A Level Physics

Why this subject?

Physicists are the scientists who try to understand and explain how the world works, from the very small – Quantum Physics; to the very large – Astrophysics. The Physics concepts that we study, underpin how many of the everyday items you use in life, such as televisions, smart phones, cars and airplanes. This understanding can be used to drive forward new discoveries and push the development of new technologies.

The A Level Physics course has a mathematical skills requirement of 40% and it is therefore highly recommended that A Level Mathematics is studied alongside Physics. The commonality between the two courses will reduce workload, improve skills

A Level Physics will give you incredibly strong analytical and research skills. You will be able to look at problems and solve them in a methodical and logical way and be able to investigate theories, devise tests and explore new ideas. You will often work on group investigations, which will also build your teamwork and communication skills. Such strong personal and problem-solving skills are highly sought after. In fact, qualifications in Physics and Mathematics are two of the most desirable qualifications for employers.

Course Outline

Year 12

Module 1: Practical Skills: Planning; Implementing; Analysis; Evaluation.

Module 2: Foundations in Physics: Physical quantities and units; Making measurements and analysing data; Nature of quantities.

Module 3: Forces and Motion: Motion; Forces in action; Work, energy and power; Materials; Momentum.

Module 4: Electrons, Waves and Photons: Charge and current; Energy, power and resistance; Elecrical circuits; Waves and Quantum Physics.

Year 13

Module 1: Practical Skills: Planning; Implementing; Analysis; Evaluation.

Module 5: Newtonian World and Astropysics: Thermal physics; Circular motion; Oscillations; Gravitational fields; Astrophysics and cosmology.

Module 6: Particles and Medical Physics: Capacitors; Electric Fields; Electromagnetism; Nuclear and particle physics and Medical Imaging.

Key Information

Exam Board	OCR A / H556
Qualification Type	A Level
Entry Requirements	Grade 7 in GCSE Physics or Grade 7/7 in GCSE Combined Science, together with Grade 7 in Mathematics
Subject Lead	Miss Padfield

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Assessment Outline

Assessment is comprised of three terminal examinations sat in June of Year 13.

Practical Endorsement – This is a teacher assessed component where students complete a minimum of 12 practical activities that cover a range of skills and are applicable in different modules. These are recorded in the practical booklet. This is Module 1 and the content is assessed in all three papers.

Paper 1: Modelling Physics - duration 2h 15min (37% weighting)

This paper assesses content from modules 1, 2, 3 and 5

Paper 2: Exploring Physics - duration 2h 15min (37% weighting)

This paper assesses content from modules 1, 2, 4 and 6

Paper 1 and 2 are comprised of the following sections:

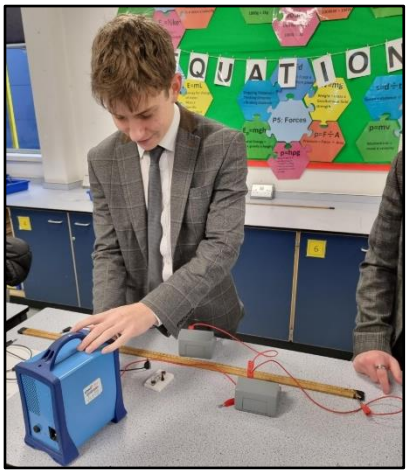
· Section A: Multiple-choice questions (15 marks)

· Section B: Structured and extended response questions, covering theory and practical skills (85 marks)

Paper 3: Unified Physics - duration 1h 30min (26% weighting)

This paper assesses from modules 1 - 6.

· Structured and extended response questions, covering theory and practical skills (70 marks)



Careers and next steps

Physics' use of mathematical skills and problem solving, means that students studying it are in great demand from a wide range of employment areas, both scientific and non-scientific.

Some common scientific destinations for students that have studied Physics, include, Astronomy, Biotechnology, Civil Engineering, Architect, Electronics, Aerospace Engineer, Medical Physics, Metallurgist, Scientific research, Geophysicist and Nuclear Engineer.

However, opportunities are not restricted to science related careers and a large range of other employment opportunities are available to those with a Physics degree. These include Finance and Insurance, Civil Service Accountancy Law (Patent and General), Journalism, Teaching and the Armed Forces.