



Curriculum Overview

Curriculum Area: Mathematics

Year: 8

Year 8 Curriculum:

Autumn Term:

Unit 1 – Types of Number and Algebra Skills

All pupils will use properties of numbers; such as factors, multiples and primes. They will perform more complex calculations involving BIDMAS, brackets, powers, roots and reciprocals. All pupils will write and interpret algebraic notation and use these skills to model real-life situations. All pupils will solve one-step equations with all four operations.

Unit 2 – Fractions, Percentages, Ratio and Proportion

All pupils will be able to write and simplify ratios and use the inter-connected relationship between ratio and proportion to solve basic problems involving direct and inverse proportion. All pupils will use the four operations in calculations involving fractions and mixed numbers and develop the fluency to confidently write values as equivalent fractions, decimals and percentages. They will be able to find fractions of, and percentages of amounts and apply this to solving problems in various contexts. They will explore how to work with percentages of all sizes and divide a quantity into a given ratio.

Spring Term:

Unit 3 – Properties of Circles, Geometry and Algebraic Manipulation

All pupils will learn to correctly name the parts of a circle. They will learn to solve problems involving perimeter of circles and areas of circles and composite shapes. All pupils will learn to construct and interpret pie charts. Knowledge of angle facts will be developed and extended to angles in parallel lines and polygons. All pupils will develop their understanding and use of algebra by expanding and factorising expressions, solving more complex linear equations and learning to rearrange formulae.

Unit 4 – Introduction to Probability and Percentages in Real-Life

All pupils will be introduced to the concept probability, learning the correct vocabulary and where events lie on a probability scale. All pupils will learn to calculate probabilities for single and combined events whilst understanding the limitations of this. All pupils will develop their understanding of the power of percentages by tackling problems involving percentage change, percentage increase/decrease, reverse percentages and calculating simple interest.

Summer Term:

Unit 5 – Sequences, Compound Measures and Standard Form

All pupils will learn to generate a sequence from a term-to-term or position-to-term rule. They will be able to use and find the n th term and recognise both arithmetic and geometric sequences. All pupils will learn to use compound units such as speed, unit pricing and density to solve problems. They will learn how to estimate answers by rounding and express resulting error intervals. All pupils will be introduced to standard form as another way to express write numbers.

Links to National Curriculum

Our Year 8 curriculum builds on core knowledge gained by all pupils in Year 7 and lays the foundations for work that will be covered in Year 9. It allows pupils to demonstrate their understanding and then confidently build up their core knowledge and skills. This sequence of learning that has been specifically designed by the Maths' department at Longridge High School and ensures that every pupil has full access to the KS3 national curriculum.

Core knowledge covered in Year 8 relates directly to KS3 National Curriculum statements in the following strands:

Number, Algebra, Ratio, proportion and rates of change, Geometry and measures and Probability.

The key aims of developing fluency, reasoning mathematically and being able to solve problems are also embedded throughout the units of work.

Knowledge and understanding of this curriculum will be assessed by:

At the beginning of each unit of work, all pupils will complete a pre-skills audit. This will be used to enable class teachers to plan a bespoke sequence of learning for their pupils, ensuring that all pupils cover the required core knowledge.

High quality assessment will be a feature throughout each lesson, mini white boards will be used to provide instant feedback and identify and address gaps and misconceptions to both pupils and teachers.

At the end of each unit of work all pupils will complete a learning review.

This will clearly demonstrate the progress made by each individual pupil on each specific element of core knowledge.

Powerful Knowledge/Cultural Capital Opportunities

Mathematics is a creative and highly inter-connected discipline. It is essential to everyday life and has provided the solutions to some of history's most intriguing problems.

Throughout year 8 all pupils will continue to develop problem solving skills that can be transferred to other areas of the school curriculum and life outside of school.

In lessons, all pupils will learn how and why key concepts in number and algebra came to be. They will use subject specific language and terminology as standard – they will learn to think and speak like mathematician.

Links will be made to other subjects and we will show all pupils how the core knowledge that they are learning has applications in real-life.