

Year 9: Physics

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	KS3 Transition: Review of the basic principles in physics of circuits, magnets, space, forces and waves. How Science works practical (skills). Focus: Using formulas, Technical language. Practical skills including planning, conducting, and analysing an experiment.		P1 Energy: Energy Stores, energy transfers and using equations. Efficiency, conduction, insulation; and types of energy resources. Focus: teaching and embedding how to use equations to solve energy problems. evaluation skills regarding efficiency of appliances and worldwide energy resources.		TBA	TBA
Assessments	Assessment based on two substantive knowledge and Practical skills knowledge (based on understand the principles of conducting scientific experiments and analysing data)		End of topic assessment based on content and skills covered in P1 only involving single step calculations.			20-30 minute classroom assessment on content/skills covered in P1 including standard and higher demand questions.
Building on Prior Learning	Substantive Knowledge – From KS2/3 students will review their knowledge of basic scientific principles. They will consolidate these ideas, address misconceptions, and fill in gaps from previous years. Disciplinary/procedural Knowledge – Students will develop their ability to use equations in performing basic calculations with those who make most progress moving to more complex, changing the subject and multi-step calculations. Practical skills will be enhanced, focusing on planning skills, implementation of practical skills and using scientific language to discuss and analyse results obtained.					
Cultural Capital	There is cultural capital in abundance in this programme of study: Students will learn about electrical circuits and how they work in real-life situations including the uses of earth wires and fuses within their homes. They will understand how the Earth’s tilt results in the changing seasons and how forces such as, gravity, impact the world around them. Students will learn about Earth and its place in the galaxy, including its rotation around the sun and the impact on the Earth’s atmosphere.					
Mastery	In terms of mastery students will be given opportunities to apply their Physics knowledge through increasingly varied and complex contexts & scenarios. After initially being shown how to use equation triangles and change the subject of equations, students will be given a range of opportunities to demonstrate their ability, both in lesson and through formative and summative assessments. They will embed scientific language into their writing when planning, analysing and evaluating the results of practical experiments.					
Development of Character	A wide range of virtues are covered through the teaching of Physics: Students will develop a curious mind and build resilience when tackling difficult or complex problems. They will be being to understand the importance of collaborative working and honesty regarding the development and acceptance of new ideas.					
Extra-Curricular opportunities	In School: STEM Club (across all 3 science)					
Metacognitive Learning	Students will be taught to study more independently through the gradual removal of scaffolding across the year regarding scientific problems. They will be guided through teacher/peer feedback to both respond to and set their own targets to help further their progress. Important metacognitive strategies such as, retrieval practice, will be embedding into every lesson to improve long term memory and build resilience regarding subject material.					