

Subject: Physics

Exam Board: OCR



Welcome to A-level Physics. We are delighted that you are considering this A-level as an option in Year 12 and 13. To demonstrate your commitment to the course and to prepare you for September, you must complete the following tasks to the best of your ability. These tasks are compulsory, tasks 1 and 2 must be completed by your final session on 4th July. Tasks 3 and 4 must be

completed prior to your first lesson in Year 12.

We expect you spend at least 3-4 hours completing the tasks outlined in this pack. The activities have been designed to help you begin to develop some of the key skills you will need for A-level.

Learning Objectives:

Understand the structure of the course and the skills required.

Develop confidence in using mathematical techniques to solve problems.

Carry out A-Level standard practical work, making appropriate measurements and recordings.

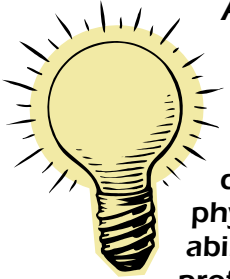
Contacts for Support: Mr Melland (Room 50 or Science Office) and Miss Thorley (Room 55). We're contactable through TEAMS

What is A-Level Physics?



Physics is the study of the universe and the objects within it with the ultimate goal of developing a complete understanding how the world works. At A-Level, we build upon GCSE Physics by studying topics including Forces and Motion, Energy, Waves, Electricity and Atomic/Nuclear Physics. We also explore more advanced fields that you won't have seen at GCSE including Particle Physics, Quantum Physics, Capacitors and Medical Physics. Practical work is an important part of your A-Level Studies.

Careers you can consider with this A-Level Physics



A-Level Physics is usually a prerequisite for further study in the physical sciences or engineering. There are a very large range of Science Technology Engineering and Maths (STEM) careers that naturally follow on from A-Level Physics including many engineering and programming roles (such as Aerospace Engineer, Medical Physicist or Software Engineer). It is desirable for students hoping to go into medical or health care roles to have some background in Physics. In addition to the range of STEM careers, physicists' skills in applying maths to the real world to solve difficult problems and their ability to communicate complex ideas are highly valued in the business, financial and legal professions in jobs such as Patent Attorney, Financial Analyst and Auditor.

Skills you will have learnt upon completion of A-Level Physics

Throughout the course you will develop a wide range of valuable skills, such as problem solving, applying maths to the real world, interpreting data and communicating complex ideas. You will have demonstrated that you understand difficult concepts and are able to apply these to a range of scenarios.

Overview of lessons:

Lesson 1: Key Skills for A-Level Physics - How do astronauts calculate the strength of gravity? Mr Melland

Lesson 2: Understanding Vectors - How can engineers deal with forces pulling in lots of different directions? Miss Thorley

Lesson 3: Investigating Lasers and the Diffraction Grating - How can astronomers analyse light from distant galaxies? Mr Melland

Lesson 4: Waves, Particles and Medicine - How do clinical scientists allow doctors to see inside the body? Mr Melland

Homework Tasks to be completed:

Task 1: Isaac Board GCSE 3 -Rearranging Equations

Task 2: Isaac Board A-Level A1- Using Equations

Task 3: Isaac Board GCSE 38 - Wave properties

Task 4: Isaac Board A-Level A3 - Standard Form and Prefixes