

## Year 13 Physics – Outline Programme of Study

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Big ideas/ topics	Further Mechanics	Gravitational Fields Electric Fields Thermal Physics	Capacitance Thermal Physics	Magnetic Field Nuclear Physics	Electromagnetic induction Nuclear physics	Option Module: Turning Points in physics
Key Knowledge	Circular motion and	The orbit of planets and Satellites	Parallel Plate Capacitors	Magnetic flux density	Faraday's Law and Lenz's Law	Cathode rays
	Simple Harmonic Motion	Coulomb's Law Electric Field Strength in uniform	Energy Supported by a capacitor	Moving charges in a magnetic field	Alternating currents and the use of transformers	Thermionic emission of electrons
	Forced Oscillations and	and radial fields Electrical Potential	Capacitor charge and discharge	Magnetic flux and flux linkage	Mass and energy	Specific charge of the electron
	resonance		Thermal energy transfer	Radioactivity	Induced fission	Significance of
			Ideal gases	$\alpha$ , $\beta$ and $\gamma$ radiation Radioactive decay	Safety aspects	Young's double slits experiment
			Molecular kinetic	Nuclear instability		The discovery of
				Nuclear radius		Floatron
				Nuclear radius		microscopes
						Special relativity

## Further information and reading list

- AQA A specification followed
- AQA A Level Physics Student Book 2, Nick England, Jeremy Pollard, Nicky Thomas, Carol Davenport 9781471807763
- Excellent straight forward Textbook: Advanced Physics For You (Advanced for You), Keith Johnson, Simmone Hewett, Sue Holt, John Miller ISBN: 1408527375
- Higher level for able students: Advanced Physics by Steve Adams

Ways to support and extend student learning in this subject

Students who need support or who wish to stretch themselves should come to the weekly support sessions on Friday after school in lab E.

Students who wish to maximise their grades should attempt as my past paper questions as they can from physics and maths tutor.