	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6  Content delivered: Physics Friction and drag Squashing and stretching Hookes Law Pressure in gases Pressure in liquids Stress on solids Biology Unicellular organisms Specialised cells Ecosystems – decomposers Carbon cycle	
Year 9 Science	Content delivered: HSW Project: Working scientifically acids, alkalis and neutralisation Physics Force diagrams Contact and non-contact forces Speed, distance and time Gravity	Content delivered: Biology Photosynthesis Starch testing Stomata HSW: Photosynthesis investigation Plant minerals Aerobic respiration Fermentation Biotechnology Chemistry Atoms Combustion Thermal decomposition	Content delivered: Chemistry Conservation of mass Endothermic reactions Exothermic reactions Energy level diagrams Bond energies Physics Sound waves, water waves and energy Radiation Waves	Content delivered: Biology Natural selection Charles Darwin Extinction Preserving biodiversity Inheritance DNA Genetics Genetic modification	Content delivered: Chemistry Structure of the Earth Sedimentary rocks Igneous and metamorphic rocks Rock cycle Ceramics Global warming and climate change Carbon cycle Extracting metals Recycling		
Key Words Level 2 Level 3	Acid/acidic, alkali, hydroxide, ion, base, neutralisation, indicator, phenolphthalein, pH, buffer, force, balanced, unbalanced, contact, noncontact, newton, speed, displacement, acceleration, gravity, mass, weight	Photosynthesis, chlorophyll, chloroplast, stomata, limiting factor, independent variable, dependent variable, control variable, reliability, reproducibility, valid, continuous, discontinuous, deficiency, aerobic, anaerobic, respiration, cardiac, fermentation, lactic acid, ethanol, biotechnology, atom, compound, mixture, irreversible, conservation of mass, balancing, combustion, thermal decomposition, displacement, oxidation, reduction	Atom, compound, mixture, irreversible, conservation of mass, balancing, combustion, thermal decomposition, displacement, oxidation, reduction, exothermic, endothermic, energy change, enthalpy change, reaction profile, solid, liquid, gas, speed, vibration, frequency, electromagnetic, spectrum, gamma rays, microwaves, infrared, ultraviolet, x-rays, amplitude, frequency	Extinction, poaching, biodiversity, ecosystem, habitat, conservation, natural selection, allele, gene, dominant, recessive, characteristic, inheritance, gamete, chromosome, probability	Mantle, crust, inner/outer core, diameter, radius, crystal/crystallisation, grain size, layers, fossils, sedimentation, extrusive, intrusive, weathering, erosion, deposition, transportation, oxidation, reduction, reactivity, displacement	Air resistance, contact forces, friction, gram, gravity, kilogram, magnetism, mass, newton, non-contact force, static electricity, up-thrust, water resistance, weight, compress, elastic limit, extension, Hooke's law, proportional, spring, lubricant, pascal, pressure, balanced forces, stationary, unbalanced forces, unicellular, cytoplasm, cell membrane, DNA, mitochondria, ribosomes, differentiated, nucleus, cell wall, flagella, capsule, ecosystem, nutrient, decomposer, detritivore, digest, combustion, respiration, photosynthesis, decay, detritivore, decomposer	
Where previous knowledge has occurred and future development KS2 → KS3 → KS4 → KS5	KS2: Forces as pushes and pulls KS3: Year 8 Levers and pulleys KS4: Year 10 Chemical changes (C4.4) KS4: Year 11 Forces (P4.5) KS5: Year 12 Mechanics	KS2: How water is transported within plants KS3: Year 8 Flowers KS4: Year 10 Photosynthesis (B4.4) KS3: Year 10 Atoms (C4.1) KS5: Year 12 Biotechnology KS5: Year 13 Photosynthesis KS5: Year 12 Enthalpy of combustion	KS2: How vibrations make sounds KS3: Year 8 Chemical formulae KS4: Year 10 Quantitative chemistry (C4.3) KS4: Year 10 Energy changes (C4.5) KS4: Year 11 Waves (P4.6) KS5: Year 12 Enthalpy changes and Hess cycles KS5: Year 12 Waves and the particle nature of light	KS2: Fossils and variation in offspring KS3: Year 8 Variation KS4: Year 11 Inheritance (B4.6) KS5: Year 13 Genetics	KS2: What rocks are made of and comparing types of rocks KS3: Year 7 Elelments KS4: Year 11 Chemistry and atmosphere (C4.9) KS4: Year 11 Using resources (C4.10) KS5: Year 12 Radical chain reactions and plastics/polymerisation	KS2: Investigating how things move KS3: Year 7 Ecosystems KS4: Year 10 Cells (B4.1) KS4: Year 11 Ecology (B4.7) KS4: Year 11 Forces (P4.5) KS5: Y12 Cells KS5: Y12 Ecological relationships	
