

Science – Year 8



Curriculum Intent

	What?	Key knowledge that EVERYONE must know	Why?
Term 1-1	<ul style="list-style-type: none"> • 8B1 Plants & reproduction – types of reproduction, pollination, fertilisation, seed dispersal, classification, photosynthesis, plant organs • 8C1 Atomic Structure and the Periodic Table – structure of the atom, electron shells, trends in the periodic table, balancing equations • 8P1 Fluids – Particle model, density, calculating density, displacement can practical, air pressure, drag and friction, changing state, heating and cooling curves, pressure in fluids, upthrust 	<ul style="list-style-type: none"> • Water + carbon dioxide → glucose + oxygen • Atoms are made of protons, neutrons and electrons • Fluids are liquids and gases 	<p>Recap plant cells/organs Photosynthesis key at GCSE Gametes – sexual reproduction</p> <p>Very important topic that is expanded on at GCSE</p> <p>Expanded on at GCSE – recaps previous knowledge Links to forces</p>
Term 1-2	<ul style="list-style-type: none"> • 8B2 Breathing & respiration – aerobic respiration, respiration equation, gas exchange in lungs, gas exchange in fish gills, anaerobic respiration, comparing aerobic and anaerobic 	<ul style="list-style-type: none"> • Glucose + oxygen → water + carbon dioxide 	<p>Expanded on at GCSE – recaps previous knowledge</p>



	<ul style="list-style-type: none"> • 8C2 Combustion – burning fuels, conservation of mass, fire safety, air pollution causes, global warming, complete and incomplete combustion, balancing equations • 8P2 Energy transfers – temperature and heat, conduction, convection, radiation, insulation practicals, power and efficiency equations, paying for energy, Sankey diagrams 	<ul style="list-style-type: none"> • Combustion is burning in oxygen • Energy cannot be created or destroyed, only transferred 	<p>Expanded on at GCSE – recaps previous knowledge Links to ecology Links to geography</p> <p>Expanded on at GCSE – recaps previous knowledge</p>
Term 2-1	<ul style="list-style-type: none"> • 8B3 Unicellular organisms – Groups of unicellular organisms – bacteria, protists, fungi, bacteria structure, growth curves of bacteria, useful microbes, decomposers and the carbon cycle • 8C3 Metals & reactivity – properties of metals, corrosion, reactions of metals with water and acid, alloys, reactivity series 	<ul style="list-style-type: none"> • Bacteria/prokaryotes do not have a nucleus • Metals can conduct heat and electricity 	<p>Expanded on at GCSE – recaps previous knowledge</p> <p>Recaps previous topics (acids, periodic table) Expanded on at GCSE</p>
Term 2-2	<ul style="list-style-type: none"> • 8B4 Genetics & evolution – Variation types, structure of DNA, extracting DNA from fruit, genes, alleles, genetic diagrams, evolution, Darwin’s theory of evolution 	<ul style="list-style-type: none"> • Alleles are a different form of the same gene 	<p>Expanded on at GCSE – recaps previous knowledge</p>



	<ul style="list-style-type: none"> • 8P3 Earth & space – The solar system, ways of exploring the universe, life cycle of stars, big bang theory, seasons on earth, magnetic field of earth 	<ul style="list-style-type: none"> • The earth has a magnetic field similar to a bar magnet 	Expanded on at GCSE – recaps previous knowledge
Term 3-1	<ul style="list-style-type: none"> • 8P4 Forces & motion – calculating speed, calculating acceleration, distance-time graphs plotting and interpreting, $F=ma$, moments, calculating work done • 8C4 Rocks – Structure of the earth, 3 types of rock formation, structure of rocks, rock cycle, types of weathering, fossil formation and fossil record 	<ul style="list-style-type: none"> • Speed = distance / time (m/s) • Fossils are remains of dead organisms found in rocks 	<p>Expanded on at GCSE – recaps previous knowledge</p> <p>Comes up at GCSE, links to evolution</p>
Term 3-2	<ul style="list-style-type: none"> • 8P5 Force fields and electromagnetism – force fields, static electricity, magnetism and electromagnetism • Core practical work – new TT fortnight – preparation for GCSE studies 	<ul style="list-style-type: none"> • Opposite poles attract, like poles repel 	Expanded on at GCSE – recaps previous knowledge