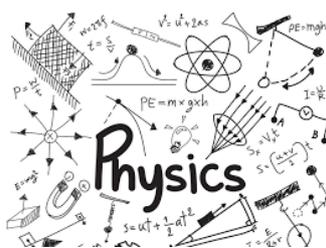


A Level Physics FAQs



What is Physics?

Physics is the study of the Universe from the very largest objects to the very smallest components using mathematics to define laws that govern how the universe works and interacts at all levels.

What topics do you study?

Year 1

Topic area	Key points
Mechanics	Describes how forces make the world go around, involves algebraic calculations and trigonometry
Motion	Describes how things move in two dimensions with varying velocity and displacement
Energy	Describes why objects move and how they behave when interacting with other moving objects such as in a collision
Materials	Why some materials change shape in a certain way and other don't. How different materials behave under stress and strain.
Electricity	Wide ranging topic covering charge, current, potential difference, resistance, energy, power, component symbols and lots and lots of circuit building
Waves	How progress and stationary waves move and transfer energy across our world and universe including the effects of refraction, diffraction and interference
Quantum	A introduction to the world of quantum physics examining how light can interact with particles and particles with light

Year 2

Topic area	Key points
Thermal Physics	A study of how solids, liquids and gases behave when gaining and losing thermal energy and investigating the laws that govern their pressure, volume and temperature.
Harmonic Motion	A study of how vibrating motion occurs and is defined, for example pendulums and oscillators
Rotational Motion	A study of how rotating motion occurs and is defined, for examples circular motion of pendulums, satellites orbiting and planetary motion
Astrophysics	The one everyone likes, space! A study of the universe, everything in it and how it came to be from the Big Bang
Capacitors	A short study of electrical capacitors and how they are used to store and generate charge
Radioactivity	How radioactive material changes and decays and can be used in various applications
Nuclear Physics	Describes how atomic and sub-atomic particles allow mass and energy interact together
Electromagnetism	Describes how electric and magnetic fields interact with each other
Medical Physics	How different discoveries in Physics are applied in medicine to diagnose and treat conditions

What is the exam board?

The exam board is OCR <https://www.ocr.org.uk/qualifications/as-and-a-level/physics-a-h156-h556-from-2015/>

How much practical work is involved?

Through out the 2 years up to 36 practical investigations are embedded within the different topics studied. These practical skills are assessed in 2 ways:

1. Practical skills assessed and contribute towards practical endorsement – pass or fail but do not directly affect your grade.
2. Examinable with in the final written exams.

How many exams are there?

There are three exams at the end of year 13.

The first 2 exams are 2 hours 15 mins long and each exam is worth 37% of the overall grade. Each exam assesses half of the content in Year 12 and half of the content in Year 13.

The final exam is 1 hour 30 mins and worth 26% of the overall grade. This exam assesses content across all topics.

Do I need to remember equations?

There are a small number of equations that you are expected to recall, primarily ones that are required for GCSE. The majority of equations, constants and given values are provided with each exam in an 8 page Physics Equation booklet.

What type of questions are in the exam?

There is a mixture of multiple choice, short answer questions and extended answer questions including multipart equation questions (up to 9 marks).

Is there any coursework?

No, there is no coursework element in A level Physics.

What do those who study Physics go on to do?

Traditionally students who studied Physics may go on to study as a pure Physicist at university (for example Astrophysics) or more commonly move into an engineering role, using their applied mathematical skills to in real world design problems in fields like automotive, marine, civil or mechanical engineering. However in the modern world students with A Levels and degree's in Physics are often found in bank roles or IT roles due to their ability so problem solve and deal with numbers in a logical way.

Is Physics hard?

Yes but that's why it is worth taking if you really enjoy it. Physics is a challenging course due to many factors, the large amount of mathematics involved, far more so than at GCSE level and those not comfortable with Maths should seriously think about whether it is the right course for you, especially if you are not planning on taking A level Maths. On the topic of this there are a lot of abstract topics that students often struggle with, particularly in Year 2. Remember as well, while you enjoy Astrophysics there is a lot more to the course than that one small part.

Do I need to be good at maths?

Yes, yes and yes! As above, if you are not planning on taking A level Maths you should seriously consider whether Physics is also something you want to take. While the idea of having an equation booklet might sound appealing the level of question is much higher and requires you to be very comfortable in applying formulas and transposing large numbers. While there is plenty of content and factual information to remember and recall and massive majority of the course is mathematically based.

Can I get in touch if I have any other questions?

Of course, my email address is cwilson@plymstockschool.org.uk