The English Martyrs Catholic School and Sixth Form College

Physics Year 13 - A	Module 1	Module 2	Module 3
Topic Theme and Intent	The students will learn about **Thermal Physics** and **Gravitational Fields**. The thermal physics topic delves into how substances change **temperature**, how they change state and the energy changes involved in those. The course then moves to looking at **gravitational fields**, what can affect them and how **satellites** and **orbits** work.	The students will learn about **Electric Fields** and **Capacitors**. This module looks in more detail at uses of electricity, focusing on electromagnetic phenomena and using electricity. This will enable students to design electrical circuits to fulfil particular criteria.	In this module students consolidate their learning and revise **key concepts** in the build up to their exams. Students look as **specific areas** identified in the mocks as weaknesses and complete broader revision of specific topics identified on an **individua**l basis.
Knowledge	• Thermal energy transfer • Gas laws • Ideal Gases • Kinetic energy • Gravitational fields and potential • Orbits	• Electric fields and potential • Capacitors • Magnetic flux and the motor effect • Flux linkage • Electromagnetic induction. • Faraday's law and Lenz's law.	• Particles • Mechanics • Fields • Capacitors • Required practicals
Skills	Students will prove gas laws by empirical observation and analysis of data.	Students will measure characteristics of capacitors, forces on wires in a magnetic field and measure magnetic fields.	Students practice their exam technique to better prepare them for their exams., focusing on command words.
Literacy Links	**Reading –** Students will read about the application of gravitational laws to space engineering. **Writing –** Students start to communicate scientific ideas and concepts through writing. **Oracy –** Students start to use scientific vocabulary in discussion and question and answering.	**Reading –** Students will read about the application of electrical theory in the world around them. **Writing –** Students practise communicating scientific ideas and concepts through writing. **Oracy –** Students practise the use scientific vocabulary in discussion and question and answering.	**Reading –** Students will read about the key topics they have studied. **Writing –** Students will communicate scientific ideas and concepts through writing. **Oracy –** Students use scientific vocabulary in discussion and question and answering.
Essential Vocabulary	Charles' law, Boyle's law, Gravitational field, Gravitational potential, orbit, period, elipse.	Capacitor, Dielectric, Time constant, Magnetic flux density, Motor effect, Induction, Faraday's law, Lenz law	Particles, Mechanics, Fields, Capacitors

Disciplinary Reading	Reading for Pleasure		
CGP Books – A level Physics, & Oxford Revise A level Physics.	C. Orzel - How to teach Quantum Physics to your dog	H. Fry - Hello World	C. Dalcher - Vox