



Maths IGCSE
Curriculum



Cambridge IGCSE 0980

Introduction

This document outlines the curriculum for students studying IGCSE Mathematics at LWSF during Years 10 and 11. The course follows the Cambridge IGCSE Mathematics syllabus and is designed to develop students' mathematical skills and understanding. It will equip them with the necessary knowledge and tools to succeed in future studies and real-world applications.

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Aims

The primary goals of this course are to:

- Develop students' knowledge and understanding of mathematical concepts.
- Enhance students' problem-solving, reasoning, and analytical skills.
- Foster a positive attitude towards mathematics and encourage enjoyment of the subject.
- Prepare students for further study in mathematics or related fields.
- Enable students to apply mathematical knowledge and skills to real-world situations.
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What The Student Will Learn

Course Overview

IGCSE Mathematics is a comprehensive course that covers a wide range of mathematical topics. It is designed to provide a strong foundation for further study in mathematics or other subjects. The course emphasises problem-solving, logical reasoning, and the ability to communicate mathematical ideas effectively.



Core/Standard Mathematics Topics

Students following the Core Mathematics course will learn about the following topics:

1. Number:

- a.Types of Number
- b.The Number System
- c.Number Toolkit
- d.Prime Factors, HCF & LCM
- e.Powers, Roots & Standard Form
- f.Fractions Toolkit
- g.Operations with Fractions
- h.Percentages Toolkit
- i.Simple & Compound Interest
- j.Working with FDP
- k.Ratio & Proportion
- l.Money Calculations
- m.Time, Currency & Conversions
- n.Compound Measures - Speed, Density, Pressure
- o.Rounding, Estimation and Bounds
- p.Using a Calculator

2.Algebra:

- a.Algebra Toolkit
- b.Algebraic Roots & Indices
- c.Expanding & Factorising Brackets
- d.Linear Equations
- e.Rearranging Formula
- f.Simultaneous Equations
- g.Sequences

3.Coordinate Geometry & Graphs:

- a.Linear Graphs
- b.Further Graphs
- c.Real-Life Graphs

4. Geometry:

- a.Geometry Toolkit
- b.Basic Angle Properties
- c.Angles in Polygons & Parallel Lines
- d.Bearings, Constructions & Scale Drawings
- e.Circle Theorems



5. Lengths, Areas & Volumes

- a. Area & Perimeter
- b. Circles, Arcs & Sectors
- c. Volume & Surface Area
- d. Congruence & Similarity

6. Pythagoras & Trigonometry

- a. Pythagoras
- b. Trigonometry

7. Vectors & Transformations:

- a. Vectors
- b. Transformations

8. Statistics:

- a. Averages & Range
- b. Statistical Diagrams
- c. Scatter Graphs & Correlation

9. Probability

- a. Basic Probability
- b. Set Notation & Probability Diagrams

Extended Mathematics

Students following the Extended Mathematics course will study all the topics covered in Standard Mathematics, as well as additional advanced topics, including:

1. Number:

- a. Number Toolkit
- b. Set Notation & Venn Diagrams
- c. Prime Factors, HCF & LCM
- d. Powers, Roots & Standard Form
- e. Fractions Toolkit
- f. Percentages Toolkit
- g. Simple & Compound Interest, Growth & Decay
- h. Surds
- i. Working with FDP
- j. Working with Ratios
- k. Compound Measures - Speed, Density, Pressure
- l. Time, Currency & Conversions
- m. Rounding, Estimation and Bounds
- n. Using a Calculator



2. Algebra & Sequences:

- a. Algebra Toolkit
- b. Algebraic Roots & Indices
- c. Expanding & Factorising Brackets
- d. Linear Equations & Inequalities
- e. Quadratic Equations
- f. Rearranging Formula
- g. Simultaneous Equations
- h. Algebraic Fractions
- i. Forming & Solving Equations
- j. Functions
- k. Sequences
- l. Proportion

3. Coordinate Geometry & Graphs:

- a. Coordinate Geometry
- b. Linear Graphs
- c. Quadratic Graphs
- d. Further Graphs & Tangents
- e. Solving & Graphing Inequalities
- f. Real-Life Graphs
- g. Differentiation

4. Geometry:

- a. Geometry Toolkit
- b. Angles in Polygons & Parallel Lines
- c. Bearings, Constructions & Scale Drawings
- d. Circle Theorems

5. Lengths, Areas & Volumes:

- a. Area & Perimeter
- b. Circles, Arcs & Sectors
- c. Volume & Surface Area
- d. Congruence & Similarity

6. Pythagoras & Trigonometry:

- a. Right-Angled Triangles - Pythagoras & Trigonometry
- b. Sine, Cosine Rule & Area of Triangles
- c. 3D Pythagoras & Trigonometry
- d. Trigonometric Graphs & Equations

7. Vectors & Transformations

- a. Vectors
- b. Transformations



8. Probability:

- a. Basic Probability
- b. Probability Diagrams - Tree & Venn Diagrams
- c. Conditional Probability

9. Statistics

- a. Averages & Range
- b. Statistical Diagrams
- c. Histograms
- d. Cumulative Frequency
- e. Scatter Graphs & Correlation

Assessment

Students will be assessed through board specific written examinations at the end of Year 11. The examinations will consist of two papers for Core Mathematics or Extended Mathematics. The papers will assess students' knowledge, understanding, and application of mathematical concepts.

Additional Resources and Support

LWSF will provide students with a variety of resources and support to help them succeed in their IGCSE Mathematics studies. These may include:

- Textbook resources
- Online learning platforms
- Regular homework assignments

Evaluation and Review

The curriculum will be reviewed annually to ensure its effectiveness and alignment with the boards' defined curriculum. Feedback from students, teachers, and parents will be considered in the review process.

Updated August 2024

Next review: August 2025