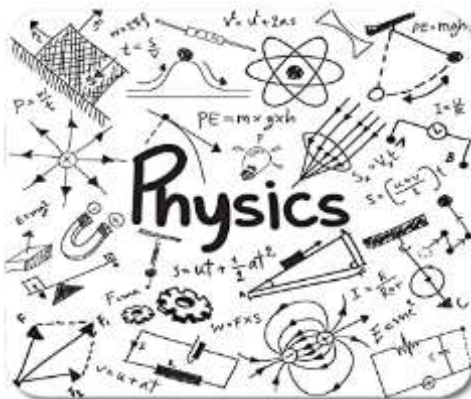




Welcome to A Level Physics



Your course

You will be studying Physics A Level with the AQA exam board. Details of the specification and course assessment can be found here:

<https://filestore.aqa.org.uk/resources/physics/specifications/AQA-7407-7408-SP-2015.PDF>

We encourage you to become familiar with the course specification as soon as you start your course in September.

Compulsory summer bridging work

Here is a list of tasks we have prepared for you to complete over the summer holidays to make sure you expand on your current skills. **You will need to hand in/ present / be tested on this work during your first week in September at RPS.**

TASK 1 - Isaac Physics

The first task is to **register and link your account** to our teacher accounts, giving us permission to view your work – it is vital you do this, as we will use this platform throughout your two year course. Click on the link below:

<https://isaacphysics.org/account?authToken=9E6ZUR>

The compulsory tasks will be added on or after induction day– **YOU MUST COMPLETE ALL THE QUESTIONS ON ALL BOARDS** ahead of September school start!

TASK 2 – Test revision

You will have an assessment in the first week of school in September; you should revise the following topics from GCSE:

Maths skills: A selection of questions on the techniques developed in the Isaac physics tasks listed in TASK 1.

Electricity: revise using your notes, and/or BBC bitesize: <https://www.bbc.co.uk/bitesize/topics/zp3ftv4>

Forces and motion: revise using your notes, and/or BBC bitesize: <https://www.bbc.co.uk/bitesize/topics/z82j97h>

The 'Head start to A-level Physics' textbook listed below is also a great resource in preparation for this.

These topics are core to a successful experience and understanding of physics, so prepare thoroughly!

TASK 3 - Seminar report

A level lessons will also involve a lot more discussion than at GCSE. To get the most out of your studies, you should take an active interest in the subject. This would require you to use additional resources, both print and online to read around the subject and familiarise yourself with the most recent developments in the field.

A very interesting resource and great source of inspiration is TED <https://www.ted.com/talks>

One of your tasks for the summer is to watch at least one Physics related TED talks, make notes, research the topic, **get ready to present the subject to the class and even answer questions about it!**

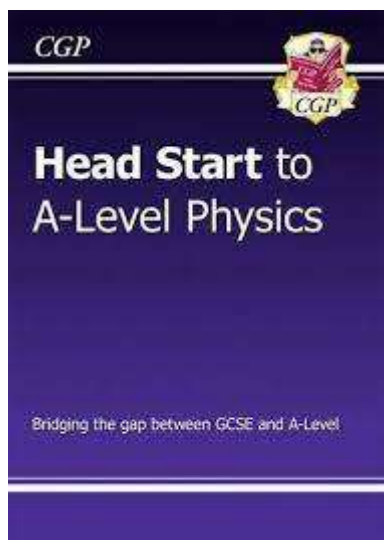
Textbooks

We use an online version of the course textbook via the Kerboodle platform, which also provides both the teachers and students with extra interactive and diagnostics resources. This compulsory resource will be organised for the whole cohort in September, so please DO NOT purchase a separate textbook! Whilst not final, the cost is anticipated to be in the region of 20 pounds to cover both years. Additionally, we have created in house specific exam booklets for each year 12 and year 13 topic, as well as required practical booklets which are vital to the successful completion of the practical element of the course. We charge approx.10 pounds to cover the whole 2 year cost of printing; further details to come in September.

If you are or are likely to be a **bursary** student, please let us know at the start of September so we can have both the textbook and in-house resources acquired on your behalf.

Optional head start guide:

Head start to A-level Physics bridging book:



This bridging book is great to review the main GCSE contents relevant to the A-level and would be a great help for the first week of year 12 assessments

Getting inspired (optional)

Ideas for further Reading

Reading around the subject brings the concepts to life, inspires you to investigate further, and can really help with your UCAS statement later on – as well as giving you a head start on some of the independent learning license task you will complete in year 12.

1. **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.

2. **Surely You're Joking Mr Feynman: Adventures of a Curious Character**

By reading this book you will get insight into his life's work including the creation of the first atomic bomb and his work in the field of particle physics.

3. **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

4. **A Short History of Nearly Everything**

A whistle-stop tour through many aspects of history from the Big Bang to now. This is a really accessible read that will refamiliarise you with common concepts and introduce you to some of the more colourful characters from the history of science.

5. **Thing Explainer: Complicated Stuff in Simple Words**

Written by the creator of online comic XTCD (a great source of science humour) is a book of blueprints from everyday objects such as a biro to the Saturn V rocket and an atom bomb.

6. **Why the Universe Exists: How particle physics unlocks the secrets of everything (New Scientist Instant Expert)**

If the recent discovery of the Higgs boson piqued your interest, then *Why The Universe Exists* will take you deeper into the world of particle physics, with leading physicists and *New Scientist* exploring how the universe functions at the smallest scales.

7. **Furry Logic: The Physics of Animal Life**

The animal world is full of mysteries. Why do dogs slurp from their drinking bowls while cats lap up water with a delicate flick of the tongue? And how can a Komodo dragon kill a water buffalo with a bite only as strong as a domestic cat's?

These puzzles - and many more besides - are all explained by physics. From heat and light to electricity and magnetism, *Furry Logic* unveils the ways that more than 30 animals exploit physics to eat, drink, mate and dodge death in their daily battle for survival.

Movie Recommendations

1. **Moon (2009)** - With only three weeks left in his three year contract, Sam Bell is getting anxious to finally return to Earth. He is the only occupant of a Moon-based manufacturing facility along with his computer and assistant, GERTY. When he has an accident however, he awakens to find that he is not alone.
2. **Gravity (2013)** - Two astronauts work together to survive after an accident which leaves them stranded in space.
3. **Interstellar (2014)** - A team of explorers travel through a wormhole in space in an attempt to ensure humanity's survival.
4. **The Imitation Game (2014)** - Based on a true story. During World War II, the English mathematical genius Alan Turing tries to crack the German Enigma code with help from fellow mathematicians.
5. **Apollo 13 (1995)** - Based on a true story. NASA must devise a strategy to return Apollo 13 to Earth safely after the spacecraft undergoes massive internal damage putting the lives of the three astronauts on board in jeopardy.