Year 9 Science Curriculum Map 2023-2024

Year 9	Autumn 1 (7 weeks)	Autumn 2 (7 weeks)	Spring 1 (5 weeks)	Spring 2 (6 weeks)	Summer 1 (6 weeks)		Summer 2 (7 weeks)
Transition year plan	Preparation for GCSE Curriculum (KS3)		Preparation for GCSE Curriculum (KS3)			Start of GCSE	
Assessment	1.End of topic tests on Energy/Electricity 2.Assessed HW	1.End of topic tests on Organisms/Ecosystem 2.Assessed HW	1.End of topic tests on Atoms/Matter 2.Assessed HW	1.End of topic tests on Waves/ Chemical reactions 2.Assessed HW		1.End of topic tests on Topic 1: Cells 2. Assessed HW	1.End of topic tests on Topic 2: Organisation 2. Assessed HW
Skills and AOs	AO1, AO2 and AO3 Scientific Attitudes Experimental skills and investigations Analysis and evaluation Measurement	AO1, AO2 and AO3 Scientific Attitudes Experimental skills and investigations Analysis and evaluation Measurement	AO1, AO2 and AO3 Scientific Attitudes Experimental skills and investigations Analysis and evaluation Measurement	AO1, AO2 and AO3 Scientific Attitudes Experimental skills and investigations Analysis and evaluation Measurement	Year 9 Exam	AO1, AO2 and AO3 Scientific Attitudes Experimental skills and investigations Analysis and evaluation Measurement	AO1, AO2 and AO3 Scientific Attitudes Experimental skills and investigations Analysis and evaluation Measurement
Topic	Physics Conservation and dissipation of energy: Changes in energy stores Energy and work Gravitational potential energy Kinetic energy Energy Efficiency	Chemistry Atomic structure & separation Techniques: Separating mixtures Ions, atoms & isotopes History of the atom Required Practicals Paper chromatography Simple distillation Crystallisation	Chemistry The Periodic Table: Development of the periodic table Group 1 – the alkali metals Group 7 – the halogens Group 0 – Noble gases	Physics Molecules and matter: Density Internal energy Specific latent heat Gas pressure & temperature Required Practical Density of regular & irregular objects	Year 9 Exam	Physics: Radioactivity Atoms and radiation Alpha, beta & gamma radiation Activity & half-life	Chemistry Structure and bonding: States of matter Ionic bonding Covalent bonding Metallic bonding Structure of molecules
	Biology Cell Biology & Diffusion: Plant & Animal Cells Specialised Cells	Physics Energy Transfer by Heating: Energy transfer by conduction	Biology Human Organisation – Digestion, Enzymes & Food Tests:	Biology Human Organisation – circulatory system, respiratory system &		Biology Communicable Diseases Pathogens & diseases	Biology Preventing and treating disease Vaccination

	Diffusion	Specific heat capacity	The human digestive	non communicable		Viral diseases	Antibiotics &	
	Osmosis	Required Practical	system	diseases		Bacterial diseases	painkillers	
	Active transport	 Specific heat 	The chemistry of food	Blood & blood vessels		Diseases caused by	Discovering	
	Stem Cells	capacity	Enzymes	The heart		fungi & protists	drugs	
	Required Practicals		Required Practicals	Breathing & gas		Human defence	Developing	
	 Onion cell 	Physics	Food tests	exchange		responses	drugs	
	microscopy	Energy Resources:	 Enzymes rate of 	Non-communicable				
	 Diffusion in agar 	Renewable energy	reaction	diseases				
	 Osmosis in potatoes 	Non-renewable energy		Cancer				
				Smoking, diet &				
				alcohol				
	End of Topic tests		End of Topic tests		Summary	End of Topic tests		
					of Autumn			
e de la la companya de la companya d	· ·	Extended response exam questions (literacy, Extended response exan			and Spring	Extended response exam questions		
Enrichment	numeracy, analysis skills)		numeracy, analysis skills)		learning	(literacy, numeracy, analysis skills)		
opportunities								
	AFL in	lessons	AFL in lessons			AFL in lessons		
Skills and AOs	To develop scientific knowledge and conceptual understanding through the specific disciplines of Biology, Chemistry, and Physics. Develop understanding of							
	the nature, processes, and methods of science through different types of science enquiries that help students to answer scientific questions about the world							

around them. To be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future. Students should be able to: Pay attention to objectivity and concern for accuracy, precision, repeatability, and reproducibility, to understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review and evaluate risks. Gain Experimental skills and process investigations as well ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge, and experience, make predictions using scientific knowledge and understanding, select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety, make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements, apply sampling techniques. Students should apply the skills required for analysis and evaluation, apply mathematical concepts and calculate results, present observations and data using appropriate methods, including tables and graphs, interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions, present reasoned explanations, including explaining data in relation to predictions and hypotheses and evaluate data; showing awareness of potential sources of random and systematic error. Students will need to understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature, use and derive simple equations and carry out appropriate calculations and undertake basic data AO1: Demonstrate knowledge and understanding of scientific ideas; scientific techniques and procedures. AO2: Apply knowledge and understanding of scientific ideas; scientific enquiry, techniques, and procedures. AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.