

The maths Department aims to nurture a curiosity in maths that excites every child in a way that enables them to fulfil their potential.

We want all pupils at Lammas School to experience the beauty, power and enjoyment of mathematics and develop a sense of curiosity about the subject with a clear understanding. At Lammas we foster positive can-do attitudes and we promote the fact that ‘We can all do maths!’ We know all children can achieve in mathematics and teach for secure and deep understanding of mathematical concepts through manageable steps. We provide challenge through rich and sophisticated problems and use mistakes and misconceptions as an essential part of learning.

We aim for all pupils to:

- have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately to be successful in mathematics
- be able to solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios
- reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.

TLS Mathematics Curriculum



- Engineering, Aviation, Applied Science
- Alevels, Maths/Further Maths
- Business Accountancy and Finance
- Computer game coding
- University

-Mathematical modelling
 -Understand that a mathematical model can be refined by considering its output
 -Understand and use modelling assumptions
 -Translate a situation into a mathematical model, making simplifying assumptions

-Mathematical problem solving
 -Construct extended arguments to solve problems presented in an unstructured form
 -Construct mathematical diagrams to solve problems, including in mechanics
 -Interpret and communicate solutions in the context of the original problem

-Mathematical Argument, Language and Proof
 Comprehend and critique mathematical arguments
 -Understand and use language and symbols associated with set theory
 -Understand and use mathematical language and syntax as set out in the content

Upper VI

-Mathematical modelling
 Understand that a mathematical model can be refined by considering its output
 -Understand and use modelling assumptions
 -Translate a situation into a mathematical model, making simplifying assumptions

Percentage Change, Exchange Rates, Ratio, Solving Equations, Area and Circumference of Circles, Frequency Trees, Two Way Tables, Pie Charts, Estimating, Error Intervals, Prime Factors, HCF and LCM, Indices, Expanding and Factorising, Plans and Elevations, Transformations, Scatter Graphs

Writing a Ratio as a Fraction or Linear Function, Recurring Decimals to Fractions, Simultaneous Equations, Fractional and Negative Indices, Solving Simultaneous Equations Graphically, Surds, Direct and Inverse Proportion, Expanding Triple Brackets, Similar Shapes (Lengths), Parallel and Perpendicular Lines, Sector Areas and Arc Lengths, Inequalities on Graphs, Spheres and Cones, Rearranging Harder Formulae, SOHCAHTOA (Trigonometry), Enlarging with Negative Scale Factors, Exact trig values, Cumulative Frequency & Box Plot

Year 11

-All classes will follow a personalised route way based on EOY 10 summer assessments
 -all teachers will follow a personalised SOW based on red and amber topics
 -Fortnightly teacher evaluations of performance will take place throughout the year with the key focus on understanding exam language.

Lower VI

-Mathematical Argument, Language and Proof
 -Comprehend and critique mathematical arguments
 -Understand and use language and symbols associated with set theory
 -Understand and use mathematical language and syntax as set out in the content

-Mathematical problem solving
 -Construct extended arguments to solve problems presented in an unstructured form
 -Construct mathematical diagrams to solve problems, including in mechanics
 -Interpret and communicate solutions in the context of the original problem



TRIGONOMETRY



Calculation Problems, Fractions, Decimals and Percentages, Using a Calculator, Substitution, Solving One Step Equations, Area and Perimeter, Angles, Averages, Bar Charts, Stem and Leaf, Function Machines, Frequency Polygons, Fractions of an Amount, Drawing Graphs, Percentages, Writing and Simplifying Ratio, Fractions, Conversions and Units, Scale Drawings

Standard Form, Reverse Percentages, Speed and Density
 Real Life and Distance Time Graphs, Expanding and Factorising Quadratics, Solving Quadratics, Drawing Quadratic Graphs, Drawing Other Graphs: Cubic/Reciprocal, Changing the Subject of a Formula, Gradient of a Line, Equation of a Line, Angles in Parallel Lines, Angles in Polygons, Loc and Construction, Bearings, Vectors, Probability Trees, Venn Diagrams

Solving Place Value, Time, Negative Numbers, Powers and Roots, BIDMAS, Factors and Multiples, Writing and Simplifying Fractions, Coordinates, Pictograms, Addition and Subtraction, Multiplication and Division, Rounding, Systematic Listing, Simplifying Algebra, Writing an Expression, Probability
 Estimating, Error Intervals, Prime Factors, HCF and LCM, Indices, Expanding and Factorising, Plans and Elevations, Transformations, Scatter Graphs, Compound Interest and Depreciation, Sequences (Nth Term), Inequalities, Forming and Solving Equations, Pythagoras, Surface Area, Volume of a Prism, Cylinders, Averages from Frequency Tables, Probability

Year 10

-Graphs
 -Probability
 -Comparing shapes

-Constructions
 -Sequences, inequalities, equations and proportion
 -Circles, Pythagoras and prisms

-Indices and standard form
 -Expressions and formulae
 -Dealing with data
 -Multiplicative reasoning



Year 7

-Number systems and the axioms.
 -Factors, multiples and the order of operation.
 -Positive and negative numbers.
 -Expressions, equations and inequalities.

-Angles
 -Classifying 2-D shapes
 -Constructing triangles and quadrilaterals
 -Coordinates
 -Area of 2-D shapes
 -Transforming 2-D figures

Year 8

-Prime factor decomposition
 -Conceptualising fractions
 -Calculating with fractions
 -Ratio and Percentages

-Sequences
 -Forming and solving equations
 -Forming and solving inequalities
 Linear graphs
 -Accuracy and estimation

-Ratio
 -Real life graphs
 Direct and inverse proportion
 -Univariate data
 -Bivariate data

-Angles in polygons
 -Bearings
 -Circles and composite shapes
 -Volume and surface area of prisms

Year 9