

Curriculum Progression Map - Science

Long-term planning grid (based on AQA Activate units)										
Key Stage 3 – Year 1	Duration	Approx 2	8 weeks	2 weeks	3 weeks	3 weeks	6 weeks	5 weeks	3 weeks	3 weeks
	Topic	Working scientifically (& KS2 review)	Particle Model	Variation	Energy	Waves	Chemical reactions	Organisms	Electromagnets	Reproduction
Key Stage 3 – Year 2	Duration	Approx 2	5 weeks	3 weeks	3 weeks	6 weeks	6 weeks	5 weeks	6 weeks	
	Topic	A Working scientifically (recap)	Forces	The Earth	Waves 2	Matter 2	Organisms 2	Chemical reactions 2	Ecosystems	
Key Stage 3 – Year 3	Duration	4 weeks	4 weeks	5 weeks	6 weeks	4 weeks	5 weeks	8 weeks		
	Topic	Electromagnets 2	Energy 2	Genes 2	Forces 2	The Earth 2	Ecosystems 2	GCSE/BTEC Prep and/or Investigation skills development projects and/or Revisit areas of weakness		

KS3 purpose

Students engaged and interested in science → inspired → make progress in learning

*Curiosity
Asking the right questions
Scientific process
Investigative skills*

A sound understanding of the core scientific knowledge (Big ideas in science)

Key Concepts, Skills and Knowledge																																				
Wk	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Key Stage 3 – Year 1	Topic	Working scientifically (& KS2 review)							Particle Model							Energy					Waves					Reactions					Electromagnets					
	Knowledge and skills	Are students secure in KS2 pre-requisite knowledge and skills? Develop skills on planning, measuring, recording, presenting and analysing data Use data to support or refute an idea or argument Working scientifically: planning investigations							Understand the structure of cells and the function of the cell organelles Understand and describe the process of reproduction Describe the changes in the human body during puberty Scientific skill: evaluate and apply evidence							Use the particle model, atomic structure and the period table to explain material properties Maths: simple addition and subtraction of protons and neutrons Working scientifically: observation and making conclusions Scientific skill: use evidence to support or refute ideas or theories					Describe how energy is transferred between different stores using common examples Compare and contrast difference energy resources such as wind power Maths: substituting into equations Scientific skill: evaluate and apply evidence					Understand the difference between organ systems, organs and tissues Explain the working of the circulatory and digestive systems Maths: scales Scientific skill: use evidence to support or refute ideas or theories					Describe different forces in different scenarios Explain the effect on objects of different forces Maths: rearranging equations Working scientifically: taking accurate measurements Scientific skill: use evidence to support or refute ideas or theories					
	Misconceptions	The purpose of scientific thinking Accurate measurements (common errors) Control variables							What cells are Where babies come from Effects of puberty especially the menstrual cycle							Differences between atoms, elements, compounds, mixtures and cells from previous topic Interpreting the periodic table					How a turbine works Application of the law of conservation of energy What energy is (as an abstract concept)					What respiration is When digestion takes place Acid digests food					Mass and weight are the same Balanced forces mean stationary only motion Force arrows represent motion Working scientifically: planning investigations					
	Assessment	Initial low stakes quizzes on KS2 content Practical skills observation assessment Assessment of KS2 and working scientifically							End of unit assessment							End of unit presentation					Joule island group task					Unit assessment					End of year assessment					
	KS2 links	Overview of core knowledge Working scientifically points a-d							Biology point a, b and g							Chemistry points a, c and d Working scientifically d					None					Biology point d and e					Physics points l, j and k Working scientifically points a - c					

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Key Stage 3 – Year 2	Topic	Chemical changes							Plants and ecosystems							Earth and atmosphere					Inheritance and variation					Waves					Electricity					
	Knowledge and skills	Describe the different types of chemical reactions Explain what is happening in the different type of chemical reactions Maths: ratios to balance equations Working scientifically: planning investigations Scientific skill: problem solving to explain observations							Explain how plants make food through photosynthesis Describe and explain the factors that affect photosynthesis Explain the interdependence of different Scientific skill: evaluate and apply evidence							Explain the structure of the Earth Describe the different rock types and explain their creation using the rock cycle Describe the properties of the Earth's atmosphere Maths: ratios Scientific skill: evaluate and apply evidence					Understand the relevance of genetics and DNA in inheritance Explain how these ideas are used to explain extinction and evolution Scientific skill: use evidence to support or refute ideas or theories					Use observations of light and sound wave to explain their properties Scientific skill: problem solving to explain observations Working scientifically: observation and making conclusions					Describe static electricity Describe how electrical circuits work Explain magnetism and electromagnetism Maths: rearranging equations Scientific skill: modelling circuits Working scientifically: taking accurate measurements					
	Misconceptions	Conservation of mass during a reaction What happens after a reaction							Plants eat food Plants use up soil							The layers of the Earth Plate tectonics and continental drift					Theory of evolution vs religion How genes are inherited through reproduction					Waves transmit matter Behaviour and properties of sound Sound does and light does not require a medium					What electricity is Models of electrical current, voltage and resistance					
	Assessment	Practical assessment							End of unit assessment							Poster assessment					End of unit presentation					Unit assessment					End of year assessment					
	KS2 links	Chemistry point f Working scientifically points a-c							Biology point f							Chemistry points e and f Working scientifically d					Biology points a, f and g Working scientifically d					Physics point a and b					Physics points c and d					

