A Level Physics (AQA)

Head of Department: Mr R Murray

85% A*-C in 2026

The A Level course follows AQA Specification, with sections 1 to 5 taught in Year 12 and sectic 6 to 9 taught in Year 13.

1: Measurements and their uncertainties
Practical work is very important in Physics and will be studied in all sections of the course. At least 12 practical activities are identified by AQA, and these will be tested in exams.

2: Particle Physics and quantum concepts
This introduces you to exciting new ideas in Physics, such as, quarks, leptons and conservation laws. Quantum concepts include the photoelectric effect, energy levels in the atoms with photon emission and wave-particle duality.

3: Waves
This covers interference of light, diffraction, refraction of light, total internal reflection and fibre optics.

4: Mechanics
Vectors and their treatment are introduced followed by a development of energy, forces and motion. Materials are considered in terms of their bulk properties and tensile strength.

5: Electricity
A full practical study of this topic is undertaken, including important applications, such as resistivity and superconductivity.

6: Further Mechanics and Thermal Physics
This unit considers the link between oscillations, waves and circular motion via simple harmonic motion. Thermal aspects of ideal gases are studied, including molecular kinetic theory which is studied in depth.

7: Fields and their consequences
Key applications of fields are developed, including satellite motion, capacitors, transformers and alternating current generators. A quantitative study of fields explores gravitation, magnetism and electric fields.

8: Nuclear Physics
This section covers radioactive decay and nuclear densities. It builds on the work of particles and radiation to link the properties of the nucleus to the production of nuclear power.

9: Option topic
We study 'Astrophysics', which considers hov telescopes magnify distant objects, develops understanding of stars and galaxie and explores our current understanding of the universe, black holes, neutron stars and dark energy.

The A Level course is assessed through three 2 hour exams. Paper 1 focuses on sections 1-5, Paper 2 focuses on sections 6-8, and Paper 3 is on the optional module.

Good mathematical skills are a pre-requisite for the course and a minimum Grade 6 in GCSE Mathematics is expected. Clearly it is an advantage to study Mathematics at A Level but this is not essential and the Physics department provides extra help for those students who don't.

Practical work is an important part of the course and you are trained to become proficient in using a wide variety of scientific apparatus. This rewarding and enjoyable aspect of the course is designed to reinforce theoretical work and is assessed by the required practical tasks and subsequent questions in the final examination paper.

A Level Physics is clearly important for further study in Science and Engineering subjects, but i also highly regarded by employers and can provide a route to more diverse areas of further education and employment. As such, career opportunities arising from Physics qualifications are numerous and wide-ranging.

