PHYSICS

Course content

A Level Physics is excellent for developing a range of skills – ones which are highly valued by employers. The ability to think critically about data, to appreciate the value of evidence and to make simplifying assumptions are all part of the course. In addition, success at A Level suggests strong numerical ability, problem-solving skills and the ability to write accurately about scientific concepts.

We follow the OCR Physics Specification A and topics include:

Year 12

Forces and motion
Work, energy and power
Materials and Engineering (Dr Short's favourite)
Newton's laws of motion and momentum
Electrons, waves and photons
Electrical circuits (Mr Petts's favourite)
Waves
Quantum physics (Mr Grisedale's favourite)
Practical Skills

Year 13

Thermal physics
Circular motion and Simple Harmonic Motion
Gravitational fields
Astrophysics and cosmology
Electric and Magnetic fields
Electromagnetism
Nuclear and particle physics (Mrs Horsley's favourite)
Medical imaging
Practical Skills

Assessment

Three papers at the end of Upper Sixth:

- Paper 1: Modelling Physics (Physics on a large scale)
- Paper 2: Exploring Physics (Physics on a small scale)
- Paper 3: Unified Physics (Physics on all scales)

In addition, all pupils complete twelve required experiments. On the basis of these, they receive a PASS / FAIL practical endorsement, though this does not contribute to the final grade.

Suggested reading

If you are considering A Level Physics you should look at a recent A Level textbook to gain a flavour of the subject. There are popular introductions to A Level topics such as quantum Physics in the library, and many excellent YouTube channels.

Complementary subjects

Students studying Physics often study Mathematics, Computing or other Sciences. While Mathematics is not essential, you will need good algebraic skills and the ability to process data accurately. The mathematical demands increase in the second year, where fluent algebra is essential if you are to gain the most from the course.

What next?

Physics A Level is a highly regarded qualification, leading to a huge range of possible degrees and careers from IT to law, as well as scientific research. Physics is a useful A Level if you plan to study **Medicine**, and is vital for degrees in **Engineering**. Those studying Physics often go on to take degrees in subjects such as **Engineering, Physics, Mathematics, Chemistry, Economics and Medicine.**

Extension opportunities

A trip to CERN in Geneva is offered, usually in the spring term. Some pupils also work on Science/ Engineering projects under the guidance of a member of staff.

We run practice classes for the National Physics Olympiad competition. Preparatory classes are provided for the Oxford Physics Aptitude test. Pupils are encouraged to attend Headstart Engineering taster courses, and many do so at the end of Year 12.

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