

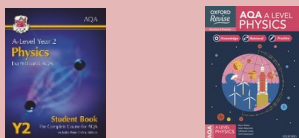
The English Martyrs Catholic School and Sixth Form College



<u>Physics Year 13 - B</u>	<u>Module 1</u>	<u>Module 2</u>	<u>Module 3</u>
<u>Topic Theme and Intent</u>	The students will learn about Nuclear Physics . The topic builds on work at GCSE and looks in more detail at the process of radioactive decay and the application of fusion and fission reactors. Studying this topic will enable students to analyse the dangers and advantages of using atomic energy sources.	The students will learn about the turning points in Physics. During this module the students will consider the key experiments and thinking that have driven changes to the way we think about physics. This will allow students to better understand physics as an evolving subject and stimulate them to go on to further study.	In this module students consolidate their learning and revise key concepts in the build up to their exams. Students look at specific areas identified in the mocks as weaknesses and complete broader revision of specific topics identified on an individual basis.
<u>Knowledge</u>	<ul style="list-style-type: none"> Rutherford scattering Physical properties of the nucleus Nuclear radiation Decay and half life Mass defect and binding energy Fission and fusion 	<ul style="list-style-type: none"> Electrons Milikan's Oil Drop experiment Light – Newton vs Huygens Wave particle duality Michelson-Morley experiment Special relativity 	<ul style="list-style-type: none"> Waves Electricity Materials Nuclear physics Turning points Required practicals
<u>Skills</u>	Students will investigate inverse square law for radioactive emissions.	Students will analyse experimental data and interpret how it supports changes in physical understanding.	Students practice their exam technique to better prepare them for their exams. They focus on command words.
<u>Literacy Links</u>	<p>Reading – Students will read about the use and dangers of using radioactivity.</p> <p>Writing – Students start to communicate scientific ideas and concepts through writing.</p> <p>Oracy – Students start to use scientific vocabulary in discussion and question and answering.</p>	<p>Reading – Students will read about the great experiments in the history of physics.</p> <p>Writing – Students practise communicating scientific ideas and concepts through writing.</p> <p>Oracy – Students practise the use of scientific vocabulary in discussion and question and answering.</p>	<p>Reading – Students will read about the key ideas they have covered.</p> <p>Writing – Students practise communicating scientific ideas and concepts through writing.</p> <p>Oracy – Students practise the use of scientific vocabulary in discussion and question and answering.</p>
<u>Essential Vocabulary</u>	Density, radius, Decay, scattering, half life, Mass defect, Binding energy, Fission, Fusion.	Milikan's oil drop, Huygens, Photoelectric effect, Wave-particle duality, Electron microscopes, Special relativity, Length contraction, time dilation	Waves, Electricity, Materials, Nuclear physics, Turning points, Required practicals

Disciplinary Reading

CGP Books – A level Physics, & Oxford Revise A level Physics.



Reading for Pleasure

B. Cox and J. Forshaw - The Quantum Universe



S. Hawking - A Brief History of Time



C. Rovelli – Heigoland

