Mathematics

IGCSE Mathematics

YEAR 9 OPTION BOOKLET: 2024 - 2026

Subject: Mathematics

Course Title: IGCSE Mathematics

Careers: Mathematics is a required subject for all careers. Employers always look for grade C or above in Mathematics at IGCSE level.

Why study this subject: Because you have to! Mathematics is deemed by the British Educational Authority to be so important in a child's future that any pupil studying at a British Curriculum School must study Mathematics up to IGCSE level.

Cambridge IGCSE Mathematics is accepted by universities and employers as proof of mathematical knowledge and understanding. Successful Cambridge IGCSE Mathematics candidates gain lifelong benefits, including:

- the development of their mathematical knowledge
- confidence, by developing a feel for numbers, patterns and relationships
- an ability to consider and solve problems and present and interpret results
- skills in communication and reasoning using mathematical concepts
- a solid foundation for further study.

Syllabus aims:

The aims are to enable candidates to:

- develop a positive attitude towards mathematics in a way that encourages enjoyment, establishes confidence and promotes enquiry and further learning
- develop a feel for number and understand the significance of the results obtained
- apply their mathematical knowledge and skills to their own lives and the world around them

- use creativity and resilience to analyse and solve problems
- communicate mathematics clearly
- develop the ability to reason logically, make inferences and draw conclusions
- develop fluency so that they can appreciate the interdependence of, and connections between, different areas of mathematics
- acquire a foundation for further study in mathematics and other subjects.

Assessment overview:

All candidates take two components.

Candidates who have studied the Core subject content, or who are expected to achieve a grade D or below, should be entered for Paper 1 and Paper 3. These candidates will be eligible for grades C to G.

Candidates who have studied the Extended subject content, and who are expected to achieve a grade C or above, should be entered for Paper 2 and Paper 4. These candidates will be eligible for grades A* to E.

Candidates should have a scientific calculator for Paper 3 and Paper 4. Calculators are **not** allowed for Paper 1 and Paper 2. At the beginning of year 10 you will be placed in a class based on your ability. This is to help you work with others at your level and choose whether you want to partake in the Core curriculum (grades C-G) or Extended curriculum (grades A* - E) exams in Year 11.

Component	**Time**	**Weighting**
Paper 1 (Core) Structured and unstructured questions. Use of a calculator is **not** allowed. Externally assessed**. 80 marks**.	**1 hour 30 minutes**	**50%**
Paper 2 (Extended) Structured and unstructured questions. Use of a calculator is **not** allowed. Externally assessed. **100 marks**.	**2 hours**	**50%**
Paper 3 (Core) Structured and unstructured questions. A scientific calculator is required. Externally assessed. **80 marks**.	**1 hour 30 minutes**	**50%**
Paper 4 (Extended)	**2 hours**	**50%**

Structured and unstructured questions. A scientific calculator is required. Externally assessed. **100 marks**.		

- Algebraic or graphical calculators are not permitted. Three significant figures will be required in answers except where otherwise stated.
- Candidates should use the value of π from their calculators if their calculator provides this. Otherwise, they should use the value of 3.142 given on the front page of the question paper only.
- Tracing paper may be used as an additional material for all of the written papers.

Curriculum content:

Core - Carry out calculations involving the perimeter and area of a rectangle and triangle, the circumference and area of a circle, the area of a parallelogram and a trapezium, the volume of a cuboid, prism and cylinder and the surface area of a cuboid and a cylinder.

Extended - Solve problems involving the arc length and sector area as fractions of the circumference and area of a circle, the surface area and volume of a sphere, pyramid and cone (given formulae for the sphere, pyramid and cone).

- Number, set notation and language
- Squares and cubes+
- Vulgar and decimal fractions and percentages+
- Ordering+
- Standard form+
- The four rules estimation+
- Limits of accuracy
- Ratio, proportion, rate
- Percentages
- Use of an electronic calculator+
- Measures+
- Time+
- Money+
- Personal and household finance+
- Graphs in practical situations

- Graphs of functions
- Algebraic representation and formulae
- Algebraic manipulation
- Functions*
- Indices
- Solutions of equations and inequalities
- Linear programming*
- Geometrical terms and relationships
- Symmetry
- Angle properties
- Mensuration
- Trigonometry
- Further Trigonometry*
- Statistics
- Probability
- Conditional Probability*
- Vectors in 2D
- Vector Geometry*
- Differentiation*
- Transformations

+ Core only * Extended only