

2. Course overview

Studying A level Physics at George Dixon Academy will enable you to develop:

- an enthusiasm for Physics and an understanding of how physical concepts are relevant to real world experiences
- practical skills alongside an understanding of physical concepts and principles
- an appropriate and relevant foundation of knowledge that can be used as a stepping stone to the future study of Physics in Higher Education and skills that lay the groundwork for careers in science or engineering

What will I learn?

The subject content consists of the following units:

Core content:

- Unit 1: Measurements and their errors
- Unit 2: Particles and radiation
- Unit 3: Waves
- Unit 4: Mechanics and materials
- Unit 5: Electricity
- Unit 6: Further mechanics and thermal physics
- Unit 7: Fields and their consequences
- Unit 8: Nuclear physics

Options:

- Unit 9: Astrophysics
- Unit 10: Medical physics
- Unit 11: Engineering physics
- Unit 12: Turning points in physics
- Unit 13: Electronics

Year 12 Physics students will study:

- Units 1 – 5

There will be a mock examination at the end of the year. It is expected that you will have passed this mock examination in order to continue studying A-level Physics in year 13.

At A-level you will study for 3 examinations and you will complete a portfolio of practical assignments.

A-level Physics students will study and be assessed on:

- Units 1 – 8
- One of the option topics (Units 9 - 13)

Students at George Dixon academy usually study Unit 9: Astrophysics.

3. Assessment outline

A-level Physics is a stand-alone (2 year) course and consists of 3 examinations and a portfolio of practical work. The practical work will contribute to a certificate of competency.

Paper 1:

- units 1 - 5 and 6.1 (Periodic motion)
- written exam: 2 hours
- 85 marks (34% of A-level)
 - 60 marks of short and long answer questions and 25 multiple choice questions on content

Paper 2:

- unit 6.2 (Thermal Physics) and units 7 and 8 (assumed knowledge from sections 1 to 6.1)
- written exam: 2 hours
- 85 marks (34% of A-level)
 - 60 marks of short and long answer questions and 25 multiple choice questions on content

Paper 3:

- Part A: compulsory questions based on practical skills and data analysis
- Part B: questions based on the pupils chosen option (unit 9, 10, 11, 12 or 13)
- written exam: 2 hours
- 80 marks (32% of A-level)
 - 45 marks of short and long answer questions on practical experiments and data analysis
 - 35 marks of short and long answer questions on optional topic

4. Entry requirements

Minimum:

- Grade B in GCSE Physics
- Grade 6 in GCSE Mathematics

5. Career pathways

Education progression

A level Physics, especially in combination with two other sciences (such as Mathematics, Chemistry and Biology) can support applications for a wide variety of science degrees ranging alphabetically from aeronautical engineering to veterinary science. A level Physics is a desired subject for pupils wishing to study medical sciences such as medicine, dentistry, pharmacy and optometry, as well as the more mathematically subjects such as surveying and computing. Physics can be studied at university as a pure subject or as a Joint Honours degree in combination with just about everything from Business and Management to Sports Science.

Career progression

A physics qualification sets you up well for research-based roles and positions in other sciences but it is also useful for careers in business, finance, IT and engineering. .

Industries employing physicists are varied and include:

- aerospace and defense
- education
- energy
- engineering
- instrumentation
- manufacturing
- oil and gas
- science and telecommunications