



Physics

OCR-A, H420



Sir Isaac Newton
Sixth Form

What GCSE grades do I need to study physics at Sir Isaac?

- You will need higher tier GCSE physics grade 5+ or trilogy 5,5
 - GCSE 6+ mathematics
- Must also choose to study A-level maths

Key Yr12 topics

- Forces in Action
- Work, Energy, Power
- Materials
- Newton's Laws
- Momentum
- Charge and Current
- Electrical Circuits and Resistance
- Quantum Physics and Waves

Key Yr13 topics

- Thermal Physics
- Circular Motion and Oscillations
- Gravitational Fields
- Astrophysics
- Capacitors
- Electric Fields and Electromagnets
- Nuclear and Particle Physics
- Medical Imaging

Modelling physics (01)	2 hrs 15 mins	37%
Exploring physics (02)	2 hrs 15 mins	37%
Unified physics (03)	1 hr 30 mins	26%
Practical endorsement in physics (04)	Non-Exam	



Frequently Asked Questions

Q: Can I study A-level physics without studying A-level mathematics?

A: Physics and mathematics are two streams of science that are very complimentary and cross over a lot through the two years of study. It is, therefore, a requirement here at Sir Isaac that all physicists study A-level mathematics.

Q: How much practical work is there?

A: There are 12 key practical skills that you will work towards throughout your studies. The theory behind the practical is then assessed in the final exams. This is around 30 practicals you will complete throughout the two years

Q: How much overlap is there with other subjects?

A: Alongside the strong overlap with mathematics where you will encounter some of the material as is taught in physics, there is a small overlap with chemistry related to the study of ideal gases and thermodynamics.

Q: Are there any trips in physics?

A: In the past we've visited the Large Hadron Collider at CERN and aim to run this trip each year. We've also visited the universities of Birmingham and Cambridge as a taste of university physics lectures. For the future, we'll run an event at Lotus, looking at the engineering, physics and product design process that goes into designing a car.

Q: What is the gender balance like in Physics?

A: In recent years female students have composed around 15% of the physics cohort, spread across the classes