

<u>SCIENCE</u> Curriculum Plan - Whole Academy

PRIMARY	KEY STAGE 3	KEY STAGE 4	KEY STAGE 5

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PRIMARY

Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
EYFS	All About Me: Our bodies and how they work			Spring in our Step: Life cycles		Science Detectives: What is science?
1	Plants	Seasonal changes	Everyday materials	Consolidation and review	Identifying and naming different types of animals	Humans: body parts and our senses
2	Needs of animals	Uses of everyday materials	Living things & their habitats	Plant growth	Solids, liquids and gases	Consolidation and review
3	Rocks and fossils	Light	Living organisms: muscles and skeletons, and nutrition	Flowering plants	Forces & motion	Friction & magnetism
4	Classifying organisms	Food & digestion	Particle model and states of matter	Sound	Electricity	Properties of materials
5	Separating mixtures	Energy	Life cycles of animals	Human development	Forces	Earth and space
6	Electricity	Evolution	Light	Classification of living things	Functions of the human body: the circulatory system	Physical and chemical changes

KEY STAGE 3

SUBJECT	1 st Half of the year (Sep – Feb)	2 nd Half of the year (Feb – July)
7	 Intro into Science Particles, substances and mixtures 7.01 Fundamentals of physics 7.02 Cells and organisation 7.03 Chemical changes 7.04 	 Organ systems 7.05 Sound and light 7.06 Materials 7.07 Life cycles 7.08
	Mid-Year Assessment: Assessment to include content covered in 7.01, 7.02, 7.03 and 7.04	End of Year Assessment : 3 x 30 minute papers Biology: 7.03, 7.05 Chemistry: 7.01, 7.04, 7.07 Physics: 7.02, 7.06
	 The Periodic table (8CP) Sound Waves (8PS) Light and Space (8PL) Digestion and Nutrition (8BD) Materials and the Earth (8CM) 	 Electricity and Magnetism (8PE) Matter (8PM) Ecological relationships and classification (8BE)
8	Mid-Year Assessment: Assessment to include content covered so far this year, as well as content covered in Year 7	End of Year Assessment : 3 x 30 minute papers Biology: 8BD, 8BE (as well as Biology content covered in Year 7) Chemistry: 8CP, 8CM (as well as Chemistry content covered in Year 7) Physics: 8PS, 8PL, 8PM (as well as Physics content covered in Year 7)
9	 Forces in Action (9PF) Energetics and Rates (9CE) Plants, photosynthesis and respiration (9BP) Cell Biology Atomic Structure Mid-Year Assessment: Assessment can cover any	 Bonding Changes in Energy Stores Transport in cells Energy Transfer & The Particle Model Organisms and Disease End of Year Assessment: Assessment can cover any content
	content covered in KS3	covered in KS3

<u>KEY STAGE 4</u>

SUBJECT	1 st Half of the year (Sep – Feb)	2 nd Half of the year (Mar – July)
10	 Infection and Response Electricity The Periodic Table Generating Electricity Quantitative Chemistry Chemical Changes and Energy Changes 	 Reactions in Biology Nuclear Radiation Organic Chemistry Ecology Forces
	Mid-Year Assessment: AQA GCSE Chemistry Paper 1	End of Year Assessment: AQA GCSE Biology Paper 1 AQA GCSE Chemistry Paper 1 AQA GCSE Physics Paper 1

SUBJECT	September – December	January – February	March – June
	 Forces and Motion 	Inheritance	Magnetism
	Rates of Reaction	Waves	Revision for GCSEs
	Chemical Analysis	Earth and Resources	
	Controlling Conditions		
11	November Mock Exam:	March Mock Exam:	ACTUAL GCSE EXAMINATION
	AQA GCSE Biology Paper 1	AQA GCSE Biology Paper 2	
	AQA GCSE Chemistry Paper 1	AQA GCSE Chemistry Paper 2	
	AQA GCSE Physics Paper 1	AQA GCSE Physics Paper 2	

KEY STAGE 5: Biology

SUBJECT	1 st Half of the year (Sep – Feb)	2 nd Half of the year (Feb – July)
	Section 1: Biological molecules	Section 3: Organisms exchange substances with their environment
	Biological molecules	Exchange
	Nucleic Acids	Mass transport
	Section 2: Cells	Section 4: Genetic information, variation and relationships between
	Cell structure	organisms
12	 Transport across cell membranes 	 DNA, genes and protein synthesis
	 Cell recognition and the immune system 	Genetic Diversity
		Biodiversity
		Section 6: Organisms respond to changes in their environment
		Response to stimuli
	Mid-Year Assessment: Chapters 1-4	End of Year Assessment: AQA AS Biology Paper 1 & Paper 2

