



PHYSICS

Examination Board: AQA
Specification: Advanced GCE 7408

Why should I study Physics?

Without Physics all the gadgets that we take for granted like laptops and mobile phones wouldn't be here. Nor would the electricity supply that charges them and powers so many other things we use every day. Did you know that a physicist invented the World Wide Web? It's hard to imagine a world without the Internet, but when you were born almost no one had heard of it. Physicists are constantly finding new things. They have recently shown that teleportation is possible – who knows what that will lead to in a few years' time?

If you have an enquiring mind, are always asking why things happen, then Physics will help you find the answers. It forms the basis of all modern technologies and holds the future to global well-being.

What will I learn about?

First year of A-level

1. Measurements and their errors.
2. Particles and radiation.
3. Waves, including progressive waves, interference and diffraction.
4. Mechanics and energy, including projectile motion and Newton's laws of motion.
5. Electricity, including current/voltage characteristics, circuits, electromotive force and internal resistance.

Second year of A-level

6. Further mechanics and thermal physics, including periodic motion, thermal energy transfer and molecular kinetic theory model.
7. Fields, including Newton's law of gravitation, orbits of planets and satellites and magnetic flux density.
8. Nuclear physics, including evidence for the nucleus, radioactive decay and nuclear instability.
9. Turning points in Physics.

How will I be taught?

Wherever possible we want you to see and discover for yourself so practical activities are used when appropriate, some of these will be in groups, while others may be individual tasks. There are many opportunities for collaborative work and you will be expected to make contributions within the group. Questions are encouraged and links are made to current scientific advances wherever possible. There will, of course, be formal teaching, but on other occasions you will be expected to do research and present your own notes. There is a course text book for each year and past examination questions are used to sharpen your examination technique. Extensive links with the Physics Department at Birmingham University enhance the learning experience through an evening lecture series in the autumn and early spring terms.



KING EDWARD VI

Handsworth School For Girls

Application beyond school:

Employers and universities are always impressed by a good A level grade in Physics, it shows the ability to think methodically and the capacity to take on and understand knowledge which sometimes seems counter intuitive. A Level Physics is a doorway to a technical degree leading to a very wide range of careers including Aeronautical, Electrical and Mechanical Engineering, GeoPhysics, Material science, Forensic science, Meteorology, Medical Physics, AstroPhysics, Architecture, Software engineer and many, many more.

Assessment Format:

Level	Component	Requirements	Duration	Marks
A Level	Paper 1	Topics 1 – 5 and 6.1	2 hours Year 13	85 34% of A Level
A Level	Paper 2	Topics 6.2, 7 and 8	2 hours Year 13	85 34% of A Level
A Level	Paper 3	Practical skills plus option sections	2 hours Year 13	80 32% of A Level
A Level	Practical Assessment	12 set practicals throughout the course. 15% of examinations will assess practical skills		

Are there any special requirements?

You will have achieved either GCSE Physics or Core and Additional Science to at least grade 7. There is a lot of mathematical content within A Level Physics so we would require a GCSE Mathematics grade 7, 8 or 9. The A level course does not explicitly require AS level Mathematics, but if you are considering a career in Engineering or Physics then Mathematics A level is required and Further Mathematics A level makes a very good partner subject. This will prepare you for the mathematics you will face in your first year at University.