

Welcome to A Level Physics at Huish Episcopi

You dig deeper and it gets more and more complicated, and you get confused, and it's tricky, and it's hard, but ... it is beautiful!

- Brian Cox



Overview of the topics.

- Module 1: Development of practical skills in physics
- Module 2: Foundations in physics
- Module 3: Forces and motion
- Module 4: Electrons, waves and photons
- Module 5: Newtonian world and astrophysics
- Module 6: Particles and medical physics

Component	Marks	Duration	Weighting	
Modelling physics (01)	100	2 hours 15 mins	37%	Assesses content from modules 1, 2, 3 and 5
Exploring physics (02)	100	2 hours 15 mins	37%	Assesses content from modules 1, 2, 4 and 6

A Level Bridging Work

Unified physics (03)	70	1 hour 30 mins	26%	Assesses content from all modules (1 to 6)
-----------------------------	----	----------------	-----	--

All the exams are taken at the end of the course in Year 13.

Successfully completing a number of practical activities throughout the course enables you to also achieve the “Practical Endorsement”. Although this does not count towards your grade, it is recorded on your certificate.

Support and advice

A copy of the specification can be found here:

<http://www.ocr.org.uk/Images/171726-specification-accredited-a-level-gce-physics-ah556.pdf>

Past papers can be found here:

<http://www.ocr.org.uk/qualifications/past-papers/>

Textbook

You will be loaned textbooks for Year 1 and Year 2 which must be returned at the end of the course. In addition to a hard copy, you will have access to an online version via the Kerboodle website. The website will also be used for setting some homeworks and tasks.



Revision guides

A choice of two revision guides will be made available that cover the whole course, priced at approximately £10.

Useful Websites

<https://senecalearning.com/>

<https://www.alevelphysicsonline.com/>

<https://isaacphysics.org/alevel>

<http://www.antonine-education.co.uk/>

https://www.youtube.com/results?search_query=khan+academy+physics+

<https://www.youtube.com/user/DrPhysicsA>

Expectations

There are 8 lessons of Physics per fortnight, split between two teachers. Full attendance at all lessons is expected. **As a minimum, you will be expected to study for a further 8 hours outside of lesson time. Do not underestimate the importance of this extra study.**

If you want to reach your potential, homeworks and independent study work must be completed on time. It is your responsibility to meet deadlines. If you are aware of a reason why a deadline cannot be met, you need to discuss this with your teacher in advance. Google classroom will be used for setting work.

Please purchase a large, strong lever-arch file complete with dividers and lined A4 paper. We recommend arranging the file to match the chapters in the textbook. You will be expected to bring the file to all lessons, together with the text book. You will also need a scientific calculator.

Bridging unit

Due to the unusual circumstances this year, most students will have missed a significant amount of face-to-face teaching. This makes it even more important to keep your subject knowledge ticking over and up-to-date over the extended period before we return. If you do not keep on top of it, you will really struggle to stay on the course when we do return.

The following two tasks make up the Bridging Unit between GCSE and A level Physics. You are expected to work on these tasks over the summer. **The research based report is to be handed in during your first Physics lesson.**

Task 1

To be well prepared at the start of you're a Level Physics course you must be proficient with the concepts you learnt during your GCSE studies. It is so easy to let the concepts studied at GCSE become unfamiliar. You are therefore advised to spend some quality time over the summer break revising your work from GCSE. If your own notes are a bit sketchy, you might want to obtain a copy of "Head start to A Level Physics" from CGP to help you.

You really need to hit the ground running in September and not start by playing catchup.

Task 2

Write a 500 word scientific report based on a physics related topic. Some suggestions are given below but **any physics topic that interests you can be used.**

How safe are cars today? – Describe how airbags, seat belts and crumple zones reduce impact forces in road traffic accidents.

How efficient are passenger aircraft today? – Describe how modern advances in commercial aircraft design, as well as how the aircraft are flown, has led to savings in operational costs.

What is polarisation used for? – Research and describe some of the uses of devices that are used either to limit the transmission of some polarised waves or are used to show up the effects of polarised light effects.

How do PET Scanners work? – Describe the main components and use of a PET scanner and also its advantages and disadvantages in medical examinations. **How are radioactive medical tracers used?** – Describe the use of medical tracers as a method of medical diagnosis as well as the basic operational principles of the gamma camera used to record the information.

Should we go back to the Moon? – Describe the technical problems and suggested solutions.

Should we go to Mars? – Describe the technical problems and suggested solutions.

How do we search for extra-terrestrial life? – Describe the techniques used.

Famous physicists from history. – choose any famous physicist and find out what made them so renowned and/or what contributions they made.

Or any other physics-related topic.

Have your report typed on to A4 paper, using double line spacing and give your word count at the end of the report.

Please have this completed report ready to hand in during your first Physics lesson.

Additional guidance:

A Level Bridging Work

- The report should be **aimed at making the topic understandable to a GCSE student** – if you do not understand it, then neither will they! ○ An important skill that you will be judged on as part of the A Level course will be **how well you reference research work**. Cutting and pasting is simply not allowed and **everything must be referenced, including pictures and diagrams. You should use the Vancouver system of referencing – research this.**
- Don't waffle – Physics is a precise subject. Make sure you are putting across the key points in a clear and concise manner.
- Use diagrams / images where appropriate to enhance your report. ○ Consider the presentation of your report so that it is easy to read and split into suitable sections.