SUBJECT:	Science	**YEAR GROUP:**	7–8 (Key Stage 3)
COURSE:	Integrated Biology, Chemistry & Physics — building towards AQA GCSE (8461–64)	**EXAM BOARD:**	AQA (KS4) / Smart Activate resource
SUBJECT INTENT:	*Key Stage 3 Science spans Years 7 and 8 as a single, integrated curriculum in biology, chemistry and physics. Across both years pupils build the practical, mathematical and enquiry skills that underpin all further study, working scientifically with increasing precision. Every topic is sequenced to prepare pupils for GCSE content from Year 9. Note: Human Reproduction is taught in Year 8 for age-appropriate delivery.*		

TERM	TOPIC	CORE LEARNING	KEY CONCEPTS	SEQUENCING	SPECIFICATION LINK
Autumn	**Working Scientifically & Particles**	Variables, hypotheses and fair testing; accuracy, precision and hazards. The particle model explains solids, liquids and gases, density, changes of state and gas pressure.	• variables • accuracy & precision • particle model • states of matter	Builds on KS2 fair tests and states of matter; underpins every required practical and GCSE P3/C2.	Working scientifically; builds to P3/C2
	Elements & Compounds	Atoms, elements, compounds and mixtures; the periodic table, chemical symbols and word equations.	• atom / element • compound / mixture • periodic table	Builds on Particles; leads to GCSE C1/C2.	Builds to C1/C2
	Cells	Animal and plant cells; microscopy and magnification; specialised and unicellular organisms.	• cell structure • magnification • specialised cells	Builds on KS2 living things; leads to GCSE B1.	Builds to B1
	Structure & Function of Body Systems	Cells to tissues, organs and systems; skeletal and muscular systems; breathing and the digestive system.	• tissue / organ / system • antagonistic muscles • gas exchange	Builds on Cells; leads to GCSE B2.	Builds to B2
Spring	**Sound**	Sound as a wave through matter; amplitude, frequency, pitch and volume; the ear and ultrasound.	• vibration / wave • amplitude & frequency • ultrasound	Builds on KS2 sound; leads to GCSE P6.	Builds to P6
	Light	Light travels in straight lines; reflection, refraction, shadows and colour; how the eye detects light.	• reflection & refraction • ray diagrams • visible spectrum	Builds on KS2 light; leads to GCSE P6.	Builds to P6
	Reactions	Signs of a chemical reaction and conservation of mass; combustion, oxidation and thermal decomposition; word equations.	• reactant / product • conservation of mass • combustion	Builds on Elements & Compounds; leads to GCSE C4/C5/C7.	Builds to C4/C5/C7
	Acids & Alkalis	The pH scale and indicators; neutralisation forming salt and water; hazard symbols and safe measurement of pH.	• acid / alkali / base • pH scale • neutralisation	Builds on Reactions; leads to GCSE C4.	Builds to C4
Summer	**Forces**	Contact and non-contact forces; balanced and unbalanced forces and their effect on motion or shape; measuring force and calculating speed.	• contact / non-contact force • balanced / unbalanced • resultant force	Builds on KS2 pushes and pulls; leads to GCSE P5.	Builds to P5
	Space Project	End-of-year research project: the solar system, day and night, the seasons, phases of the Moon and gravity in orbits.	• solar system • orbit / rotation • gravity	Builds on Forces and Light; leads to GCSE P8 (Triple).	Builds to P8 (Triple)
	Health, Reproduction & Inheritance	Balanced diet, exercise and drugs; human and plant reproduction (Yr 8); variation, genes, DNA and evolution by natural selection.	• balanced diet • fertilisation / puberty • variation & inheritance • natural selection	Builds on Body Systems and Cells; leads to GCSE B2/B4/B5/B6.	Builds to B2/B4/B5/B6
	Ecosystems & Adaptations	Interdependence, food chains and webs; competition; structural, behavioural and functional adaptations; quadrats and transects.	• ecosystem / habitat • food chain & web • adaptation • quadrat / transect	Builds on KS2 habitats; leads to GCSE B7.	Builds to B7