Subject Overview

The Mathematics Department aims to develop, maintain and stimulate pupils' curiosity, interest and enjoyment in Mathematics. We aim to teach in a meaningful context whilst providing opportunities for pupils to use their skills creatively through problem solving and investigation.

The Mathematics Department aims to:

- develop pupils to a suitable level of competence in a range of mathematical skills;
- encourage pupils to develop personal qualities such as self-confidence and independence;
- develop pupils' understanding of mathematics in its widest context and see how it relates to themselves outside school; and
- enable pupils to develop skills which are transferable to other subjects.

Maths is all around us; in the places we live and in the things that we use. Its study develops an array of problem solving skills and reasoning which people utilise in many different walks of life. It provides the foundation for much of the work carried out in science and engineering but it is found in many other disciplines as well including medicine, design, computing, accounts, business and economics to name but a few.

Head of Department

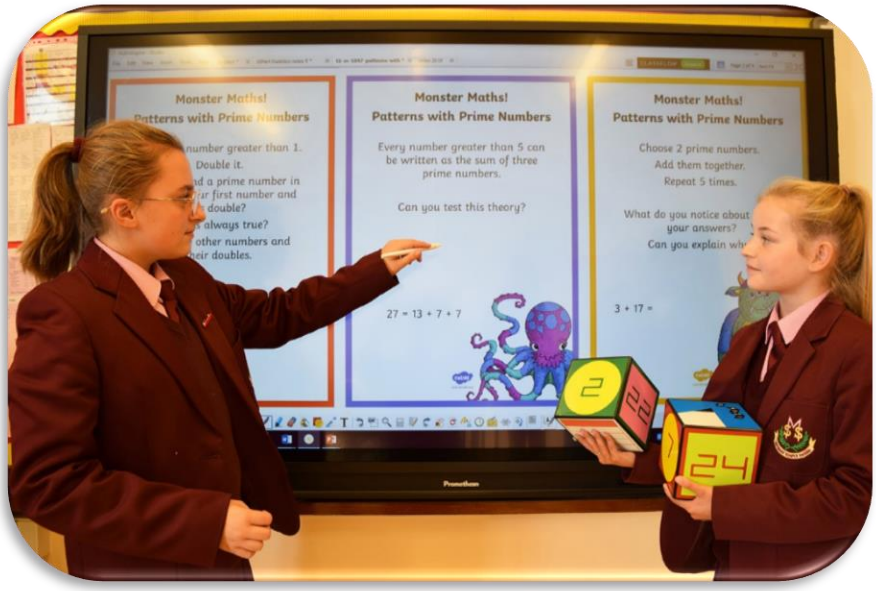
Mrs S Courtney

Key Stage 3

Year 8 - In Year 8, pupils study the following topics:

- Number
- Co-ordinates and Symmetry
- Angles
- Letters and Numbers
- Measuring Length

- Areas and Perimeters
- Fractions
- Decimals and Percentages
- Volume and Nets
- Data Handling
- Graphs
- Tables and Diagrams
- Time
- Data Handling
- Number
- Negative Numbers
- Co-ordinates
- Shape and Symmetry
- Algebra
- Perimeter, Area and Volume
- Financial Capability



Year 9 - In Year 9, pupils study the following topics:

- Algebra
- Perimeter, Area, Volume and Surface Area
- Probability
- Fractions
- Negative Numbers
- Graphs
- Decimals
- Sequences and Special Numbers
- Statistics
- Money Matters
- Inequalities
- Transformations
- Units of measure

- Perimeter, area and volume
- Angles
- Negative Numbers
- Algebra
- Fractions
- Percentages
- Circle
- Ratio
- Probability

