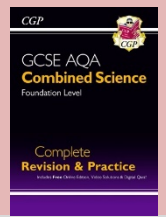
The English Martyrs Catholic School and Sixth Form College

Physics Year 10	Module 1	Module 2	Module 3
Topic Theme and Intent	Students learn about **Electricity.** They will look at the **flow** of electrical **current** through **circuits** and various **components**. They will consider the relationships between **current, voltage and resistance** and how they vary through **series** and **parallel** circuits. They will consider the use of electricity in the **home** and how it is supplied.	Students learn about the **Particle Model of Matter** to describe the **densities** of substances and the different **states of matter**. They consider the link between state of matter and **internal energy**, and the **latent energy** needed to cause changes in state.	Students learn about **Atomic Structure** and the behaviour of atoms. This topic focuses on the development of models for the atom over time. It also looks at the natural phenomenon of **nuclear radiation** and considers the use of nuclear **fission and fusion** in the modern world.
Knowledge	• Circuits • Current, PD, Resistance • Series and Parallel Circuits • Electricity in the Home • The National Grid	• Density and States of Matter • Internal energy and change of state • Specific Latent Heat • Particle motion in gases	• The structure of the atom • Types of radiation and nuclear equations • Radioactive decay and ½ life • Fusion and fission
Skills	Students will investigate factors affecting resistance, and the resistance in series and parallel circuits.	Students will investigate the densities of solid objects and liquids.	Students will observe the measurement of radioactivity and analyse data to identify half-life.
Literacy Links	**Reading –** Students will read about the supply of electricity via the National Grid. **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 density. **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 safe use of nuclear radioactivity. **Writing –** Students will communicate scientific ideas and concepts through writing. **Oracy –** Students use scientific vocabulary in discussion and question and answering.
Essential Vocabulary	Electricity, circuits, components, current, voltage, potential difference, resistance, series, parallel, the National Grid.	Particle Model of Matter, density, states of matter, internal energy, specific latent heat, motion.	Proton, Neutron, Electron, Alpha particle, Beta, Gamma, Decay, half-life, Fission, Fusion.

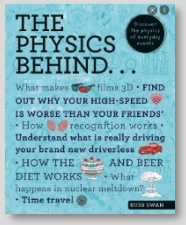
Disciplinary Reading

CGP Books – GCSE Science COM and SEP, & Oxford Revise COM and SEP.

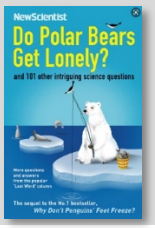


Reading for Pleasure

R. Swan - The Physics Behind



New Scientist - Do Polar Bears get Lonely?



B. Cox – Human Universe: Forces of Nature