



Physics

A-Level

Overview

The Physics department aims to make Physics an enjoyable subject for all those who study it, incorporating as much practical work at all levels and with as many unusual experiments as possible. Physics is housed in a purpose-built laboratory block with three labs and a preparation room. The department has a very good stock of modern apparatus including an electron diffraction tube, many oscilloscopes including a Digital storage oscilloscope module, radioactivity apparatus, data logging equipment with accurate sensors and both a 90mm refracting telescope and an 6" reflecting telescope.

Why Study?

Physics is the study of the Universe using the scientific method. This means that all of space, time, energy and matter fall within its scope; from the smallest fundamental particle through the world humans experience to the largest galaxies observed and beyond.

There are a myriad of excellent reasons for studying Physics. For some it is on the direct pathway for a particular career (more on that later). Others want an understanding of how the World works and how we can create new technologies.

A Level Physics will give you incredibly strong analytical and research skills and help develop your critical thinking. You will be able to come at problems and solve them in a methodical and logical way. You will be able to investigate theories, devise tests and explore new ideas. Such strong problem-solving skills are highly sought after by employers.

The reason I chose to study A level Physics was that I was interested in the deeper nature of reality and how and why mathematics can be used to describe everything that we experience.

Course Overview

We study the OCR "Physics A" A level. The subject breakdown is:

Year 12:

- Newtonian mechanics
- Material science
- Electric Circuits
- Waves
- Quantum Mechanics





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Year 13:

- Thermal Physics and Ideal Gases
- Circular and Simple Harmonic motion
- Gravitational Fields
- Astronomy and Cosmology
- Electric and Magnetic Fields
- Particle and Nuclear Physics
- Medical Imaging

Progression

From cancer treatment to tackling climate change, gaming to robotics and artificial intelligence, physics and physicists are on the front line, helping to shape the future. At a time when jobs are changing, physics offers a vast and expanding range of career paths.

And it's not only science and technology. What many people don't realise is how valued and respected physics skills and ways of thinking are in other, often well-paid, industries – like finance and law.

Physics A-level has been named as a "facilitating subject" by the Russell Group of universities, which means it can be useful for getting onto a wide range of university courses.

Physics A-level is usually required for degree courses in: engineering (general, aeronautical, civil, electrical, mechanical, and sometimes chemical), and, you guessed it, physics...

It is often recommended or useful for: biochemistry, biology, chemistry, medicine, dentistry, nursing and other practice-based medicine courses, architecture, computer science, geography, earth and environmental sciences, maths, materials science, pharmacy, sports science, surveying, psychology.

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