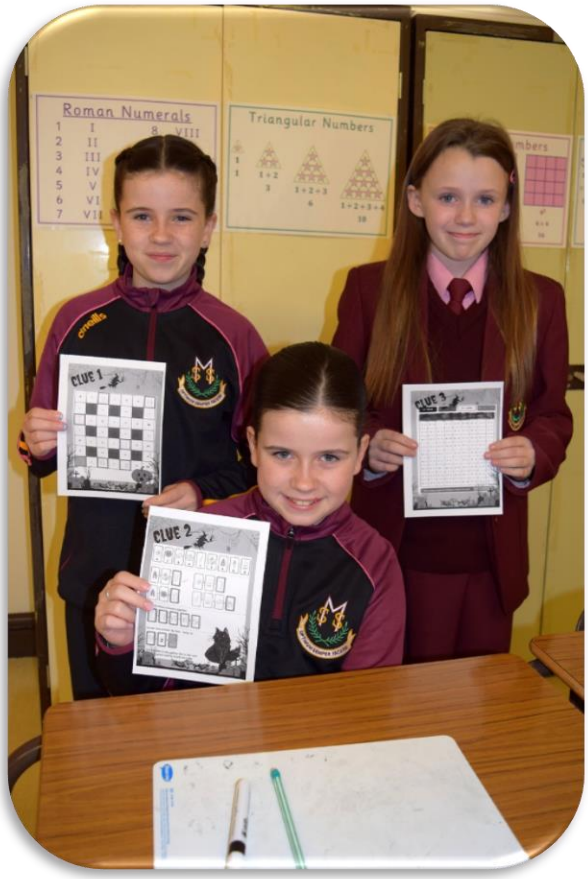
Year 10 - In Year 10, pupils study the following topics:

- Percentages
- The Circle
- Brackets and Equations
- Metric and Imperial Measures
- Linear Graphs
- Transformations
- Probability
- Making and Using Formulae
- Simultaneous Equations
- Bearings
- Statistics
- Pythagoras Theorem and Trigonometry
- Algebra
- Percentages
- Number
- Graphs
- Measures
- Statistics

Key Stage 3 Extra Curricular Activities /Trips/Industry links

The Mathematics Department contributes extensively to the school's extra-curricular provision. Extra-curricular activities include:

- Maths Fun Day for Key Stage 3
- Annual Numeracy Week celebrations
- STEM Club
- National Cipher Challenge
- UK Mathematical Challenge for Year 9
- Signature Project – small group support for Year 11 and 12 pupils.
- After school support classes for Year 11 and 12.
- Careers talks from Past Pupils
- GCSE Maths after school revision classes
- Guest Speakers from Bank
- Bright Sparks Club



Key Stage 4

Why Study the Subject

At Key Stage 4, the Mathematics Department offers Mathematics and Further Mathematics at GCSE. Pupils follow the CCEA specification. Mathematics is delivered over nine lessons per fortnight.

Through each unit at Key Stage 4, pupils will:

- develop knowledge, skills and understanding of mathematical methods and concepts;
- acquire and use problem-solving strategies;
- select and apply mathematical techniques and methods in mathematical, every day and real-world situations;

- reason mathematically, make deductions and inferences, and draw conclusions;
- interpret and communicate mathematical information in a variety of forms appropriate to the information and context; and
- acquire a foundation appropriate to the further study of mathematics and other disciplines.

Assessment Structure

All pupils in Year 11 will complete one GCSE Level Maths module at the end of Year 11 (either M1, M2, M3 or M4). All pupils will sit their completion paper (either M5, M6, M7 or M8) at the end of Year 12.

Foundation Tier

Grades C* - G can be achieved by sitting a combination of the following modules

Test M1 or Test M2 | 45%

Completion Test M5 or M6 | 55%

Higher Tier

Grades A* - D can be achieved by sitting a combination of the following modules

Test M3 or Test M4 | 45%

Completion Test M7 or M8 | 55%

Year 11 - Topics studied

The content of each GCSE Mathematics unit relates to:

- Number and Algebra;
- Geometry and Measures; and
- Statistics and Probability.

Year 12 - Topics studied

The content of each GCSE Mathematics unit relates to:

- Number and Algebra;

- Geometry and Measures; and
- Statistics and Probability.

Employability/Job Opportunities/Further Study

The study of Mathematics is useful for careers in areas such as:

- Accountancy
- Engineering
- Business
- Accountancy
- Banking
- Computing
- Engineering Maths
- Maths Teacher/ Lecture
- Statistician
- Sales/HR/Administration
- Actuary/ Insurance

Key Stage 4 Extra Curricular Activities /Trips/Industry Links

- Annual Numeracy Week celebrations
- UK Mathematical Challenge for Year 12
- Signature Project – small group support for Year 11 and 12 pupils.
- After school support classes for Year 11 and 12.
- STEM Club
- Careers talks from Past Pupils
- GCSE Maths after school revision classes
- Guest Speakers from Bank
- Bank of Ireland Money Matters Competition

Further Mathematics

A GCSE in Further Mathematics helps students to:

- use and apply standard techniques;
- reason, interpret and communicate mathematically;
- solve problems within mathematics and other contexts.

