



AS/A-Level Physics

Information Booklet



Physics is one of the more challenging subjects to study but also one of the most rewarding. You will learn about how things work – from the tiny atom to the universe itself!

Physics at AS and A-Level builds on your existing **knowledge**, **understanding** and **skills** from GCSE Science. You also have the opportunity to develop a range of useful skills. These include problem solving, lateral, analytical and creative thinking. It really helps if you also take an A-Level in mathematics, but it is by no means essential, as you will develop a good level of mathematical ability in doing physics.

Over the next few years, rather than just *doing some physics*, the AS course is where you begin to *think* as a physicist.

It is a physicist's way of thinking, and many skills, that make them well sought after in the working world.

"A good supply of physicists is vital to the UK because physics is at the heart of science and society," says the **Institute of Physics**.

"It underpins engineering and many other scientific disciplines, and is at work in hospitals around the world saving lives every day."

"Physics-based industry" is worth £130bn in export value to the UK economy, says the institute.

An AS or A-Level qualification in physics can start you on a path which opens so many doors for you.....

If you decided to continue studying physics at a higher level, a physics degree for example, you have **many** career opportunities afterwards.

If you want to study Physics at university, you will need an AS or A-level in physics.

Some universities allow you to enter into an entry-level Physics course with just an AS in physics.

To enter directly into a Physics Degree, you would need a full A-Level in physics (and often maths).

Graduates with physics degrees are often sought after by many employers. Physicist's skills allow them to enter into many fields, ranging from academic, to industry to government positions:

Academic: Teacher
Researcher (in many fields)
Astronomer
Astrophysicist

Industry: Engineer (in many fields)
Technology scientist
Medical physicist
Radiographer
Programmer
Manager
Project leader
Administrator
Materials scientist

Government:
Highway designer
Safety engineer
Accountant
Meteorologist
Defence researcher
Communications scientist

Careers

A physics-based education equips graduates with broad-based skills, which make them equally at home in a wide variety of stimulating careers such as management, accountancy, banking, the civil service, computing, journalism, broadcasting and teaching. A large proportion of graduates are attracted to research in academia or industry. Some stay on at university to study for higher degrees, while others join industrial research and development teams working in fields such as electronics, aerospace, instrumentation and sensors, microprocessors, telecommunications, and nuclear technology.

There are many **good reasons to decide on Physics** at A-Level.

Firstly, you may simply enjoy the subject (and this may be the most important aspect).

If you have a curiosity about the world around you or like to find out exactly how things work, physics is for you.

If you enjoy discovering new ideas or different ways of thinking, physics can provide many.

You may already have an idea of what career you wish to follow and physics gives you the necessary background and skills you need to pursue it.

Another big advantage of A-Level physics is class size. The relatively small class size means that each student has more opportunity to ask questions, seek help, take part in activities and often have one-to-one tuition from the teacher.

The details

If you decide to take AS/A-Level Physics you will be taught by a specialist. There will be approximately nine one-hour lessons a fortnight. The majority of A-Level courses have recently undergone changes, and physics is no different. New courses have been brought up-to-date, had new simpler assessment methods introduced and have embraced ICT in their use of many electronic and online resources for the student, to aid with revision amongst other things.

Overleaf is a breakdown of what you would study, and how it is assessed, at both AS (year 12) and A2 (year 13) should you pursue it. Basically, in year 12, unit 1 is relatively short so that students can be examined on it in January (a 1hr exam). Unit 2 is larger and examined (1hr 45 min exam) typically in June. The remaining 20% of the AS is based on internally assessed practical skills.