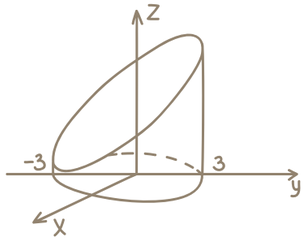
PHYSICS



HEAD OF DEPARTMENT: MR LAITY
EXAMINATION BOARD: OCR

SPECIFICATION: PHYSICS A
QUALIFICATION: A-LEVEL AND AS LEVEL

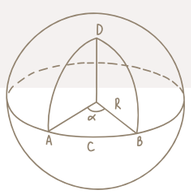
The A-Level in Physics enables students to build on their knowledge of the laws of physics, applying their understanding to solve problems on topics ranging from subatomic particles to the entire universe. They also have the opportunity to develop all the relevant practical skills.

WHAT YOU WILL STUDY IN LOWER SIXTH

In the Lower Sixth the teaching of the specification is shared between two members of the Physics Department. One teacher will lead you through further ideas behind electricity, including internal resistance, resistivity and potential dividers. They will then move on to more complex descriptions of wave motion including polarisation, interference and stationary waves. Meanwhile, your other teacher will cover ideas behind forces, motion and energy including projectile motion, systems in equilibrium and material science.

You will then go on to the mysteries and wonders of quantum physics. This is a fascinating topic where the interpretations of the theory are still widely discussed but without which we would not be enjoying our digital world. Indeed, you will be taught the foundations that may well lead to quantum computers in your lifetime!

Both of your teachers will also lead you through the practical skills aspect of the course, where you will learn more advanced techniques when carrying out experimental work and in the analysis of the data that you have gathered. These experiments will bring the theory that you have learned to life!



I would say that studying A-Level Physics at Truro School is initially challenging but rewarding when it all comes together and makes sense, and is made much easier due to teachers helping in lessons and clinics.

JAMES

WHAT YOU WILL STUDY IN UPPER SIXTH

Once again the teaching is shared in the Upper Sixth. You will follow more ideas behind Newtonian mechanics including circular motion, oscillations and Newton`s famous law of gravitation. You will then cover the popular topics of astrophysics and cosmology where you will discover that the light from stars tells us so much more about our universe.

The final topic covered by this teacher is nuclear and particle physics which will give you an introduction to the forces and particles that form our understanding that has been summarised by The Standard Model, the model that predicted the Higgs Boson! Your other teacher will cover concepts in thermal physics in the first term which will help you to explain and predict the behaviour of gases.

You will then move on to the theory of electric fields and the subsequent applications of capacitors in electrical circuits. You will then meet the ideas of Michael Faraday and his explanation of the effects of electromagnetism and consequently understand how motors and generators work. In the final term you will look at interesting applications of physics in the realm of Medical Physics during which you will visit the relevant departments in the local hospital.

WHY STUDY PHYSICS AT TRURO SCHOOL?

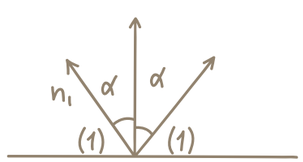
The physics department can provide you with a team of teachers that have both a breadth and depth of knowledge. Our five physics teachers have a combined 70 years of teaching experience. They can also bring particular expertise in such areas as engineering, astronomy, computing and electronics. Four members of the department work for the examination boards and so have a valuable insight into your assessment.

We are a founder member of the Ogden Trust group of schools in Cornwall which supports a range of initiatives, programmes and projects to promote the teaching and learning of physics.

TOP-LEVEL FACILITIES

We have up-to-date physics equipment for all aspects of practical work at A-Level. The department also enjoys two well-equipped prep rooms for completing practical work and for following courses in electronics.

We keep a number of telescopes in our observatory for use by the students and have fairly dark skies!



WHERE WILL AN A-LEVEL IN PHYSICS TAKE YOU?

The Physics A-Level not only provides excellent preparation for further study in the Sciences and Engineering, but also in a host of other disciplines where analytical and problem-solving skills are required. Physics A-Level and degree courses provide you with excellent career opportunities in the sciences, engineering, computing industry and geology. salary statistics show that degrees in Physics have one of the biggest effects in increasing your earning power.

EXTENSIONS AND OPPORTUNITIES

- Weekly physics clinics where you can go over difficult course material
- Astronomy and electronics clubs are run weekly with access to a number of telescopes held in our observatory and a well-equipped electronics area
- Participation in the British Physics Olympiad in both Lower and Upper Sixth.
- Cambridge University`s `isaacphysics` problem-solving initiative
- Participation in the Ogden Trust`s Lower Sixth Humphry Davy Essay Competition
- Attending lectures as a member school of the Institute of Physics
- `Headstart` courses in Science and Engineering
- Access to online resources through Kerboodle and Moodle

I really enjoyed studying A-Level Physics at Truro School. The lessons prepared us in both the theory and the practical use of physics. The lessons are delivered at such a high level that students often receive excellent results in British Physics Olympiads.

OLESIA

TRIPS, VISITS AND FIELD WORK

In recent years we have run the following Sixth Form trips:

- CERN
- Joint European Torus Nuclear Fusion Centre
- Diamond Light Source, Oxford
- Hinkley Point Nuclear Power Station
- Summer School at Goonhilly Earth Station
- Treliske Hospital, Medical Physics Department