1: Energy Changes End of Unit Test	Year 11 Paper 1 Mock Exams	Year 11 Paper 2 Mock Exams	Half-term 2: Organic & Chemical Analysis End of Unit Tests	Half-term 1: Atmosphere End of Unit Test	
Physics	GCSE Forces Part 2	GCSE Waves		GCSE Magnetism & Electromagnetism		Half-term 1: GCSE Space Physics (Triple only) or Revision (Trilogy)
	Distance & displacement; speed + typical values; velocity + acceleration; motion graphs; uniform acceleration; Newton's laws; stopping distances + reaction time; momentum (H + T); changes in momentum (T). RP - Newton's Second Law	Transverse & longitudinal waves; properties of waves; calculating wave speed & period; reflection (T); refraction; sound waves (T); using waves for detection & exploration (T); the EM Spectrum; convex & concave lenses (T); visible light (T); black body radiation (T). RP - Speed of waves in a ripple tank & in a solid RP - Reflection & Refraction (T) RP - Infrared Radiation		Magnetic materials; permanent & induced magnets; drawing magnetic fields around bar magnets & a solenoid; electromagnets; right hand thumb rule; uses of electromagnets (T); the motor effect; Fleming's left hand rule (H + T); $F=BIL$ (H + T); motors (H + T); loudspeakers (T); induced potential (T); transformers & the National Grid (T); uses of the generator effect (T); microphones (T)		All Triple only: Our solar system; lifecycle of a star; the formation of new elements by fusion; orbital motion; red shift; the Big Bang theory; dark matter + dark energy.
Assessment	Forces End of Unit Test	Year 11 Paper 1 Mock Exams	Paper 2 Mock Exams	Waves End of Unit Test	Electromagnetism End of Unit Test	Triple Only: Space End of Unit

RP – Required Practical	T – Triple Content Only	H – Higher tier Only	Biology	Chemistry	Physics
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