



TRAILL
INTERNATIONAL SCHOOL

Physics

IGCSE



YEAR 9 OPTION BOOKLET: 2024-2026

Subject: Physics

Course Title: Cambridge IGCSE Physics - 0625

Why study this subject: Physics is the study of the behaviour of matter and how the fundamental forces of nature shape the world around us. Physics also considers the interaction of space, energy and time without which there would be nothing in existence. The entire universe is built upon the principles revealed by a study of Physics. Taken together with either one or both of Chemistry and Biology this course gives students a thorough understanding of the world around us. As well as a subject focus, the physics syllabus aims are:

1. to provide an enjoyable and worthwhile educational experience for all learners, whether or not they go on to study science beyond this level
2. to enable learners to acquire sufficient knowledge and understanding to:
 - become confident citizens in a technological world and develop an informed interest in scientific matters
 - be suitably prepared for studies beyond Cambridge IGCSE
3. to allow learners to recognise that science is evidence based and understand the usefulness, and the limitations, of scientific method
4. to develop skills that:
 - are relevant to the study and practice of physics
 - are useful in everyday life
 - encourage a systematic approach to problem-solving
 - encourage efficient and safe practice
 - encourage effective communication through the language of science
5. to develop attitudes relevant to physics such as:
 - concern for accuracy and precision
 - objectivity
 - integrity
 - enquiry
 - initiative
 - inventiveness
6. to enable learners to appreciate that:
 - science is subject to social, economic, technological, and ethical influences and limitations
 - the applications of science may be both beneficial and detrimental to the individual, the community and the environment

Assessment at a glance:

All candidates must enter for three papers.

Core students must sit Papers 1,3 and 6

Extended students must sit Papers 2,4 and 6

Paper 1 (CORE) 45 minutes

A multiple-choice paper consisting of 40 items of the four-choice type.

Questions will be based on the Core syllabus content.

This paper will be weighted at 30% of the final total mark.

Paper 3 (CORE) 1 hour 15 minutes

A written paper consisting of short-answer and structured questions.

Questions will be based on the Core syllabus content.

80 marks

This paper will be weighted at 50% of the final total mark.

Paper 6 (ALL STUDENTS) 1 hour

Alternative to Practical Test

The paper is structured to assess grade ranges A*–G.

40 marks

This paper will be weighted at 20% of the final

Curriculum content:

All candidates study the following topics:

General Physics

1.1 Length and time

1.2 Motion

1.3 Mass and weight

1.4 Density

1.5 Forces

1.6 Momentum (Extended candidates only)

1.7 Energy, work and power

1.8 Pressure

2. Thermal physics

2.1 Simple kinetic molecular model of matter

2.2 Thermal properties and temperature

2.3 Thermal processes

3. Properties of waves, including light and sound

3.1 General wave properties

total mark.

Paper 2 (EXTENDED) 45 minutes

A multiple-choice paper consisting of 40 items of the four-choice type.

Questions will be based on the Extended syllabus content (Core and Supplement).

This paper will be weighted at 30% of the final total mark.

Paper 4 (EXTENDED) 1 hour 15 minutes

A written paper consisting of short-answer and structured questions.

Questions will be based on the Extended syllabus content (Core and Supplement).

80 marks

This paper will be weighted at 50% of the final total mark.

- 3.2 Light
- 3.3 Electromagnetic spectrum
- 3.4 Sound

4. Electricity and magnetism

- 4.1 Simple phenomena of magnetism
- 4.2 Electrical quantities
- 4.3 Electric circuits
- 4.4 Digital electronics (Extended candidates only)
- 4.5 Dangers of electricity
- 4.6 Electromagnetic effects

5. Atomic physics

- 5.1 The nuclear atom
- 5.2 Radioactivity

6. Space physics

- 6.1 The Earth
- 6.2 The solar system
- 6.3 The sun as a star
- 6.4 The universe

Practical basis of Science:

All scientific subjects are, by their nature, experimental. So it is important that all students learn those practical skills that allow them to perform investigations into the topics of study. It is only through a program of theoretical study underpinned by rigorous experimental practice that students will be properly prepared for further study in the Sciences at AS or A-level and into University beyond that.

This approach will not only provide opportunities for developing experimental skills but will increase the appeal of the course, and the enjoyment of the subject. Practical work helps learners to acquire a secure understanding of the syllabus topics and to appreciate how scientific theories are developed and tested. It also promotes important scientific attitudes such as objectivity, integrity, co-operation, inquiry and inventiveness.

Experimental skills and investigations

The Cambridge exam board states that candidates should be able to:

1. Demonstrate knowledge of how to safely use techniques, apparatus and materials (including following a sequence of instructions where appropriate)
2. Plan experiments and investigations
3. Make and record observations, measurements and estimates
4. Interpret and evaluate experimental observations and data
5. Evaluate methods and suggest possible improvements.