

OCR A (H556) . YEAR 12 PREPARATION

Moving from GCSE to OCR A Level Physics

A practical guide to the jump from GCSE into the first year of OCR A Level Physics (H556), with the maths you need, the topics ahead, worked examples and a realistic summer plan.

For Year 11 pupils

OCR A H556

2-3 short sessions per week

Is OCR A Level Physics harder than GCSE?

Yes - but not because the ideas are impossible. The questions just expect more decision-making.

GCSE-STYLE QUESTION

A car travels 100 m in 5.0 s. Calculate its speed.

OCR A AS-STYLE QUESTION

A trolley passes through two light gates 0.100 m apart. The timer records 0.042 s at the first gate and 0.038 s at the second. Explain how these readings show whether the trolley is accelerating.

What changes

- 1. Equations become tools, not facts
- 2. Maths becomes part of the physics
- 3. Explanations need precision and graphs do real work

The GCSE topics to lock down first

Forces and motion

speed, distance, time, acceleration, resultant force and Newton's laws, distance-time and velocity-time graphs

Energy

kinetic and gravitational PE, work, power, efficiency, conservation of energy

Electricity

current, p.d., resistance, charge, series and parallel circuits, circuit diagrams

Waves and atomic structure

wave speed, frequency, wavelength, reflection, refraction, EM spectrum, nuclear model, radiation, half-life

Key skills to nail

- Rearrange equations fluently BEFORE you put numbers in.
- Use standard form and unit prefixes (k, m, micro, n) without slipping.
- Read graphs: on a velocity-time graph the gradient is acceleration and the area is displacement.
- Pick the physics principle first, then choose the equation.
- Always write units and check the answer is a sensible size.

Common mistakes to avoid

- Looking for the exact equation too quickly
- Writing answers without units
- Rounding too early
- Treating practical work as separate

Your summer in 6 steps

Around 2-3 short sessions per week, each 30-45 minutes. Enough to make a real difference without ruining your summer.

- 1 Week 1: Refresh core GCSE equations - Speed, acceleration, force, energy, power, charge, current, p.d., resistance, wave speed.
- 2 Week 2: Algebra and standard form - Rearranging with squares and roots, powers of ten, prefixes, calculator technique.
- 3 Week 3: Graph skills - Axes, scales, lines of best fit, gradients and areas.
- 4 Week 4: Forces and energy - Mechanics is one of the first major AS topics.
- 5 Week 5: Electricity and circuits - Current, p.d., resistance, series and parallel, I-V characteristics.
- 6 Week 6: Unfamiliar problem solving - Practise questions that feel slightly unfamiliar without a memorised method.

Preview your AS course (OCR A, Modules 2-4)

These are the topics you will meet in the first year of OCR A Physics. Tick the ones you have already heard of or feel ready for - it shows you how much of GCSE you can build on.

- Module 2: Foundations of Physics**
2.1 Physical quantities and units - 2.2 Making measurements and analysing data - 2.3 Nature of quantities (scalars/vectors)
- Module 3: Forces and Motion**
3.1 Motion (kinematics) - 3.2 Forces in action - 3.3 Work, energy and power - 3.4 Materials (stress/strain/Young modulus) - 3.5 Newton's laws and momentum
- Module 4: Electrons, Waves and Photons**
4.1 Charge and current - 4.2 Energy, power and resistance - 4.3 Electrical circuits - 4.4 Waves & superposition - 4.5 Quantum physics (photoelectric effect)

Questions pupils ask

Is OCR A Level Physics (H556) harder than GCSE?

It is more demanding because you apply ideas more flexibly, the maths matters more, and questions are less predictable. The ideas build on GCSE, so strong foundations make the jump much easier.

What should I revise before starting OCR A Level Physics?

Revise GCSE forces, motion, energy, electricity, waves and atomic structure, plus equations, units, standard form, graph skills and rearrangement. Mechanics and electricity are especially useful early on.

Do I need to learn the AS course over summer?

No. It is better to strengthen GCSE foundations and maths fluency so you arrive ready to learn, rather than burned out from teaching yourself the whole course.

Where to practise: join PhysicsUK

This guide gets you ready. PhysicsUK is where you practise the skills and prove you can do them:

- ExamBOT - exam-style papers marked instantly with feedback
- ProblemBOT - multi-step problems with full worked solutions
- QWC - written answers marked against the mark scheme
- MCQ quizzes and a daily question to keep knowledge warm
- Track your progress and target your weakest topics

Try it free as a guest, then become a member to unlock full practice, save your progress and see what you can achieve.

Start now at www.physicsuk.co.uk

Read the full interactive guide (quizzes, trainers and audio) at:

www.physicsuk.co.uk/ocr-a-level-physics-gcse-to-as-transition-guide