

Curriculum intent statement for Science

We aim to develop all students into scientists who:

- have opportunities to indulge their natural curiosity for science leading to a lifelong passion
- are scientifically confident and skilled learners with potential for embarking upon STEM-based careers
- have a broad and deep knowledge of the sciences through immersion in our engaging spiral curriculum

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7						
Biology		B1 - Cells	B2 - Tissues and Organs			B3 - Digestion
Chemistry	C1 - Particles			C2 - Elements, compounds & mixtures		
Physics	P1 - Forces	P2 - Pressure P1 - Forces			P3 - Electricity P4 - Magnets	
Projects	Introduction to Science		STEM Project 1			
Skills	- Using models to represent particles and changes of state - Chromatography of liquids - select, plan and carry out the most appropriate types of scientific enquiries to test predictions, - use and derive simple equations and carry out appropriate calculations	- Using an equation - Working scientifically: drawing conclusions, identifying and classifying, observing	- Working scientifically: drawing conclusions, identifying and classifying, observing	- Using models to represent particles and changes of state	- present observations and data using appropriate methods, including tables and graphs	- make and record observations and measurements
Links	NC: Working Scientifically NC: The particulate nature of matter NC: Atoms, elements and compounds NC: Pure and impure substances NC: Describing motion NC: Forces NC: Pressure in fluids NC: Balanced forces NC: Forces and Motion Cross-curricular - Technology (analysis and evaluation) Year 7 HT5	NC: Pressure in fluids NC: Cells and organisation	NC: Working Scientifically NC: Cells and organisation NC: The skeletal and muscular systems NC: Gas exchange systems NC: Working Scientifically	NC: The particulate nature of matter NC: Atoms, elements and compounds NC: Working Scientifically	NC: Current Electricity NC: Static Electricity NC: Magnetism NC: Working Scientifically Curriculum links: Computing (KS4) Hardware / software data representation / circuits	NC - Nutrition and digestion NC - Health NC: Working Scientifically Cross-curricular - Food technology (health and nutrition) Year 7 HT1

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 8						
Biology		B4 - Reproduction	B6 - Energy in Ecosystems B5 - Ecosystems			B7 - Health & Lifestyle
Chemistry	C3 - Reactions C4 - Periodic Table					
Physics				P5 - Energy	P6 - Light and Sound	
Projects						STEM Project 2
Skills	- present observations and data using appropriate methods, including tables and graphs	- make and record observations and measurements - ask questions and develop a line of enquiry based on observations of the real world	- interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions - present observations and data using appropriate methods, including tables and graphs - apply sampling techniques.	- interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions	- interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions	- make and record observations and measurements - Working scientifically: drawing conclusions, identifying and classifying, observing
Links	NC Chemical Reactions NC Energetics NC The Periodic Table NC: Working Scientifically	NC - Reproduction in animals, menstrual cycle and birth	NC: Photosynthesis NC - Interdependence in ecosystems NC - Reproduction in plants NC - Interdependence in ecosystems Curriculum links: Geography (year 7 term 1) tropical rainforest ecosystems	NC: Particles and energy stores NC: Working Scientifically	NC: Observed Waves NC: Sound Waves NC: Energy and Waves NC: Light Waves NC: Working Scientifically	NC - Nutrition and digestion NC - Health NC: Working Scientifically

	Autumn 1	Autumn 2		Spring 1	Spring 2	Summer 1	Summer 2	
Year 9 (2018 intake)								
Biology	Adaptation and Inheritance		G C S E	AQA GCSE Biology 1 + 2			AQA GCSE Biology 3	
Chemistry	Metals, Acids and Alkalis	Metals, Acids and Alkalis			AQA GCSE Chemistry 1 + 2			
Physics						AQA GCSE Physics 1 + 3		
Skills	<ul style="list-style-type: none"> - interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions - present observations and data using appropriate methods, including tables and graphs - apply sampling techniques. 	<ul style="list-style-type: none"> - Development of scientific thinking - Experimental skills + strategies - Analysis and Evaluation - Scientific vocabulary, quantities, units, symbols + nomenclature 		<ul style="list-style-type: none"> Microscopy Rearranging and applying formula Predicting, measuring, recording and drawing conclusions Evaluating 	The structure, history and development of the atom and periodic table.	<ul style="list-style-type: none"> -Inputting numbers into calculations -Rearranging equations -Using correct SI units - Scientific literacy (quality long answer questions) - Global environmental issues awareness. - Evaluation of Energy generation methods 	<ul style="list-style-type: none"> - interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions - Analysis of the effect of temperature and pH on enzyme action 	
Links	NC: relationships in an Ecosystem NC: Photosynthesis NC: Working Scientifically NC Chemical Reactions NC: Observed Waves NC: Sound Waves NC:Energy and Waves NC: Light Waves NC: Photosynthesis NC: Working Scientifically Cross-curricular - Maths (Measuring angles) Year 9 HT3	NC / AQA SC working scientifically Curriculum links: Philosophy and Ethics (Year 7 HT1) Big questions		NC - Cell biology AQA specification points: 4.1.1.1- eukaryotes and prokaryotes, 4.1.1.2 - animal and plant cells 4.1.1.3 - cell specialisation 4.1.1.4 - cell differentiation 4.1.1.5 - microscopy 1.1.3.1 - diffusion 4.1.3.2 - osmosis 4.1.3.3 - active transport 4.1.2 - cell division Cross-curricular - Maths - Converting measures / units (Year 10 HT4)	AQA spec 4.1 Atomic structure and the periodic table	(AQA SC) 4.1.1.1 - Energy stores and systems 4.1.1.2 - changes in energy 4.1.1.4 - power 4.1.2.2 - Efficiency (AQA SC) 4.1.3 - National and global energy resources Curriculum links: Geography (year 9 term 3) Climate change Maths: Equations and inequalities (year 9 HT4)	AQA Specification 4.2.2.1 The human digestive system	