

Preparation work for A Level Physics for 2023 – 2024 Academic year

Dear prospective A level Physics student,

Welcome to the exciting world of physics, or “the pleasure of finding things out” as legendary physicist Richard Feynman called it. A great journey towards a better understanding of the Universe is about to start in September 2023 at Newstead Wood School. Just like anyone does before any fabulous journey, you will do some preparation, please.

You are already familiar with many of the topics that 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:

Specification	Data, Formulae and Relationships Booklet	Mathematical skills handbook	Exam hints for students	Physics at A-level by IOP
Pages from the official specification, which are relevant to you.	Please make a printout copy of this document and bring it to every lesson.	Do you have competence in the appropriate areas of mathematics relevant to the subject?	A bunch of advice on what to avoid and how to answer in exams.	A level Physics in a nutshell.

We will work and learn together, however, your initial steps are essential to have a firm and robust start. Let us start with the **compulsory tasks** you need to complete before the next academic year.

Compulsory tasks

These come in three parts. For the first two tasks, you are allowed to use a calculator, and the “Data, Formulae and Relationships Booklet” which you can access [HERE](#).

1. *Part 1 of the tasks is to be taken under exam conditions. You will answer 100 questions via Microsoft Forms. Plan to finish in one attempt. You should be able to finish in 120 minutes maximum. **The Form tracks how long you spend to complete the task and it will be a meaningful piece of data for us.*** [PLEASE CLICK HERE](#) to start Part 1.



2. Part 2 is a set of online learning activities you will undertake over the summer break. Please do not leave them to last couple of days before the start of the Autumn term. The due date is 20.08.2023. Do regular work in small chunks. [CLICK HERE](#) to join Isaac Physics, the online learning platform. **If you are already a member of Isaac Physics**, enter “NUH3LJ” into the Teacher Connections tab on your “My Account” page to join our group. You will find some tasks there awaiting your attention.



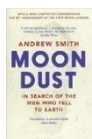
3. Part 3 is a survey which I would like you to take via Microsoft Forms please. [CLICK HERE](#) to access the survey.



Optional tasks

1. You may like to get a copy of “Head Start to A-Level Physics” (ISBN: 9781782942818) and **study** three or four pages per week. It is not for some light reading over the summer. Hand in your neat work in September so that we can use it as evidence of extra steps you are able to take for your own learning when we write your UCAS reference!
2. The following links are for three examination papers you may like to complete, but certainly under examination conditions. Please hand in your work in September. [PAPER 1](#), [PAPER 2](#), [PAPER 3](#). You are allowed to use a calculator, and the “Data, Formulae and Relationships Booklet” which you can access [HERE](#).
3. [Click here](#) to watch a documentary by Big Think, titled as “Michio Kaku: The Universe in a Nutshell”. Write a text on how it made you feel.
4. [Go and explore Physics beyond A level.](#)

5. Here is a short selection of books that should appeal to a physicist, however FEEL FREE to read a Physics book of your choice. Write your review on the book, and we will publish and share with others at our intranet pages, with you permission. This is another aspect about you which we can proudly mention in your UCAS reference.



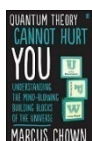
Moondust: In Search of the Men Who Fell to Earth

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



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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

4. Daydream! If you can think there is a link between what you daydreamed and Physics, make a note of it. I would be very interested in your notes if you prefer to share.
5. Photograph or video record a physics related event or situation. Explain the physics you see in it/them. You will be given a chance to publish your work online. Another material we can use in your UCAS application!

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

Muhsin Ogretme, Head of Physics, Joint Head of Science

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