

Physics

- **Teacher:** Mr Richardson
- **Exam board:** AQA A
- **Course work or exam:** 100% Exam



- **What will I learn about?** Over the two years of the course, the following topics will be studied: Particles and Quantum Phenomena – wave-particle duality, quantisation and the standard model of particle physics, the basic properties of waves, refraction, diffraction, interference, simple harmonic motion, resonance and damping. Basic electrical properties, electrical components and circuits. Mechanics and Energy – forces and motion, energy and power, momentum, tuning effects and circular motion. The properties of materials and their uses. Investigating the similarities and differences between gravitational and electric fields. Electromagnetism, the effect of capacitance and the use and operation of capacitors, Nuclear Physics – the structure of the nucleus, radioactivity, nuclear instability including nuclear energy. The thermal properties of materials, ideal gases and the kinetic theory of gases. The physics of stars and cosmology. Practical work is at the heart of physics, the explicit teaching of practical skills will build students' competence. A separate endorsement of practical skills will be taken alongside the A-level. This will be based on direct observation of students' competency in a range of skills that are not assessable in written exams
- **Great for:** Studying A-level physics doesn't restrict your options, it expands them. As well as being needed for many careers in science and engineering the skills and knowledge that you can develop by studying physics keeps the door open to doing just about everything else. You will develop skills that can be transferred to just about any other area of work, from setting up a business to saving the planet. Even if you don't go on to become a physicist, learning to think like one will help you get to the root of any problem and draw connections that aren't obvious to others. Physics won't give you all the answers, but it will teach you how to ask the right questions.

Student view: *'A-level physics is a gateway to many careers and really helpful when applying for a science-related degree. To be truthful it is not an easy subject, it takes time and practice to be able to master all of the theories. But with time the satisfaction you get from being able to solve hard problems and understand complex ideas is immense. Mr Richardson teaches the subject in detail and because of this enables you to ask a lot of questions that help you access the subject on a deeper level. For me, this was perfect as it was important as I could collect all of my studies into genuine understanding. He is especially helpful when you want to see an issue from a different angle, as it can really help your understanding!'*

Oliver, Year 13