Further Maths provides an opportunity for pupils who have a particular interest in Maths and an aptitude for the subject to study it in greater depth and use real-life scenarios to help you see the how further mathematics is relevant to other subject areas, the world of work and to wider society.

Further Mathematics provides the perfect stepping stone to progress to advanced, further or higher studies of Mathematics.

This course enables students to:

- Participate in discussions, debates and interviews by sharing ideas and communicating meaning, feelings and viewpoints in a logical and coherent manner;
- Use mathematical language and notation with confidence, make predictions and select and apply mathematical concepts;
- Interpret and analyse a wide range of mathematical data and present it in a variety of formats;
- Make effective use of information and communications technology in a wide range of contexts to access, manage, select and present information, including mathematical information.

Assessment Structure

Unit 1 - Pure Mathematics | External written examination 2 hours - 50%

Unit 2 - Mechanics | External written examination 1 hours - 25%

Unit 3 - Statistics | External written examination 1 hours - 25%

Year 11 - Topics studied

The content of each GCSE Mathematics unit relates to:

- Number and Algebra;
- Geometry and Measures; and
- Statistics and Probability.

Year 12 - Topics studied

The content of each GCSE Mathematics unit relates to:

- Number and Algebra;
- Geometry and Measures; and
- Statistics and Probability.

Employability/Job Opportunities/Further Study

Mathematics is becoming increasingly important in both employment and higher education.

Studying GCSE Further Mathematics helps students to build the knowledge and skills to progress to GCE Mathematics and GCE Further Mathematics. It also helps provide progression to other post-16 subjects such as STEM, Computing, Geography or Business Studies.

A qualification in further mathematics can lead to employment in any area of work where developing knowledge and skills beyond the level of GCSE Mathematics is valued.

- Accountancy
- Engineering
- Business
- Accountancy
- Banking
- Computing
- Engineering Maths
- Maths Teacher/ Lecture
- Statistician
- Sales/HR/Administration
- Actuary/ Insurance

Key Stage 4 Extra Curricular Activities /Trips/Industry Links

- Annual Numeracy Week celebrations
- UK Mathematical Challenge for Year 12
- After school support classes for Year 11 and 12.
- STEM Club
- Careers talks from Past Pupils
- GCSE Maths after school revision classes
- Guest Speakers from Bank

Post 16

Why Study the Subject

Maths is the most popular subject choice at A-Level, and it's clear to see why. Maths can play an integral part of many careers, and can provide numerous opportunities, both academically and career-wise.

A Level Mathematics builds upon your existing knowledge and skills developed at GCSE Level. Mathematics has application in many fields including; Physics, Accountancy, Geography, Biology, Computing and Medicine.

Assessment Structure

Year 13 AS 1 | Pure Core 1 (24%) - *June examination*

Year 13 AS 2 | Applied 1 (16%) - *June examination*

Year 14 A2 1 | Pure Core 2 (36%) - *June examination*

Year 14 A2 2 | Applied 2 (24%) - *June examination*

Year 13 - Topics studied

Pure Mathematics – AS 1

- Algebra and functions
- Co-ordinate geometry in the x, y plane
- Sequences and Series
- Trigonometry
- Exponentials and logarithms
- Differentiation
- Integration
- Vectors

Applied Mathematics – AS 2

- Quantities and units in mechanics
- Kinematics
- Forces and Newton's laws
- Statistical sampling
- Data presentation and interpretation
- Probability

- Statistical distributions

Year 14 - Topics studied

Pure Mathematics - A2 2

- Algebra and functions
- Coordinate geometry in the (x,y) plane
- Sequences and series
- Trigonometry
- Differentiation
- Integration
- Numerical methods

Applied Mathematics – A2 2

- Kinematics
- Moments
- Impulse and momentum
- Probability
- Statistical distributions
- Statistical hypothesis testing

Employability/Job Opportunities/Further Study

- Accountancy
- Engineering
- Business
- Accountancy

- Banking
- Computing
- Engineering Maths
- Maths Teacher/ Lecture
- Statistician
- Sales/HR/Administration
- Actuary/ Insurance