

# Preparation work for A Level Physics for 2024 – 2025

## Academic year

Dear prospective A level Physics student,

Welcome to the exciting world of physics, or “the pleasure of finding things out” as physicist Richard Feynman called it. A great journey towards a better understanding of the Universe is about to start in September 2024 at Newstead Wood School. Just like anyone does before any fabulous journey, you need to do some preparation.

You are familiar with many topics you will study in A Level Physics including forces, waves, radioactivity, electricity, and magnetism. We will study them in more detail and find out how they are interconnected during your 2-year learning journey in Physics. You will also learn how to apply mathematics to real-world problems and explore new areas such as particle physics, cosmology, and medical imaging. Perhaps more importantly, you will develop skills that can be transferred to just about any other area of work, from setting up a business to saving the planet.

Even if you do not go on to become a physicist, learning to think like one will help you get to the root of any problem and draw connections that are not obvious to others. Physics will not give you all the answers, but it will teach you how to ask the right questions.

Here are some key documents you may like to refer to:

[OCR A Level Physics A Specification \(H556\)](#) p5 and 6 will give you a good overview of the content of the course.

[Maths Skills Handbook - GCE Physics \(ocr.org.uk\)](#) this document lets you know which maths skills will be needed for the A-level Physics

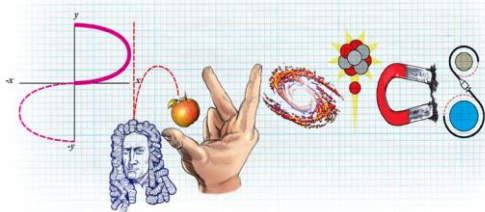
[Practical Skills Handbook - GCE Physics \(ocr.org.uk\)](#) you can take a quick look if you want to, but there will be a student focused practical booklet issued to you at the start of the academic year.

[A Level Physics A H556 - Exam hints for students \(ocr.org.uk\)](#) some hints for the A-level exams.

[Your future with physics: A guide for young people | Institute of Physics \(iop.org\)](#) There are some student case studies to help you see where A-level Physics can take you.

### **Compulsory tasks to complete:**

**1**





2. [Click here](#) to watch a documentary by Big Think, titled “Michio Kaku: The Universe in a Nutshell”. Write a text on how it made you feel.
3. [Go and explore Physics beyond A level.](#)
4. Here is a short selection of books that should appeal to a physicist, however, please feel free to read any Physics book of your choice.
  - **Moondust: In Search of the Men Who Fell to Earth**  
This book uses the personal accounts of 9 astronauts and many others involved in the space program, looking at the whole space-race era. ISBN: 978-1526611574
  - **Surely You're Joking Mr. Feynman: Adventures of a Curious Character** By reading this book you will get insight into Mr. Feynman’s work including the creation of the first atomic bomb and his work in the field of particle physics. ISBN: 978-0099173311
  - **Quantum Theory Cannot Hurt You: Understanding the Mind-Blowing Building Blocks of the Universe**  
Any physics book by Marcus Chown is an excellent insight into some of the more exotic areas of physics that require no prior knowledge. ISBN: 978-0571315024
5. Photograph or video record a physics related event or situation. Explain the physics you see in it/them.

Have a restful and refreshing summer. Feel free to email me if you have any questions.

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