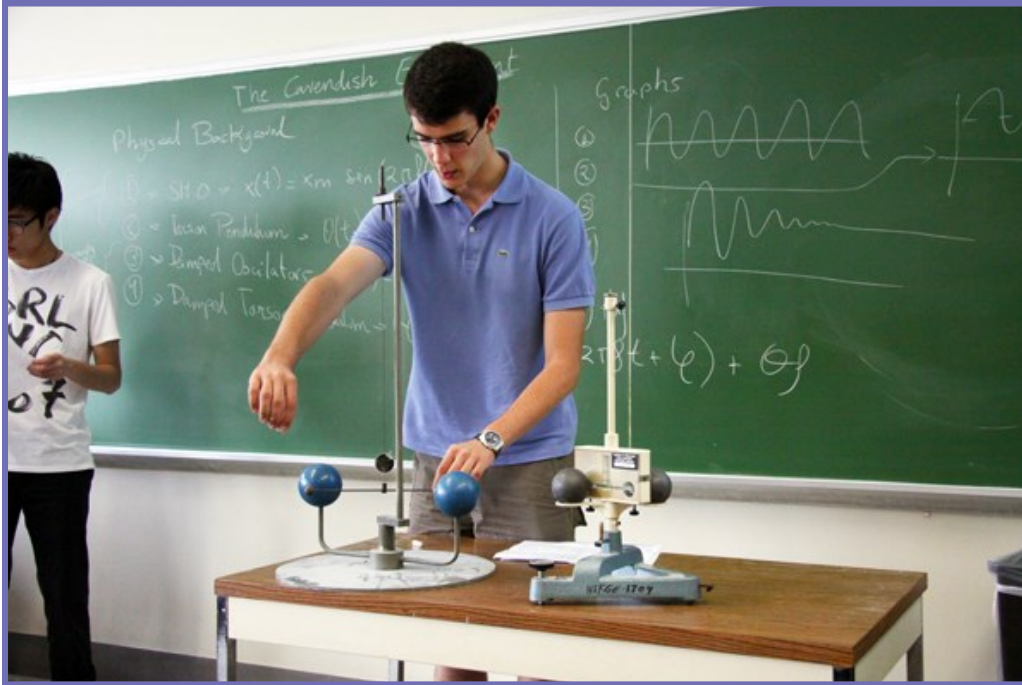


Why choose Physics at Highbury Grove: The Physics department at HGS aims to inspire students to ask questions and stretch their understanding about the universe. During the A-level course we organise trips to different exciting centres of Physics research. In the past we have visited the world-famous Culham Centre for Fusion Energy, where we put on hardhats to join real fusion engineers and witness the incredible experiments they are doing to revolutionise how we use energy.

We also regularly have guest speakers who have studied or work with physics at various levels.



Why choose Sociology: Physics is the most fundamental of all the natural sciences and its theories attempt to describe the behaviour of the smallest building blocks of matter, light, the universe and everything in between.

If you are already interested in GCSE Physics, you are good at maths, and you would like to know more about fascinating ideas such as quantum mechanics, relativity and cosmology, then physics may be for you. If you also enjoy using maths to solve problems then you love the A-level Physics course!

Future Prospects: A physics qualification at A-Level is essential for careers in engineering. However, it can also open doors to other careers that value problem solving skills.

Medicine

Whether you want to be a nurse, a surgeon or medical physicist - understanding physics is important if you want to work in modern medicine. Physics has revolutionized the diagnosis and treatment of illness. Surgery is now routinely carried out using lasers, cancer is treated using radiation and the inside of our bodies are imaged using X-rays, ultrasound, NMR and PET scans. More recently, new techniques have developed, such as using nanobots to target individual cancer cells

Sports and Games

Physics is behind so much of the technology in sports and games; everyone from the designer trying to build a better bike for the Tour-de France to the games programmer trying to build a more realistic computer games needs physics

Finance and Law

The link between physics and jobs in law or finance may not be obvious, but many people with a physics background work in these areas. In finance, it is a physicist's ability to model complex systems that is particularly valued; billions of pounds depend on predicting the future behaviour of global markets. A physics education is also important to law. Forensics requires a detailed understanding of how objects move and the forces involved when analyzing the scene of a crime or accident

Entry Requirements: Six GCSEs at grade C or above including minimum grade B in English and high grade B in Maths and minimum BB in Double Award Science or BBB Triple Award Science.

Enrichment Opportunities: During the A-level course we organise trips to different exciting centres of Physics research. In the past we have visited the world-famous Culham Centre for Fusion Energy, where we put on hardhats to join real fusion engineers and witness the incredible experiments they are doing to revolutionise how we use energy.

What I will learn on this course:

- Particles and radiation
- Waves
- Mechanics and materials
- Electricity

- Thermodynamics
- Fields
- Nuclear physics

You will additionally study one of the following options.

1. Astrophysics
2. Medical physics
3. Engineering and physics
4. Turning points in physics
5. Electronics



Assessment and Examination: Sociology At Highbury Grove School, we follow the AQA specification AS – 7407; A2 - 7408.

AS course:

The AS course involves studying 5 units including:

1. Measurement and their errors
2. Particles and radiation
3. Waves
4. Mechanics and materials
5. Electricity

At the end of the AS course you will undertake 2 exams each 1 hour 30 minutes long. These exams will test all the knowledge gained in units 1-5 and the practical's carried out throughout the year.

You will also carry out 6 assessed practical's. These will be written up in class and knowledge of these practical's and the methods used to carry them out will be essential to answer the exam questions.

A2 course:

The A2 course will involve studying units 1-5 as in the AS level, and then in year 13 you will additionally study the following:

6. Further mechanics and thermal physics
7. Fields and their consequences
8. Nuclear physics

You will additionally study one of the following options.

6. Astrophysics
7. Medical physics
8. Engineering and physics
9. Turning points in physics
10. Electronics

It should be noted that not all of these options will be available. The options available will depend on the preference of the students entering year 13.

You will additionally carryout at least 12 assessed practical's throughout the 2 year course. You will receive a pass/fail mark for successfully completing all of these at the end of year 13.

At the end of year 13 you will undertake three 2 hour exams that will test all the knowledge from units 1 – 8, the option module and the practical work.

Note on New AS / A2 level

It should be noted that with the new specification the AS and A2 courses are separate. All exams will be carried out at the end of the courses. This means that you must state at the beginning of year 12 if you wish to take only the AS component or the full A2 level. If you take the AS level and wish to carry on the course into A2 then the exams that you take for your AS will not count towards your A2 level. All the exams for the A2 level will be taken at the end of year 13.

For more information about the course you can look on the AQA website:

www.aqa.org.uk/subjects/science/as-and-a-level/physics-7407-7408