



Science Long Term Curriculum Plan 2025/26

Throughout our curriculum planning we remain focused on delivering a 21st century curriculum designed to ensure Pupils are well prepared for the future. Years 3-6 and Year 9 take part in Forest School during the academic year (each of the years go for a term, this can vary yearly).

Subject	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 7 (Skills and knowledge) NC Units Year 7 NC Units Year 5 Expected Bower Grove Framework Year 7	Pupils will be introduced to the science lab, health and safety, essential equipment, scientific investigation skills, and the basic structure of plant and animal cells as the building blocks of living organisms.	Pupils will build on the concept of cells as the building blocks of living organisms and be introduced to the levels of organisation in multicellular organisms starting with cells, while also understanding the particle model to explain solids, liquids, and gases, exploring changes of state and the effect of temperature on particle movement.	Pupils will be introduced to atoms, elements, molecules, and compounds, learning to name molecules and write chemical symbols and formulae, and will develop their understanding of chemical reactions, including oxidation, combustion, and decomposition.	Pupils will study different types of forces, such as gravity, friction, and air resistance, learning how they affect motion and how to measure and represent forces with arrows, while also building on their knowledge of sound by exploring longitudinal and transverse waves and their interactions with barriers and each other.	Pupils will build on their prior knowledge of circuits by focusing on complex circuits and will be introduced to acids and alkalis through practical investigations.	Pupils will be introduced to properties of light and build on prior learning by exploring colours, and will also be introduced to celestial objects visible in the night sky as well as other objects in the Universe.
Core text	Oxford Smart Activate 1 student book Biology	Oxford Smart Activate 1 student book Biology and Chemistry	Oxford Smart Activate 1 student book Chemistry	Oxford Smart Activate 1 student book Physics	Oxford Smart Activate 1 student book Physics	Oxford Smart Activate 1 student book Physics
Enrichment Opportunities		The Grove				
Year 8 (Skills and knowledge) NC Units Year 8	Pupils will be introduced to the components of a balanced diet and its role in maintaining health, and will	Pupils will learn about pure substances and mixtures, how to test purity, and the terms solute, solvent, solution, and	Pupils will develop their understanding of how to answer scientific questions and analyse findings, and will study	Introduces Pupils to energy resources, stores, and transfers. Pupils will look at how electricity is generated by renewable and	Pupils will be introduced to speed, pressure, and turning forces, learning to describe motion using distance-time graphs,	Pupils will learn about the Earth's composition and atmosphere, study sedimentary,

Expected Bower Grove Framework Year 8	develop their knowledge of elements by learning to distinguish between metals and non-metals.	solubility, and will be introduced to electric fields, current, and magnetism.	photosynthesis, leaf adaptations for this process, and its importance for life on Earth.	non-renewable resources.	and will study the reactions of metals with acids, oxygen, and water, including writing word equations for these reactions.	igneous, and metamorphic rocks including their formation, properties, and uses, explore feeding relationships in food chains and webs with bioaccumulation, and examine variation in organisms to determine inherited and environmental influences.
Core text	Oxford Smart Activate 2 student book Chemistry	Oxford Smart Activate 2 student book Chemistry and Physics	Oxford Smart Activate 2 student book Biology	Oxford Smart Activate 2 student book Physics	Oxford Smart Activate 2 student book Chemistry and Physics	Oxford Smart Activate 2 student book Chemistry and Biology
Enrichment Opportunities						
Year 9 (Skills and knowledge) NC Units Year 9 Expected Bower Grove Framework Year 9	Pupils will build on KS3 knowledge of forces and motion by applying concepts like balanced and unbalanced forces to complex scenarios such as skydiving, and will revisit the particle model to explore states of matter, energy changes during	Pupils will explore how microscopes advanced cell understanding, study specialised plant cells and transport, investigate exercise, diffusion, prokaryotic cells, and active transport; revisit levels of organisation and enzymes in digestion, exchange	Pupils will deepen their understanding of energy stores, quantify energy transfers, and learn that energy moves between stores causing physical changes, while also distinguishing between chemical and physical changes, writing balanced	Pupils will compare sexual reproduction in plants and animals, explore contraception and the menstrual cycle, investigate seed dispersal, learn about alleles and asexual reproduction, and use wave concepts to explain phenomena, explore applications like ultrasound, x-rays,	Pupils will develop skills in recording, presenting, and analysing data, and will explore chemical reactions involving metals, including properties, the reactivity series, displacement, and catalysts, while enhancing practical and math skills	Pupils will explore how characteristics are shaped by inheritance and the environment, study adaptations, natural selection, biodiversity, and factors affecting ecosystems and species

