

New program of study for Maths

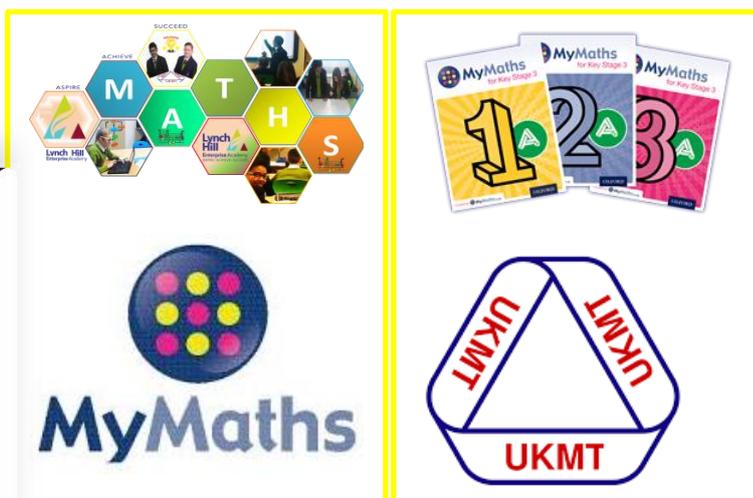
With the desire to enhance exemplary teaching and learning of Mathematics for our students, the department has successfully reviewed and updated its current programs of study in line with the new national curriculum changes. Our subscription to **MyMaths**, an outstanding provider of useful resources and tools, seeks to help students in fostering independent learning – a primary objective of the Maths department. All students have their own login and password details; parents/carers are encouraged to remind their children to actively use this resource.

UKMT Maths Challenge

Our enterprising Mathematicians are often provided opportunities to attempt the UKMT Math challenge competitions. Our students regularly produce commendable results which seamlessly compare with the best performing students within the same age group, nationally. This has been due the tremendous efforts and great enthusiasm that the students and their Math teachers: Mr A. Ahmed, Mr F. Chaudhry and Mr S. Dean, keep demonstrating.

Look out for :

- Our Parent Focus Group meetings
- Maths Challenge competitions for students
- Maths Enrichment trips for students



Our Aims

Our aims of teaching and learning Mathematics are to encourage and enable students to:

- appreciate the usefulness, effectiveness, influence and beauty of Mathematics
- recognize that mathematics permeates all aspects of our lives and the world around us
- become more confident in using Mathematics to analyse and solve problems
- develop patience, persistence and resilience when solving problems
- develop the knowledge, skills and attitudes necessary to pursue further studies in Mathematics
- develop the knowledge, skills and attitudes that would enhance their employability chances.
- develop critical thinking and the ability to reflect critically upon their work and the work of others

Our Strategy

With the unified belief that every individual has the capacity to always do better at Mathematics and its mastery, our strategy of teaching and learning of the subject is fundamentally based on the structure of observed learning outcomes of students – also known as SOLO Taxonomy.

SOLO Level	Meaning in relation to a student's learning and progress
Pre-structural	<i>I am not able to understand or solve this problem</i>
Uni-structural	<i>I am able to identify, name, draw, find, label, match, follow a procedure</i>
Multi-structural	<i>I am able to describe, list, outline, complete, continue and combine different ideas</i>
Relational	<i>I am able to classify, distinguish, argue, compare and contrast different ideas</i>
Extended Abstract	<i>I am able to generalise, predict, justify and theorise ideas within abstract contexts</i>

KS3 CORE OBJECTIVES

- Use language and properties precisely to analyse numbers, algebraic expressions, 2-D and 3-D shapes, probability and statistics.
- Understand and use variables effectively, and express relations between variables algebraically and graphically.
- Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning.
- Reason deductively in geometry, number and algebra, including using geometrical constructions.
- Explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express arguments mathematically.
- Evaluate appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.
- Model situations mathematically and express the results using a range of formal mathematical representations.
- Move freely between different numerical, algebraic, graphical and diagrammatic representations to solve more complex problems.
- Make and test conjectures about patterns and relationships; look for proofs or counter-examples.
- Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships.

	YEAR 7	YEAR 8	YEAR 9
AUTUMN	1 - Whole numbers and decimals	1 - Whole numbers and decimals	1 - Whole numbers and decimals
	2 - Measures, perimeter and area	2 - Measures, perimeter and area	2 - Measures, perimeter and area
	3 - Expressions and formulae	3 - Expressions and formulae	3 - Expressions and formulae
	Case study 1 – Diary farm	Case study 1: Energy in the home	Case study 1: Why do bikes have gears?
	4 - Fractions, decimals and percentages	4 - Fractions, decimals and percentages	4 - Fractions, decimals and percentages
	5 - Angles and 2D shapes	5 - Angles and shapes	5 - Angles
SPRING	6 – Graphs	6 – Graphs	6 – Graphs
	Case study 2: Recycling and energy	Case study 2: Patchwork	Case study 2: Jewellery business
	7 - Whole number calculations	7 - Mental calculations	7 - Decimal calculations
	8 - Statistics	8 - Statistics	8 - Statistics
	9 - Transformations and symmetry	9 - Transformations and symmetry	9 - Transformations and scale
	Case study 3: Rangoli	Case study 3: Food crops	Case study 3: Climate change
	10 - Equations	10 - Equations	10 - Equations
	11 - Factors and multiples	11 - Written and calculator methods	11 - Powers and roots
SUMMER	12 - Constructions and 3D shapes	12 - Constructions and 3D shapes	12 - Constructions and 3D shapes
	Case study 4: Labyrinths and mazes	Case study 4: Paper folding	Case study 4: Garden design
	13 - Sequences	13 - Sequences	13 - Sequences
	14 - Decimal calculations	14 - Decimal calculations	14 – 3D Shapes
	Case study 5: Electricity in the house	Case study 5: Perspective	Case study 5: Golden rectangle
	15 - Ratio and proportion	15 - Ratio and proportion	15 - Ratio and proportion
	16 - Probability	16 - Probability	16 - Probability
	Case study 6: School fair	Case study 6: Free-range	Case study 6: Crime scene investigation