SUBJECT:	Science	**YEAR GROUP:**	9
COURSE:	GCSE Combined Science: Trilogy (8464) / Separate Sciences (8461–63)	**EXAM BOARD:**	AQA
SUBJECT INTENT:	*Year 9 begins the three-year GCSE course. Pupils move straight into AQA GCSE subject matter across biology, chemistry and physics, taught as one integrated Science course. This maximises time to build secure, exam-ready knowledge before Years 10–11 and allows early identification of pupils for additional support or the Triple pathway. Each topic is a full GCSE unit referenced against the AQA specification.*		

TERM	TOPIC	CORE LEARNING	KEY CONCEPTS	SEQUENCING	SPECIFICATION LINK
Autumn	**Cell Structure & Transport**	Eukaryotic and prokaryotic cells; microscopy and magnification; differentiation and stem cells; diffusion, osmosis and active transport.	• eukaryotic / prokaryotic • differentiation • osmosis / active transport	Builds on KS3 Cells; underpins Organisation (B2) and Bioenergetics (B4).	B 1.1–1.3
	Atomic Structure & the Periodic Table	Structure of the atom and the developing model; the periodic table; electronic structure; alkali metals, halogens and noble gases.	• atomic / mass number • electronic structure • groups & trends	Builds on KS3 Elements & Compounds; underpins Bonding and Chemical Changes.	C 1.1–1.4
	Energy & Energy Resources	Energy transfers and systems; kinetic, gravitational and elastic potential energy; efficiency; renewable and non-renewable resources.	• energy store / transfer • efficiency • energy resources	Builds on KS3 Energy; extended into SHC, latent heat and Hooke's law in Year 10.	P 1.1–1.3
Spring	**Enzymes & Digestion**	The digestive system; enzymes as biological catalysts and the lock-and-key model; effect of temperature and pH; food tests.	• enzyme / catalyst • lock-and-key • food tests	Builds on KS3 body systems; leads to the circulatory system in Year 10.	B 2.2
	Chemistry of the Atmosphere	Evolution of the Earth's early atmosphere; the greenhouse effect and human activity; evidence for climate change; atmospheric pollutants.	• greenhouse gas / effect • climate change • pollutants	Builds on the carbon cycle; leads to Paper 2 and Using Resources.	C 9.1–9.2
Summer	**Particles & States of Matter**	Density of the states of matter (required practical); changes of state and internal energy; specific heat capacity, latent heat and gas pressure.	• density • internal energy • specific & latent heat	Builds on KS3 Particles; revisited in the Year 10 Physics Energy topic.	C/P 3.1
	Photosynthesis & Plant Transport	Photosynthesis and limiting factors; use of glucose; plant tissues, xylem and phloem; transpiration and translocation.	• photosynthesis • limiting factor • xylem / phloem	Builds on KS3 biological processes; leads to Bioenergetics (Paper 1).	B 2.3, 4.1
	Respiration & Ecosystems	Aerobic and anaerobic respiration and oxygen debt; response to exercise; abiotic and biotic factors; quadrats and transects; biodiversity and human impact.	• aerobic / anaerobic • oxygen debt • biodiversity • sampling	Builds on Photosynthesis and KS3 Ecosystems; revisited at the start of Year 10.	B 4.2, 7.1–7.3