Fact File
- Two year linear A Level Course (AQA Physics)
- 100% Examined (plus a practical endorsement)
- Physics is essential for many Engineering courses and good for scientific degrees too
- Lots of enrichment opportunities, competitions, talks and trips
- Taught in state of the art laboratories
- A facilitating subject that is respected by both universities and employers

Course Summary
Physics is the study of EVERYTHING! From the origin of the Universe itself to the tiny structure of the fundamental particles it consists of; the entire history of time and space! It is often known as the fundamental science, the branch that studies the natural phenomena of the Universe and tries to determine the laws that govern our lives. Whilst theoretical Physicists ask the really big questions such as; “How did the Universe begin?” and “How does the sun keep shining?” other physicists apply their understanding to solve problems. They develop new forms of energy production and design new medical scanners and radiotherapy treatments for cancer. No matter what interests you have, there is an area of Physics for you.

Specific entry requirements
To ensure you have the best possible chance of success in Physics, you are required to have obtained at least grade 6 in both GCSE Core and Additional Science, a grade 6 in GCSE Mathematics and 5 or better in GCSE English. If you have studied the three sciences separately at GCSE you should have obtained at least a grade 6 in Physics and one of the other sciences. You will also be required to study A Level Maths alongside A Level Physics.

Progression skills and opportunities
Physicists solve ‘real world’ problems using mathematical reasoning, sound arguments and reliable evidence, skills you will develop on this course. During your studies you will learn how to perform investigations in our state of the art laboratories; you will learn how to collect and interpret data, and how to use this evidence to explain interesting phenomena. You will be required to clearly communicate the reasoning behind your conclusions using logical steps that others can follow.
Physicists develop strong logical, numerical, problem solving skills that will make you an attractive prospect for many different employers from a variety of different industries. Physicists are in demand in engineering fields of all types; but also in areas as diverse as medicine, archaeology, police work, environmental science, aerospace and accountancy for example: the list is almost endless.

**How is the course assessed?**
The new linear A Level Physics course will be assessed by your performance in three exams at the end of the second year. These exams are synoptic and between them, will cover all the elements from the entire two years of study. Each exam is 2 hours long and will contribute 33% to your final A Level grade. There is no longer any coursework that contributes to your final A Level grade: this final grade will purely depend upon your examination performance. Practical work will still form an integral part of the course, but a separate ‘practical endorsement’ will provide evidence of your successful development of laboratory skills. PASS or FAIL will be added to the final certificate, next to your grade.

**What topics will I be studying?**
1. *Measurements & Errors*
The fundamental units of measurements, plus the study of errors and their significance.
2. *Particles & Radiation*
The fundamental properties of matter, electromagnetic radiation and quantum phenomena.
3. *Waves*
The properties and applications of waves, including refraction, diffraction and interference
4. *Mechanics & Materials*
The influence of forces, energy and momentum plus a study of material properties.
5. *Electricity*
The fundamentals of electricity through the practical investigation of electrical circuits.
6. *Further Mechanics & Thermal Physics*
Circular & simple harmonic motion and the properties and nature of ideal gases
7. *Fields & their consequences*
A great unifying idea of Physics, how gravitation, electrostatics and magnetic field theory link.
8. *Nuclear Physics*
The nucleus and nuclear power from an understanding of the link between mass and energy.

Plus one optional topic chosen from the list below:
9. *Astrophysics*
The study and interpretation of the universe and the principles behind the devices used.
10. *Engineering Physics*
The applications of rotational dynamics and thermodynamics.

**Will I need any specialist materials or equipment?**
You will need a number of course booklets, revision guides and practical equipment but everything you require will be provided as you contribute towards these as part of your course costs. Your teacher may recommend other books for study and revision but it is up to you whether you buy these or access them in the College Library.