



Have you ever wondered ...

- Why the universe behaves the way it does?
- How ultrasound can create a picture?
- How fast you would have to travel to fool a speed camera?
- What force would be necessary to stop a formula one car?
- What are CERN looking for?

A Level Physics A

Physics A Level is one of the most universally accepted qualifications for progression to university. The course content covers the basis of how things work, from the constituent parts of atoms out to the extent of the universe. You will integrate the concepts studied with a range of practical experiments throughout each topic giving the course both an academic and practical focus. You will learn to apply your knowledge of the key concepts to solve problems in a range of different contexts and applications.

Key features

- OCR Physics A is a well established course built on many years of experience, covering the knowledge and understanding necessary to progress to STEM degrees and careers.
- Incorporates both Astrophysics and Medical Imaging.
- Physics is one of the top three A Levels in terms of eligibility for degree entry.

What's included?

- Development of practical skills in physics
- Physical quantities and units
- Making measurements and analysing data
- Nature of quantities
- Motion
- Forces in action
- Work, energy and power
- Materials
- Momentum
- Charge and current
- Energy, power and resistance
- Electrical circuits
- Waves
- Quantum physics
- Thermal physics
- Circular motion
- Oscillations
- Gravitational fields
- Astrophysics and cosmology
- Capacitors
- Electric fields
- Electromagnetism
- Nuclear and particle physics
- Medical imaging.

Emphasis throughout the course is on developing knowledge, competence and confidence in **practical skills** and **problem solving**.

How will you be assessed?

- A Level is covered by **three examinations**:
- Total of **6 hours** of examinations (2 x 2 hours 15 minutes and 1 x 1 hour 30 minutes) taken at the end of the course.
- A wide range of questions types which include **multiple choice, short answer** and **extended response** questions.

What are the benefits?

- Essential for **access** to physics and engineering courses.
- **Highly regarded** for other subjects such as medicine, law and economics because of the thinking skills and problem solving involved.
- Subject cross-over with Maths and Chemistry. Makes Maths, Physics and Chemistry a powerful combination to **optimise** your A Level grades.

Practical endorsement

Wide range of **practical experience** incorporating apparatus, skills and techniques.

With experiments such as;

- Measuring resistance in a circuit with various resistor combinations
- Obtaining a value for absolute zero
- Analysing the discharge of a capacitor
- Obtaining a value for 'g' from a pendulum.

Are you . . . ?

- Interested in getting a qualification that leads to lots of **different options** at university, from Theoretical Physics to Applied Physics, Engineering and Mathematics?
- Interested in **STEM** careers?
- **Curious** about how things work?
- Interested in **problem solving**?
- Interested in doing a wide variety of **practical experiments** to test hypotheses?
- Curious how the universe works?
- Interested in how **new particles** are discovered?

Where can the qualification take me?

- **STEM degrees**, varieties of Physics, Maths and Engineering.
- **Advanced apprenticeships** in industry, at present aerospace, nuclear power generation and electrical power distribution.

Thought provoking questions

- If you are, gravitationally speaking, attractive?
- Is it really true that what goes up must come down?
- What does uncertainty really mean when we talk about measurements?
- Why do gravitational forces decrease as we travel away from the earth?
- What forces do you experience on a rollercoaster?