

KS4 SCIENCE Curriculum Topics: Trilogy Combined or Biology/Chemistry/Physics Separate Sciences

KMap	TOPIC	CONTENT OVERVIEW
S1	Scientists & Scientific Ideas	Famous scientists and their contribution, development of scientific ideas
S2	LITERACY	Hazards & Risks, planning, methods, safety, conclusions, evaluations
S3	NUMERACY	Variables, graphs, tables, scaling, units, standard form, significant figures
S4	PRACTICAL WORK	Drawing & naming equipment, Working safely,
Year 10 *Triple Science only		
B	Cell Biology	Structure, organisation, microscopy, cell division, respiration & exercise, enzymes
B	Transport & Photosynthesis	Cell transport, osmosis, plants & humans (digestion, blood & circulation), photosynthesis
B	Disease & development of Medicines	Non/communicable diseases (health & risk factors), pathogens, fighting disease (plants & human), development of drugs
C	Atomic Structure & Periodic Table	Atomic structure, Periodic Table, Electronic structure, Groups 1,7,0
C	Structure & Bonding	Chemical bonds, ionic, covalent structures, states of matter, metals, alloys, carbon allotropes, nano particles
C	Quantitative Chem	Mass, equations, moles, solutions, titrations* , yield
C	Chemical Changes	Reactivity and extraction of metals, pH & salts, neutralisation, acid strength, electrolysis
C	Energy Changes	Endo & Exothermic, energy level diagrams, bond energy, batteries & fuel cells*
P	Electricity	Circuits, current, voltage, resistance, p.d, series/parallel, Domestic uses, power & safety, energy transfers, static electricity
P	Particle Model of Matter	Particle Model, pressure, internal energy, change of state
P	Energy	Energy stores, transfers, conservation & dissipation, national and global resources, specific heat capacity
Year 11 *Triple Science only		
B	Coordination & Control	Homeostasis, nervous system, endocrine system, hormones in reproduction, infertility and contraception, plant hormones*
B	Inheritance, Variation & Evolution	Sexual/asexual reproduction, DNA, genes, inheritance, genetic disorders, variation & evolution, Darwin, Selective breeding, genetic engineering, stem cells, classification
B	Ecosystems	Organisms & ecosystems, feeding relationships, environmental change, biodiversity, recycling, Food production*, biotechnology*
C	Rate and Extent of Chemical Reactions	Rates of reaction, collision theory, activation energy, catalysis, reversible reactions
C	Chemical Analysis	Purity, formulations, chromatography, identification of gases, cations, anions
C	Chemistry of the Atmosphere	Evolution of the atmosphere, Global climate change, pollution
C	Organic Chemistry	Review Y9 Organic chemistry & fuels, alcohols*, carboxylic acids*, esters*, condensation polymers and DNA*
C	Using Resources	potable water, extracting metals, glass ceramics & composites*, life cycle assessment, recycling, preventing corrosion*, The Haber Process*& NPK fertilisers*
P	Forces	Forces, elasticity, speed & velocity, graphs, Newton's Laws, Braking, momentum, resultant forces & vectors
P	Waves	Transverse, longitudinal, reflection, refraction, detection, electromagnetic spectrum, lenses, black body radiation
P	Magnetism & electromagnetism	Permanent & induced magnetism, fields, electromagnets, motor effect
P	Atomic structure & Radioactivity	Atoms & Isotopes, radioactive decay, nuclear radiation, equations, half-life, uses
P	Space Physics*	Stars & the solar system, Orbital motion, red shift & Big Bang Theory