		state changes, and its limitations.	surfaces, and transport systems in animals and plants; and learn about the development of the Periodic Table, atomic structure, metals and non-metals, Group 2 elements, compounds, electron configuration, and bonding.	equations, and exploring reactions such as combustion and energy changes in exothermic and endothermic processes.	and telescopes, and consider related risks and communication.	through topics like relative mass and yields.	distribution, while building on electricity and magnetism concepts by exploring static electricity, circuit types, magnetism, induced potential difference, and how generators work.
Core text	Oxford Smart Activate 3 student book Physics	Oxford Smart Activate 3 student book Biology	Oxford Smart Activate 3 student book Chemistry	Oxford Smart Activate 3 student book Biology	Oxford Smart Activate 3 student book Chemistry	Oxford Smart Activate 3 student book Chemistry	Oxford Smart Activate 3 student book Physics
Enrichment Opportunities							
Year 10 AQA Content (Skills and knowledge) NC Units Year 10/11 Expected Bower Grove Framework Year 10	Pupils will explore how advances in microscopy have deepened understanding of sub-cellular structures and cell types, study diffusion, osmosis, active transport, and their link to cell adaptations and exchange surfaces; learn about cell division through mitosis, differentiation, and stem cells; deepen understanding of atomic structure,	Pupils will deepen their understanding of energy stores and transfers, learn to measure work done by forces, analyse changes in gravitational, kinetic, and elastic energy using math relationships, discuss energy conservation and dissipation, study energy efficiency and power, and compare energy resources based on local and global effects, costs, and combined use to	Pupils will study key concepts in biology and physics. They will explore photosynthesis in plants and algae, including factors affecting its rate, leaf adaptations, and how greenhouse conditions can be managed to improve efficiency. They will investigate cellular respiration, its role in energy release, the function of mitochondria, responses to exercise, anaerobic respiration	Pupils will study biological and chemical principles related to organisation and chemical changes. They will explore the principles of organisation, including cell differentiation and specialisation, and examine how the human digestive system will break down carbohydrates, proteins, and lipids into smaller molecules for absorption into the bloodstream. They will also study the	Pupils will study how communicable diseases caused by bacteria, viruses, and protists will affect health. They will explore methods of transmission and prevention, including hygiene, isolation, vector control, and vaccination, and will investigate the effectiveness of disinfectants and antibiotics through practical experiments. They will also learn about preventing and	Pupils will deepen their understanding of the particle model by studying density, states of matter, and phase changes. They will explore kinetic theory, internal energy, latent heat, and investigate the relationship between gas pressure and temperature by analysing particle	

