SUBJECT:	Science	**YEAR GROUP:**	10–11 (Key Stage 4)
COURSE:	GCSE Combined Science: Trilogy (8464) / Separate Sciences (8461–63)	**EXAM BOARD:**	AQA
SUBJECT INTENT:	*Across Years 10 and 11 pupils study biology, chemistry and physics in parallel each half-term, deepening the understanding built at KS3 and in Year 9 while developing the working-scientifically and mathematical skills examined in all six papers. By the end of Year 11 all three sciences have covered the full content for Papers 1 and 2, followed by revision and mock examinations. Note: Contraception is taught in Year 10 for age-appropriate delivery.*		

TERM	TOPIC	CORE LEARNING	KEY CONCEPTS	SEQUENCING	SPECIFICATION LINK
Year 10 Autumn	**Biology — Organisation & Disease**	Ecology recap; the circulatory system and coronary heart disease; non-communicable disease, cancer and risk factors.	● heart / vessels ● risk factor ● correlation / causation	Builds on Year 9 and KS3 lifestyle; leads to Infection & Response.	B 2.2, 7.1–7.3
	Chemistry — Structure & Bonding + Organic	Ionic, covalent and metallic bonding; structure and properties; nanoparticles; hydrocarbons, crude oil, cracking and polymers.	● ionic / covalent / metallic ● giant / simple structures ● hydrocarbons	Builds on Year 9 Atomic Structure; leads to Chemical Changes.	C 2.1–2.4, 7.1–7.3
	Physics — Energy & Forces (Part 1)	Specific heat capacity, latent heat and Hooke's law; scalars, vectors and resultant forces; motion graphs and stopping distance.	● specific / latent heat ● Hooke's law ● resultant force	Builds on KS3/Year 9 Energy and Forces; leads to Forces Part 2.	P 1.1–1.3, 5.1–5.4
Year 10 Spring	**Biology — Cell Division & Communicable Disease**	Mitosis and meiosis; pathogens and the spread of disease; immunity, vaccination, antibiotics and drug development.	● mitosis / meiosis ● pathogen ● immunity / vaccination	Builds on KS3 Inheritance; underpins DNA and Inheritance in Year 11.	B 1.2, 3.1–3.3, 6.1
	Chemistry — Chemical & Energy Changes	Reactivity series and extraction of metals; reactions of acids, electrolysis and half-equations; exothermic and endothermic reactions; cells and fuel cells.	● reactivity series ● electrolysis ● exo / endothermic	Builds on Structure & Bonding; leads to Paper 1 and Rates.	C 4.1–4.5, 5.1–5.3
	Physics — Atomic Structure & Forces (Part 2)	The atom, radioactive decay, half-life and uses of radiation; momentum, Newton's laws, moments, levers and gears.	● radioactive decay ● half-life ● momentum / moments	Builds on Year 9 Atomic Structure and Forces Part 1; leads to Paper 1.	P 4.1–4.2, 5.5–5.8
Year 10 Summer	**Biology — Homeostasis & Classification**	The nervous and endocrine systems; blood glucose control and diabetes; hormones in reproduction, contraception and fertility; classification and evolutionary trees.	● neurone / reflex arc ● hormone / insulin ● classification	Builds on KS3 Reproduction; leads to Biology Paper 2.	B 5.1–5.3, 6.4
	Chemistry — Using Resources	Finite vs renewable resources; reuse and recycling; life cycle assessment; extraction and purification of copper; potable and waste water.	● finite / renewable ● life cycle assessment ● potable water	Builds on Chemical Changes; completed alongside Rates in Year 11.	C 10.1–10.2
Year 11 Autumn	**Biology — DNA & Inheritance**	DNA and the genome; genetic diagrams and Punnett squares; inherited disorders; genotype and phenotype.	● DNA / genome ● genetic diagram ● genotype / phenotype	Builds on mitosis/meiosis; leads to Evolution and Change.	B 6.1, 6.3
	Chemistry — Using Resources (completion) & Energy	Alloys, ceramics, polymers, glass and composites; corrosion and prevention; fertilisers; chemical cells and fuel cells.	● alloys / composites ● corrosion ● fuel cell	Completes Using Resources; the Haber process follows with Rates.	C 10.3–10.4, 5.4–5.5
	Physics — Waves	Transverse and longitudinal waves; wave speed, frequency and wavelength; reflection and refraction; the electromagnetic spectrum and its uses.	● transverse / longitudinal ● wave speed ● EM spectrum	Builds on KS3 Sound and Light; leads to Paper 1.	P 6.1–6.4
Year 11 Spring	**Biology — Evolution & Change**	Evidence for evolution; antibiotic-resistant bacteria; speciation and extinction; selective breeding and genetic engineering.	● evolution / selection ● speciation ● genetic engineering	Builds on DNA and Classification; completes Biology Paper 2.	B 6.2
	Chemistry — Rates & Equilibria	Factors affecting rate and collision theory; catalysts and activation energy; reversible reactions, equilibrium and Le Châtelier; the Haber process.	● collision theory ● activation energy ● dynamic equilibrium	Builds on Chemical and Energy Changes; completes Chemistry Paper 2.	C 6.1–6.2
	Physics — Magnetism & Electromagnetism	Permanent and induced magnets and fields; the motor effect; where relevant, electromagnetic induction, generators and transformers.	● magnetic field ● motor effect ● induction	Builds on KS3/Year 10 Electricity; completes core Physics content.	P 7.1–7.2
Year 11 Summer	**All Sciences — Revision, Mocks & GCSE Examinations**	Structured topic-by-topic revision of both papers for each science; retrieval practice and exam technique; addressing gaps from mock examinations before the AQA GCSE examinations.	● retrieval practice ● exam technique ● Paper 1 & 2	Consolidates the full two-year KS4 curriculum; leads to post-16 study.	All Paper 1 & 2 content