A Level Physics

"A physicist is just an atom's way of looking at itself."
Neils Bohr

Physics is constantly helping us to understand the world around us, from the micro to macro structures in the universe and how they interact to produce various phenomena. Physics is helping us to advance our understanding of the properties and behaviours of materials, relevant in many engineering capacities.

Particles and Waves - where you will learn about the discovery of the atom, subatomic groupings, types of wave and wave behaviours.
Mechanics and Materials - where you learn about scalar and vector quantities, motion, conservation of energy, the properties of materials and thermodynamics.
Electricity - where you will learn about the characteristics of different components, the relationships between PD, current and resistance, EMF and device application.
Nuclear Physics - where you will learn about the structure of the atom experiments, radiation, decay and instability, nuclear fission and nuclear safety where you will choose from one of the following options: Astrophysics, Medical Physics, Engineering Physics, Turning points in Physics and Electronics.

How you will be assessed:

3 x 2 hour written exams A-Level. Competency in practical physics based upon completion of required practical activities.

What you need to get started:

To be a success in Physics you will need a keen interest in science in general and resilience. Physics both requires and develops problem solving and logical thinking skills, in particular, with abstract concepts. You will need to be able to communicate ideas clearly and be comfortable with numeracy in order to support ideas with mathematical proof and evidence. Students require GCSE grade 6 and above in Science, along with grade 5 in Maths.

What our students say:
"I chose to study physics because I find the application of maths to describe real-life situations interesting, for example the mechanics module of the course. It is very satisfying to complete problems which often have several parts. I find astrophysics particularly interesting and look forward to the optional block that we can study in Year 13. Physics can be quite challenging but I do not enjoy it because it's easy, I enjoy how hard it is."
Aisha -Year 13 2020-21

"The idea of absurdity and impossibility is what makes me want to learn more; It's the promise of questions that draws me to Physics. It is the science of all sciences. It is quite simply the explanation for everything from the smallest of interactions between subatomic particles to the gravitational fields that cause curvatures in space time. Yes, physics can be difficult, but it's the challenge that makes the subject so much more rewarding."
Zoe – Year 13 2020-21

"I chose to study A-Level physics because I want to study to be a civil engineer after leaving sixth form. Being a civil engineer requires a good understanding of key physical concepts involving mechanics, materials and thermodynamics. My favourite part of physics so far has been learning about subatomic particles, like quarks, and the ideas of wave particle duality that underpin the fundamental forces. "
Alfie – Year 13 2020-21

What next?

Physics is a seriously useful subject for the majority of STEM (Science, Technology, Engineering and Maths) careers and you'll find physicists everywhere, in industry, transport, government, universities, the Armed Forces, the Secret Service, games companies, research labs and more.

Physics is especially helpful for jobs that involve building things and developing new technologies, including: engineering (flight, buildings, space, you name it…), astronomy, robotics, renewable energies, computer science, communications, space exploration, science writing, sports and games technology, research and nanotechnology (that's engineering on a seriously tiny molecular scale!)