		<p>chemical formulae, conservation of mass, balancing equations, separation techniques, and the development of the atomic model; and study the periodic table's development and apply electronic structure knowledge to explain trends in Groups 0, 1, and 7.</p>	<p>meet demands; build on particle model knowledge to explain energy transfers during state changes and study covalent, ionic, and metallic bonding along with nanoparticles; deepen understanding of atomic structure and use relative atomic masses and the mole concept for calculations; investigate heating and cooling processes, thermal conductivity, specific heat capacity, and insulation methods; and explore various energy sources including biofuels, nuclear, and renewables, evaluating their environmental impacts and carbon neutrality.</p>	<p>in muscles and yeast, and the economic value of fermentation.</p> <p>In physics, pupils will examine electric circuits by learning about atomic structure, charging by friction, electric fields, current, voltage, resistance, and how these behave in series and parallel circuits. They will also investigate components like thermistors and LDRs. Finally, they will study electricity in the home, comparing AC and DC, understanding mains wiring and safety features, and analysing power, heating effects, and energy efficiency in household devices.</p>	<p>organisation of animals and plants, including the structure and function of the heart, blood vessels, and circulatory system, as well as breathing, gas exchange, plant tissues, transport systems, and factors affecting transpiration.</p> <p>In chemistry, pupils will deepen their understanding of the reactivity series, investigate how metals react with water and acids, apply this to displacement reactions and methods of metal extraction, and practise salt preparation techniques while exploring the pH scale. They will also study the principles of electrolysis, focusing on particle movement and electrode reactions, and apply this knowledge to processes such as aluminium extraction</p>	<p>treating diseases through vaccination, painkillers, and antibiotics, including how these treatments work, the issue of antibiotic resistance, and how modern drugs will be developed and tested through clinical trials.</p> <p>Pupils will explore non-communicable diseases by examining risk factors, distinguishing correlation from causation, and understanding cancer types, treatments, and the health effects of smoking, alcohol, poor diet, lack of exercise, and exposure to ionising radiation. In chemistry, they will study energy changes in chemical reactions, identifying exothermic and endothermic processes, interpreting reaction profiles, calculating energy changes using bond energies, and applying this knowledge to</p>	<p>behaviour. In studying radioactivity, pupils will learn about the discovery of the nucleus, atomic models, nuclear decay and notation, radiation types and uses, safety measures, half-life, and related calculations.</p> <p>In ecology, pupils will explore adaptation, interdependence, and competition by learning key ecological terms, examining how species interact in communities, and evaluating the effects of abiotic and biotic factors. They will study methods for measuring populations, investigate how organisms compete, and understand various</p>
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Core text	Kerboodle AQA Student textbook Biology and Chemistry	Kerboodle AQA Student textbook Physics and Chemistry	Kerboodle AQA Student textbook Biology and Physics	Kerboodle AQA Student textbook Biology and Chemistry	Kerboodle AQA Student textbook Biology and Chemistry	Kerboodle AQA Student textbook Biology and Chemistry	Kerboodle AQA Student textbook Biology, Physics and Chemistry
Enrichment Opportunities							
Pupils in Year 11 will be building on their existing knowledge and applying their learnt skills and knowledge to the topics that they will be focusing on during this academic year. Pupils will be given time to conduct required practical's and spend time revising for their GCSE exams.							
Year 11 Content AQA GCSE (Skills and knowledge) NC Units Year 10/11 Expected Bower Grove Framework Year 11	Pupils will learn how factors like temperature, pressure, concentration, surface area, and catalysts affect reaction rates using collision theory, and apply this to reversible reactions and dynamic equilibrium. They will study crude oil, hydrocarbons, combustion, cracking, and fractional distillation, and understand how hydrocarbon size influences properties. Pupils will identify and explore organic compounds such as alkenes, alcohols, carboxylic acids, and	Pupils will study forces by exploring vectors and scalars, balanced and unbalanced forces, and Newton's laws to understand motion and object behaviour. They will analyse speed, acceleration, and motion graphs, and experimentally investigate how force and mass affect acceleration and material extension. Pupils will learn about pressure, how it acts on surfaces, and its effects. In chemistry, pupils will study manufactured polymers, focusing on addition and condensation types,	Pupils will learn about Earth's finite and renewable resources, recycling, life cycle assessments, water treatment, and metal extraction methods including electrolysis. They will study rust prevention, material properties, and the industrial Haber process for ammonia production. In biology, pupils will explore reproduction in fungi, plants, and parasites, DNA structure and function, protein synthesis, inheritance patterns, and genetic disorders. They will also study variation and evolution, including mutation, natural selection, selective breeding,	Pupils will study wave properties by comparing mechanical and electromagnetic waves, including transverse and longitudinal types. They will explore the electromagnetic spectrum, its applications, and energy effects such as ionisation and infrared emission. They will investigate light through reflection, refraction, image formation, and lens behaviour. In electromagnetism, pupils will study magnetic fields, induced magnetism, and the effects of electric currents and solenoids.	Pupils will study the formation of the solar system from a nebula, the life cycles of small and large stars—including supernovae and their role in forming heavy elements—and the orbits of planets. GCSE Revision and Exams		GCSE Revision and Exams

		<p>esters, including their reactions and acidity.</p> <p>In biology, pupils will study homeostasis, the human nervous system (including reflexes and sensory receptors), the eye's structure and defects, and hormonal coordination covering blood glucose control, reproductive hormones, puberty, and plant hormones. They will also examine temperature regulation and kidney failure treatments like dialysis and transplantation.</p>	<p>and learn to identify monomers and polymers. They will distinguish pure substances from mixtures, understand chromatography, perform gas and ion tests, and interpret flame emission spectroscopy.</p> <p>In Earth science, pupils will explore the atmosphere's volcanic origin, evolution, human impacts like global warming and pollution, and develop skills to evaluate scientific models and evidence.</p>	<p>genetic engineering, cloning, and related ethical issues. Finally, pupils will examine the history of evolutionary theory, speciation, fossil evidence, antibiotic resistance, and biological classification systems.</p>			
	Core texts	<p>Kerboodle AQA Student textbook Biology Kerboodle AQA Student textbook Chemistry Kerboodle AQA Student textbook Physics</p>			<p>AQA Biology, Physics and Chemistry revision guides.</p>		
	Enrichment opportunities						