TOPIC TITLE	TOPIC OVERVIEW	KNOWLEDGE & SKILLS	ASSESSMENT	WIDER LINKS
Particles & Their Behaviour	States of matter, particle theory, gas diffusion and Brownian motion.	• Describe solid, liquid, gas states • Draw particle diagrams • Explain diffusion and Brownian motion	• Weekly homework (research & exam-style questions) • Half-term end-of-topic test	**KS3:** Prep for Y7 Reactions & Acids/Alkalis **KS4:** P1 (Energy); P8 (Forces in balance)
Cells	Structure and function of plant and animal cells; use of microscopes.	• Label cell parts • Explain organelle functions • Prepare and observe slides under a microscope	• Microscope practical write-up • End-of-topic test	**KS3:** Leads into Y7 Body Systems & Reproduction **KS4:** B1 (Cell structure & transport); B2 (Cell division)
Forces	Types of forces, vector representation, calibration of spring scales, balanced vs unbalanced forces, upthrust.	• Name and give examples of forces • Use arrows to represent magnitude & direction • Calibrate simple force meters • Investigate upthrust	• Weekly homework (practical write-ups & exam-style questions) • Half-term test	**KS4:** P8 (Forces in balance); P9 (Motion); P10 (Forces in motion); P11 (Force & pressure); P16 (Space)
Atoms, Elements & Compounds	Definition of atoms/elements, chemical symbols, physical vs chemical properties, word-equation representation, basic analysis.	• Define atom vs element • Read/write chemical symbols • Distinguish physical vs chemical properties • Write word equations for reactions	• Weekly homework (research & exam-style questions) • Half-term test	**KS3:** Y7 Particles & Behaviour, Reactions, Acids/Alkalis;Y8 Periodic Table, Separation Methods, Metal–Acid Reactions **KS4:** C1–C6, C7–C13
Reactions	Classification of reactions (neutralisation, combustion, etc.), energy	• Classify reaction types	• Weekly homework (research &	**KS3:** Builds on Atoms & Compounds;Y8 mixtures & metal–acid reactions

	changes, conservation of mass, basic reaction rates.	• Explain exothermic/endothermic changes • Balance reaction equations (symbolic & word)	exam-style questions) • Half-term test	**KS4:** C3 (Structure & bonding), C4 (Calculations), C5 (Changes), C8 (Rates)
Light	Wave nature of light: energy transfer, reflection, refraction, colour mixing, and basic ray diagrams.	• Use terms transparent/translucent/opaque • State and apply law of reflection • Explain refraction • Predict colour mixing outcomes	• Weekly homework (ray-diagram practice & exam-style questions) • Half-term test	**KS3:** Prepares for Y7 Sound **KS4:** P12 (Wave properties), P13 (Light)
Sound	Sound wave propagation in air, oscilloscope operation, wave features (frequency, amplitude), insulation methods, applications of ultrasound.	• Describe sound wave motion • Interpret oscilloscope traces • Explain wave features • Design simple sound-insulation experiments • Discuss medical uses of ultrasound	• Weekly homework (research & exam-style questions) • Half-term test	**KS3:** Builds on Y7 Light & Y8 Motion/Pressure **KS4:** P1 (Energy conservation), P12 (Wave properties)
Structure & Function of Body Systems	Organisation from cells → tissues → organs → systems in humans & plants; gas exchange; musculoskeletal function; plant tissue roles.	• Define and describe tissues/organs/systems • Explain breathing & gas exchange • Diagram musculoskeletal mechanics • Identify plant tissue adaptations	• Weekly homework (research & exam-style questions) • Half-term test	**KS3:** Follows Cells & Reproduction; Y8 Health topics **KS4:** B1–B2 (Cell topics), B4 (Organising animals & plants), B5 (Communicable diseases), B10 (Nervous system)

Reproduction	Human reproductive anatomy, gametogenesis, fetal development, puberty, menstrual cycle, and assisted reproductive technologies overview.	• Label reproductive organs • Describe fertilisation & development • Explain hormonal control of puberty & menstrual cycle	• Weekly homework (research & exam-style questions) • Half-term test	**KS3:** Builds on Cells & Body Systems; Y8 Health **KS4:** B11 (Hormonal control), B13 (Reproduction), B14 (Variation & evolution)
Acids & Alkalis	pH scale usage, indicators, neutralisation reactions, salt preparation, hazard symbols, and risk assessments.	• Use pH scale & indicators • Explain neutralisation • Prepare salts in practical • Conduct basic hazard/risk assessments	• Weekly homework (practical write-ups & exam-style questions) • Half-term test	**KS3:** Links to Y7 Particles & Compounds;Y8 Periodic Table & Mixtures **KS4:** C5 (Chemical changes), C6 (Electrolysis)
Ecosystem Processes	Photosynthesis (including chemosynthesis), aerobic/anaerobic respiration, nutrient cycles, food chains/webs, and human impact on ecosystems.	• Write & balance photosynthesis equations • Describe leaf adaptations & mineral uptake • Compare respiration types • Construct food webs & nutrient cycle diagrams	• Weekly homework (research & exam-style questions) • Half-term test	**KS3:** Builds on Cells & Body Systems; Y8 Adaptation & Variation **KS4:** B4 (Organising animals & plants), B8 (Photosynthesis), B9 (Respiration), B16–B18 (Ecosystems)