



Curriculum Overview

Curriculum Area: Mathematics

Year: 9

Year 9 Curriculum:

Autumn Term:

Unit 1 – Graphical Representations with Algebra

All pupils will solve problems involving direct and inverse proportion both graphically and using algebra. All pupils will learn about characteristics of linear graphs, being able to find mid-points, gradients and y-intercepts both graphically and algebraically. All pupils will be able to recognise, sketch and produce graphs of linear and quadratic functions.

Unit 2 – Using Graphs and Interpreting Statistics

All pupils will learn to use linear and quadratic graphs to estimate value and find approximate solutions of simultaneous linear equations. Pupils will learn to interpret and find approximate solutions from real-life contexts by exploring piece-wise linear, exponential and reciprocal graphs. All pupils will be able to construct and interpret scatter graphs and find the mean, median, mode and range from ungrouped and grouped frequency tables.

Spring Term:

Unit 3 – 3D Shapes and Transformations

All pupils will use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3D. They will learn to solve problems involving perimeter and area of triangles, parallelograms, trapezia and find surface area and volume of prisms – including cylinders. All pupils will learn the properties of and how to perform translations, rotations and reflections.

Unit 4 – Pythagoras' Theorem and Trigonometry

All pupils will learn to apply known angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides. All pupils will be introduced to Pythagoras' Theorem and how to use it correctly to obtain simple proofs. All pupils will learn about the three trigonometric ratios and use them to solve problems involving right-angled triangles.

Summer Term:

Unit 5 – Further Probability, Constructions and Loci

All pupils will be introduced to Venn Diagrams and the correct use of set notation. All pupils will develop the skills to record, describe and analyse outcomes of simple probability experiments using the appropriate language of probability. All pupils will be able to use the correct mathematical equipment to accurately construct perpendicular bisectors and angle bisectors. They will also learn how to construct triangles and other similar shapes by enlargement, with and without coordinate grids.

Links to National Curriculum

Our Year 9 curriculum builds on core knowledge gained by all pupils in Years 7 and 8. 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. Our robust and inclusive KS3 curriculum provides a firm foundation for the next stage of study.

Core knowledge covered in Year 9 relates directly to KS3 National Curriculum statements in the following strands:

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

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. Throughout Year 9 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 look at statistics from real-life events which will give them a greater understanding of national and global events. 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.