**A level Physics**

**Introduction – an outline of the course**

Welcome to A level Physics!

During your time in the sixth form you will develop the physics topics you have developed in KS4 Science such as Forces, Motion, Electricity, Radiation and Waves. You will also meet new topics such as Quantum Physics and Particle Physics. The assessment at the end of Year 13 consists of three exams in which you can show your knowledge and understanding of the topics that you cover. There will also be more of an emphasis on applying your knowledge to practical and unfamiliar situations than in GCSE.

There is no NEA work in A level Physics but just like at GCSE there are required practicals that you must complete. During these practicals you will gain skills and competencies that you may develop if you move onto university or a science-based career. Successful completion of the Core Practical Competencies will gain you a Practical Endorsement of your A Level Physics Certificate. Some Universities will ask that you pass this endorsement to be considered on their course.

**What will we be studying in the first half term?**

In September you will start studying Electricity and Particle Physics closely followed by Mechanics.

Electricity

You will start by reviewing the electrical circuits you studied for GCSE. When you are confident with this, we will delve deeper into the topic. Two required practical activities are included in this topic, you will be given full training on how to write these labs up to display your practical competence required to gain a practical endorsement on your A Level Physics certificate.

Particle Physics

Particle Physics is the newest, some say most exciting, area of Physics which is right on the cutting edge of development. It’s the reason the Large Hadron Collider has been built in Cern, Switzerland. (<https://home.cern/science/accelerators/large-hadron-collider> ) This area of Physics is most likely new to you also but with support from your teacher you will gain confidence and understanding of the area of Physics studied by Professor Brian Cox, presenter of many a TV show about space.

**What can I do that will help me prepare for A level Physics?**

One of the important ways that you can prepare is to make sure that you are familiar with the Physics that you have learnt for your GCSE Science or Physics. Some of the topics that you will study at A level expect you to have a good understanding of the work that you have covered during your GCSE. Make sure that you keep your knowledge organisers, revision guide or exercise book as a reminder of the work that you have covered.

You may wish to use some of your summer to carry out some background reading and preparation. You could complete an on-line university course (Moocs). Log onto Unifrog to find out more;

<https://www.unifrog.org/student/moocs/start>

Or you could read some of the articles about how Physics is used in the world or where Physics could take you:

<https://www.iop.org/careers-physics/your-future-with-physics>

UCAS, the university people, have some advice you might find useful about choosing A Levels too:

<https://www.ucas.com/sites/default/files/tips_on_choosing_a_levels_march_2015_0.pdf>

There are numerous books that you may be able to borrow or you can look at YouTube and search for [“physics BBC four”.](https://www.youtube.com/results?search_query=chemistry+bbc+four)

There is a whole world of opportunities that can be opened up by having an A Level in Physics, look beyond the obvious to options like: Geophysicist, Meteorologist, Health Care, Medical Physics, Lecturer or Secondary School Teacher, Engineer, Astrophysicist, Architect, Optometrist, Renewable Energies, Accountancy, Logistics and many, many more. Only you can control your future, what will you do with A Level Physics?

**Summer Gap Task**

The best way to prepare for your A level Physics is to complete the summer gap task that has been set.

If you read the booklet and complete the tasks over the summer then you will be using the skills that you have developed during your GCSEs. It is easy to let these skills lapse which will make the start of your A levels more difficult because you will be trying to remember what you did at GCSE and learn new knowledge and skills.

On the [school website](https://www.guiseleyschool.org.uk/), if you click on Sixth Form and follow the list until you see Year 11 into 12 Gap Tasks. Click on this and find the Physics task which is a PDF booklet.

The booklet has been produced by the exam board (AQA) that you will be studying. It starts with an introduction, suggestions about what Physics can lead to, a description of the course and exams and links to helpful websites.

The tasks are designed to help you remember what you learnt at GCSE and give you exercise to practice and develop these skills.

The topics include:

The Greek Alphabet

SI Units

Prefixes

Conversions

Scientific Investigation Vocabulary and graphing

Standard Form

Basic maths skills

Each section has a short description or explanation followed by a few questions. At first glance this appears to be a lot of work but it won’t take you long to complete and you will be rewarded by having a better understanding of Physics when you start the A level course.

You don’t have to complete this work in one go. Why not wait until you have a rainy day?

We are really looking forward to seeing you in September and working with you so that you achieve your goals and aspirations.