

Science



At St. Saviour's & St. Olave's, our students learn to understand the fundamental scientific principles relating to the human body and how we interact with our environment, the study of particles and chemical reactions and the concepts of energy and forces. To acquire scientific skills to understand how a scientist carries out science safely through an interpretation of the meaning of practical work, its analysis and evaluation. A level of scientific literacy that enables them to understand key scientific events in their community and how they can make a contribution to a sustainable future.

KS3 Curriculum for Science

In KS3 our students prepare for GCSE by facilitating their understanding of the key ideas, applying them and extending them for the brightest whilst at the same time developing their mathematical skills, literacy and scientific enquiry. In Year 7 we focus on developing the fundamental knowledge of our own bodies, matter and the forces that allow for movement. Whilst in Year 8, our focus is more centralised to the scientific enquiry of our impact on the environment, how chemicals interact and the importance of energy. In Year 9, our preparation steps up with observation and measurement as a fundamental focus.

	Half-term 1	Half-term 2	Half-term 3	Half-term 4	Half-term 5	Half-term 6
Year 7	What are we made of?	What are we made of?	What's the matter?	What's the matter?	Can we make things move?	Can we make things move?
	The organisation of life	Co-ordination of the human body	Particles, and mixtures.	Atoms, elements and compounds	Forces and motion	Movement of sound and light

Year 8	How do we take care of our environment?	How do we take care of our environment?	What can we do with Chemistry?	What can we do with Chemistry?	Why is energy so important?	Why is energy so important?
	Interdependence of species in an ecosystem	Survival of the fittest	Chemical reactions of metals and non-metals	Using resources from our planet	Energy and its transfer	Relationship between electricity and magnetism
Year 9	Being Alive	Being alive	The periodic table	Chemical change	Structure of matter	Linear motion
	Using microscopes and identifying food	Looking at interacting organ systems.	Historical models in science	Making salts and measuring reactions	Measuring density and heat	measuring velocity, acceleration and springs

KS4 Curriculum for Combined Science

In KS4 our students study a range of topics to further develop the fundamental knowledge and enhance their scientific understanding through experimental work leading to a practical endorsement of their skills, boost their mathematical and scientific literacy and then be able to confidently apply their knowledge to unfamiliar scenarios whilst linking key ideas together

	Half-term 1	Half-term 2	Half-term 3	Half-term 4	Half-term 5	Half-term 6
Year 10	Diseases	Preventing and treating disease	Non-communicable diseases	Photosynthesis	Respiration	Human nervous system
	Chemical structure	Bonding	Electrolysis	Energy changes	Rates of reaction	Equilibrium
	Energy transfer	Energy resources	Electrical circuits	Electricity in the home	Nuclear Radiation	Nuclear Radiation
Year 11	Hormonal coordination	Variation, genetics and evolution	Adaptations and ecosystems	Biodiversity		
	Quantitative chemistry	Crude oil and chemical analysis	The Earth's atmosphere	The Earth's resources		
	Waves	Electromagnetic spectrum	Balancing forces	electromagnetism		

KS4 Curriculum for Separate Science

In KS4 our students study an extended range of topics to further develop the fundamental knowledge and enhance their scientific understanding through experimental work leading to a practical endorsement of their skills, boost their mathematical and scientific literacy and then be able to confidently apply their knowledge to unfamiliar scenarios whilst linking key ideas together

	Half-term 1	Half-term 2	Half-term 3	Half-term 4	Half-term 5	Half-term 6
Year 10 Biology	Diseases	Preventing and treating disease	Non-communicable diseases	Photosynthesis	Respiration	Human nervous system
Year 10 Chemistry	Chemical structure	Bonding	Electrolysis	Energy changes	Rates of reaction	Equilibrium
Year 10 Physics	Energy transfer	Energy resources	Electrical circuits	Electricity in the home	Nuclear Radiation	Nuclear Radiation

Year 11 Biology	Hormonal coordination	Variation, genetics and evolution	Adaptations and ecosystems	Biodiversity		
Year 11 Chemistry	Quantitative chemistry	Crude oil and chemical analysis	The Earth's atmosphere	The Earth's resources		
Year 11 Physics	Waves	Electromagnetic spectrum	Balancing forces	electromagnetism		

KS5 Curriculum for Advanced Science

In our sixth form our students study an extended range of topics in much greater depth to deepen their learning of our world and beyond. This is enhanced through individual experimental work leading to a practical endorsement of their kinaesthetic skills, boost their mathematical, academic and scientific literacy. Students will be able to confidently apply their knowledge to many novel scenarios whilst linking critically knowledge together.

	Half-term 1	Half-term 2	Half-term 3	Half-term 4	Half-term 5	Half-term 6
Year 12 Applied science	Principles and applications of Biology	Practical procedures and techniques of colorimetry, calorimetry and calibration	Principles and applications of chemistry	Practical procedures and techniques of titration and chromatography	Principles and applications of Physics	Practical procedures and techniques of laboratory safety
Year 12 Biology	Cell biology	Biological Molecules	Organisms Exchange substances with their environment	Genetic information and variation	Ecosystems	Relationships between organism
Year 12 Chemistry	Atomic structure chemical Bonding	Amount of substance Kinetics	Energetics Organic chemistry and alkanes	Redox and inorganic chemistry groups Halogenoalkanes and alkenes	Le Chatelier's principle Alcohols	Gaseous equilibrium Organic analysis
Year 12 Physics	Electricity Measurement and their errors	Waves Materials	Mechanics Particles	Energy and momentum Quantum physics	Practical physics	Periodic motion Circular motion
Year 13 Applied science	Planning investigation	Recording and interpreting data	Analysing findings	Evaluating findings		
Year 13 Biology	Energy transfers in	Organisms respond to changes in their	Genetics, populations, evolution	Control of gene expression	Health and physiology	



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	and between organisms	internal and external environment	and ecosystems			
Year 13 Chemistry	Acids and Bases Rate Equations	Thermodynamics Organic Oxygen compounds	Electrode potentials Organic rings and nitrogen compounds	Transition metal chemistry Organic synthesis, NMR and chromatography		
Year 13 Physics	Thermal physics Fields	Nuclear physics Capacitance	Nuclear energy Magnetic fields	Optional module		