



## PLUME ACADEMY - LEARNING OVERVIEW

Year	13
Course	OCR Physics A - AS Level
Specification Number/Exam Board	H556 - OCR
Examination Papers and Weighting	Modelling Physics (37%) Exploring Physics (37%) Unified Physics (26%)

### Prior Learning

The course builds on prior learning by a content-led approach. A flexible approach where the specification is divided into topics, each covering different key concepts of physics. As learners progress through the course, they will build on their knowledge of the laws of physics from GCSE and AS Level, applying their understanding to solve problems on topics ranging from sub-atomic particles to the entire universe. For A level only, the Practical Endorsement will also support the development of practical skills.

### Curriculum Intent – What are the curriculum aims?

OCR's A Level in Physics A specification aims to encourage learners to:

- develop essential knowledge and understanding of different areas of the subject and how they relate to each other.
- develop and demonstrate a deep appreciation of the skills, knowledge and understanding of scientific methods.
- develop competence and confidence in a variety of practical, mathematical and problem-solving skills.
- develop their interest in and enthusiasm for the subject, including developing an interest in further study and careers associated with the subject.
- understand how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society.

### Curriculum Implementation – What will my child be learning?

The subject uses a two-teacher approach where each teacher will teach separate topics.

Modules 1 and 2 are taught and then used throughout the length of the course as part of the ongoing Practical Endorsement across the two years.

Term 1	Half Term 1	Module 5 – Oscillations Module 5 – Gravitational Fields
	Half Term 2	Module 6 – Electric Fields Module 6 – Nuclear and Particle Physics
Term 2	Half Term 3	Module 5 - Astrophysics Module 6 – Capacitors
	Half Term 4	Module 6 – Electromagnetism Module 6 – Medical Physics



Term 3	Half Term 5	Examination Preparation

### Curriculum Impact – How will my child be assessed and receive feedback?

Learners must complete all components (01, 02, 03 and 04) to be awarded the OCR A Level in Physics A

Modelling physics (01) 100 marks 2 hours 15 minutes written paper

Exploring physics (02) 100 marks 2 hours 15 minutes written paper

Unified physics (03) 70 marks 1 hour 30 minutes written paper

Practical Endorsement in physics (04) (non-exam assessment)

Content is split into six teaching modules:

- Module 1 – Development of practical skills in physics
- Module 2 – Foundations of physics
- Module 3 – Forces and motion
- Module 4 – Electrons, waves and photons
- Module 5 – Newtonian world and astrophysics
- Module 6 – Particles and medical physics

Component 01 assesses content from modules 1, 2, 3 and 5.

Component 02 assesses content from modules 1, 2, 4 and 6.

Component 03 assesses content from all modules (1 to 6).

### Super-Curricular Opportunities – Supporting and Extending Learning

Useful study resources	If a student is really passionate about this subject they can...
<p><b>Revision Guide for the Subject</b> - ideally including past paper exam question practice section or the supporting <u>workbook</u> for the revision guide</p> <p><b>Physics and Maths Tutor Website</b> - Contains a series of past paper exam questions which are split into sections based on topic</p>	<p><b>New Scientist Magazine/Podcast</b> - current articles about science and technology, with many pointers to other science sites.</p> <p><b>Visit to the Science Museum</b></p> <p><b>TED Talks</b> – Ideas about Physics:  <a href="https://www.ted.com/topics/physics">https://www.ted.com/topics/physics</a></p> <p><b><i>A Brief History of Time</i></b> by Stephen Hawking</p> <p><b><i>Why does E=mc<sup>2</sup></i></b> by Brian Cox and Jeff Forshaw</p> <p><b>Physics careers and information:</b>  <a href="http://www.physics.org/">http://www.physics.org/</a></p> <p><b>Smallpiece Trust</b> - summer schools covering subjects like motorsports engineering, astrophysics, design, programming and robotics and many more:  <a href="https://www.smallpeicetrust.org.uk/course-category/momentum/">https://www.smallpeicetrust.org.uk/course-category/momentum/</a></p> <p><b>Headstart</b> – summer schools at universities around the country in many subjects, including Physics, Computer Science and Engineering.  <a href="http://www.etrust.org.uk/headstart/courses">http://www.etrust.org.uk/headstart/courses</a></p>