SUBJECT	September – November	December – March	April – June
	Section 6: Organisms respond to changes in	Section 5: Energy transfer in and between	Section 8: The control of gene expression
	their environment	organisms	Gene expression
	 Nervous coordination and muscles 	Respiration	 Recombinant DNA technology
	Homeostasis	 Energy and ecosystems 	Revision for A-Level
	Section 7: Genetics, populations, evolution and	Section 7: Genetics, populations, evolution	
42	ecosystems	and ecosystems	
13	 Inherited Changes 	 Populations and Ecosystems 	
	Section 5: Energy transfer in and between	 Populations in ecosystems 	
	organisms		
	 Photosynthesis 		
	November Mock Exam: AQA A-Level	March Mock Exam: AQA A-Level	ACTUAL A LEVEL EXAMINATION
	Biology Paper 1 & 2 (part of)	Biology Paper 1, 2 & 3	

KEY STAGE 5: Chemistry

SUBJECT	1 st Half of the year (Sep – Jan)	2 nd Half of the year (Jan-July)
12	 Physical chemistry 1 Atomic Structure Bonding Amount of Substance Inorganic chemistry 1 Periodicity Energetics Organic chemistry 1 Introduction to Organic Chemistry 	Organic Chemistry 1 • Alkanes, Alkenes and Alcohols • Organic Analysis • Group 2 & Group 7 Physical chemistry 2 • Kinetics • Equilibrium • Thermodynamics • Oxidation and Reduction Organic chemistry 2 • Nomenclature and optical isomerism • Aldehydes and Ketones
	Mid-Year Assessment: Atomic Structure, Bonding, Amount of Substance	End of Year Assessment: AQA AS Level Chemistry Paper 1 & Paper 2

SUBJECT	September – November	December – March	March - June
	Organic chemistry 2	Physical chemistry 2	Organic chemistry 2
	 Nomenclature and optical isomerism 	 Electrode potentials and cells 	Chromatography
	 Aldehydes and Ketones 	Acids and bases	Organic Synthesis
	Aromatic Chemistry	Organic chemistry 2	Revision for A-Level
	Carboxylic Aids	 Amines, polymers and amino acids 	
	Physical chemistry 2	• NMR	
13	Thermodynamics	Inorganic chemistry 2	
	Rate equations	 Period 3 elements & oxides 	
	• kP	Transition elements	
		Reactions of ions	
	November Mock Exam: modified AQA	March Mock Exam: AQA A-Level	ACTUAL A LEVEL EXAMINATION
	A-Level Chemistry Paper 1 and Paper 2	Chemistry Paper 1, 2 & 3	

KEY STAGE 5: Physics

SUBJECT	1 st Half of the year (Sep – Jan)	2 nd Half of the year (Jan-July)
	Section 1 Particles & radiation:	Section 2 Waves & Optics:
	Matter & radiation	Waves & Optics
	Quarks and leptons	Optics
	Quantum Phenomena	Electricity
	Section 3 Mechanics & Materials:	Electrical Current
12	Forces in equilibrium	DC Circuits
12	On the move	Section 6 Further Mechanics & Thermal Physics:
	 Newton's laws of motion 	Motion in a circle
	Force & Momentum	Simple Harmonic Motion
	 Work, Energy & Power 	Thermal Physics
	Materials	Gases
	Mid-Year Assessment: Section 1 and 3	End of Year Assessment: AQA AS Paper 1 and Paper 2

SUBJECT	September – November	December – March	March - June
	Section 7 Fields:	Section 7 Fields:	Revision for A-level assessments
	Gravitational fields	Capacitors	
	Electric fields	Magnetic Fields	
	Capacitors	Electromagnetic induction	
	Section 8 Nuclear Physics:	Section 9 One from the following optional	
40	Radioactivity	modules:	
13	Nuclear Energy	Astrophysics	
		Medical Physics	
		Engineering	
		Turning Points	
	November mock: AQA A-level Physics	March Mock Exams: AQA A-level	ACTUAL A LEVEL EXAMINATION
	Papers 1 & 2 (edited)	Physics Papers 1,2 & 3	