	The Y11 Physics curriculum aims to complete the GCSE content by working through the last 4 modules, develop practical and mathematical skills and enable students to prepare for the terminal assessments confidently and equip them with the substantive knowledge to enable them to achieve their potential. To allow students to understand how Physics relates to the world that they live in, and how different careers also link to Physics.		
Year 11 Physics	**Term 1 September to December** P8&9 – Energy & Forces and their effects P10 – Electricity and circuits P11 – Static electricity	**Term 2 January to Easter** P12&13 – Magnetism and the motor effect & Electromagnetic induction P14&15 – Particle model & Forces and matter	**Term 3 April to July** Revision and preparation for terminal exams
Knowledge (facts, information, concepts and key terminology)	Recall energy stores and transfers, energy transfer (Sankey) diagrams and efficiency; recall the law of conservation of energy. Learn equations for work done, power, Gravitational Potential Energy and Kinetic Energy. Name contact and non-contact forces. Draw free body force diagrams and vector diagrams; revisit resultant forces. Rotational effects of forces – moments, levers and gears. Draw and analyse circuit diagrams including common components. Recall equations for energy transferred, charge, potential difference and power. Know how current and voltage behave in series and parallel circuits. Describe changes in resistance for LDRs and thermistors. Describe ac and dc circuits. Know features of the UK domestic supply and safety features. Explain electrostatic phenomena in terms of movement of electrons. Draw electric field lines.	Recall key properties of magnetism (attraction/repulsion and magnetic materials). Describe and draw magnetic field lines. Describe how electromagnets are produced and the factors affecting their strength. Use the equation F = B x I x l to calculate magnetic force. Recall the factors that affect the size and direction of an induced potential difference, and describe how the magnetic field produced opposes the original change. Describe how the National Grid works in terms of ac supply and transformers. Use the power equation. Describe uses of EM induction in alternators (ac) and dynamos (dc). Use the turns ratio equation for transformers. Describe the states of matter and transitions between them in terms of particle arrangement and movement. Recall and use the density equation. Describe the terms specific heat capacity and specific latent heat. Use the SHC and SLH equations. Recall gas pressure laws and convert between ^{0}C and K scales. Use Boyle's Law equation. Explain elasticity in terms of Hooke's law and elastic energy – use of equations. Describe and explain changes in pressure with height and depth in fluids; use the pressure equation. Explain factors affecting whether objects float or sink.	Revision based lessons to recap Knowledge including Yr 10 material and specific gaps identified by EOU Assessments
Understanding (ability to connect and synthesise knowledge within a context)	Determine useful and wasted energy in the context of conservation of energy; apply the efficiency equation. Link ideas of forces and energy together using equations in unfamiliar contexts. Explain safety features in electrical circuits. Explain uses of electrostatic charges.	Explain the difference between permanent and induced magnets. Connect ideas from electricity and magnetism to explain how electromagnets work. Explain that magnetic forces are due to interactions between magnetic fields. Use and rearrange the magnetic force equation. Explain how the force on a conductor in a magnetic field is used to cause rotation in electric motors. Explain how transformers work in the National Grid. Explain how microphones, loudspeakers and headphones work. Explain the differences between physical and chemical changes, and between SHC and SLH. Explain gas pressure laws. Explain why doing work on a gas can increase its temperature. Explain why the pressure in liquids varies with density and depth; use the pressure in liquids equation.	Revision based lessons to recap Knowledge including Yr 10 material and specific gaps identified by EOU Assessments
Skills (successful application of knowledge and understanding to a specific task)	Perform calculations for work done, power, efficiency, GPE and KE. Link equations in the context of energy transfers. Use vector diagrams to illustrate resolution of forces, a net force, and equilibrium situations. Core Practical in Electricity - resistance in filament lamps and resistors.	Recall and use Fleming's left-hand rule to represent the relative directions of the force, the current and the magnetic field. Construct an electric motor. Practise ratio calculations; explain use of step-up and step-down transformers using the power equation. Core Practical – density of liquids and solids. Core Practical – specific heat capacity of water and obtaining a temperature-time graph for melting ice. Core Practical – Hooke's Law. More complex calculations – differences in pressure at different depths in a liquid.	Repetition of Core Practicals to practise calculations, data analysis and evaluation skills
Formal Assessments	End of unit assessments for P8&9, P10 and P10&11. Paper 1 Mock in November.	End of unit assessments for P12&13 and P14&15. Combined Paper 1 and Paper 2 Mock in February/March.	External Examination

By the end of the year students on course for at least a grade 5 will…

- Link ideas between forces and energy; determine which equation to use depending on context.
- Identify and analyse information in graphical format with regards to electricity and the particle model.
- Describe scientific phenomena using the particle model of physics.
- Describe the energy changes involved in the generation of electricity and how this is transported to homes.
- Recall and apply key quantities and units
- Recall and apply key equations, rearranging where necessary.