Common Misconceptions	Confusing weight and mass	Limiting factors all have the same shape graphs	Exothermic means that the 'substance' gets hotter	Mutations are all negative	Confusion between crystal sizes in intrusive and extrusive igneous rock	Only animals have specialised cells	
Literacy	Scientific writing (HSW): Making salts NHTW reviews as starter activities	Scientific writing (HSW): Investigating photosynthesis NHTW reviews as starter activities	Scientific writing (HSW): Exo and endothermic reactions NHTW reviews as starter activities	NHTW reviews as starter activities Writing to describe: the process of natural selection	NHTW reviews as starter activities Writing to describe: the formation of different rock types	Scientific writing (HSW): Investigating friction NHTW reviews as starter activities	
Numeracy	Rearranging formulae Drawing and interpreting graphs	Calculating means Drawing and interpreting graphs	Simple addition Working with negative numbers	Calculating probability Analysing data	Working with percentages	Drawing and interpreting graphs Rearranging equations	
Homework	Completion of kerboodle section quizzes	Completion of kerboodle section quizzes	Completion of kerboodle section quizzes			Completion of kerboodle section quizzes	
Assessment this half-term	Unit test for physics	Unit test for biology	Unit test for chemistry GL Assessment	Init test for chemistry Unit test for biology Unit test for c		Unit test for physics GL Assessment	
Career opportunities Employment Links	LIFE SKILLS: Understanding the factors affecting braking distances EMPLOYMENT: Forensic investigator	LIFE SKILLS: Understanding the best conditions for plant growth & understanding how heat breaks down substances EMPLOYMENT: Horticulturist	LIFE SKILLS: Understanding how sound travels & understanding why different reactions release different amounts of energy EMPLOYMENT: Sound engineer	LIFE SKILLS: Understanding how characteristics are inherited EMPLOYMENT: Evolutionary biologist	LIFE SKILLS: Understanding how global warming is caused EMPLOYMENT: Geologist	LIFE SKILLS: Understanding the effects of pressure & understanding how organic matter is broken down EMPLOYMENT: Aeronautical engineer	
Enrichment	Neutralization	Charab hashing	En deth annia ne estica	Nancy Rothwell Award	Forting action of the Co.	Friedrice	
Practical activities/HSW	Neutralisation Forces Trolleys on ramps	Starch testing Nail varnish stomata Limiting factors in photosynthesis Combustion Thermal decomposition	Endothermic reactions Exothermic reactions Oscilloscope	Extracting DNA	Extracting metals	Friction Hookes Law Pressure	
Employability Skills	Aiming high Literacy Creativity Numeracy	Aiming high Literacy Creativity Numeracy	Aiming high Literacy Creativity Numeracy	Aiming high Literacy Creativity Numeracy	Aiming high Literacy Creativity Numeracy	Aiming high Literacy Creativity Numeracy	

	Leadership Listening	Independence Communication	Leadership Listening	Independence Communication	Leadership Listening		Leadership Listening	Independence Communication	Leadership Listening	Independence Communication	Leadership Listening	Independence Communication
	Presenting	Teamwork	Presenting	Teamwork	Presenting	Teamwork	Presenting	<mark>Teamwork</mark>	Presenting Presenting Presenting	Teamwork	Presenting	Teamwork
	Problem solving	Staying positive	Problem solving	Staying positive	Problem solving	Staying positive	Problem solving	Staying positive	Problem solving	Staying positive	Problem solving	Staying positive
IT Skills	IT1 & IT2: Appropriate websites and research for homework as well as recall						IT1 & IT2: Appropriate websites and research for homework as well as recall		IT1 & IT2: Appropriate websites and research for homework as well as recall		IT1 & IT2: Appropriate websites and research for homework as well as recall	
	quizzes quizzes		quizzes		quizzes		quizzes		quizzes			
Notes/developments	Order of teaching will change in 2023/2024 to allow for updated programme of study											
/standardisation comments												