

Year 9 Maths Learning Map

- TERM 1 -

Processing and representing data

Year 9 students will analyse and represent data using bar, tally, and pie charts, as well as measures of central tendency and range. They will extend scatter diagram skills by drawing lines of best fit, making predictions, exploring relationships, and critically evaluating data for accuracy or bias

Place Value, Ordering and Rounding

Students will consolidate their understanding of number magnitude, including very large and very small numbers. They will refine rounding and estimation skills and extend their knowledge by expressing numbers in standard form to solve problems with increasing complexity.

Types of Number

Students will work with indices, including negative and fractional powers, and apply the laws of indices confidently. They will use prime factorisation to determine highest common factors and lowest common multiples, building a deeper understanding of number properties to support algebraic and problem-solving skills.

Algebraic notations and expressions

Students will extend their algebra skills by manipulating more complex expressions and equations. They will substitute into and rearrange formulae, develop fluency in factorising, expanding, and solve linear and quadratic equations and inequalities, preparing them for advanced algebraic reasoning.



PRIOR LEARNING

These Year 9 units build on KS2 and earlier KS3 foundations in number, data, and algebra, extending pupils' skills in representing and interpreting data, working with powers, manipulating expressions, and solving equations, preparing them for more complex reasoning and problem-solving.



- TERM 2 -

Area and Volume

This unit extends 2D area work to include circles and composite figures, calculate surface area of prisms and cylinders, and determine volumes of cubes, cuboids, prisms, cones, pyramids and spheres, including metric conversions and problem solving.

Rates

Year 9 will explore compound units and multiplicative relationships by solving problems involving speed, distance and time, unit pricing, density and flow. They will interpret related graphs and unit conversion and incorporate linear graphs briefly at the end of this unit.

Straight Line Graphs

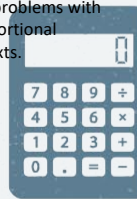
This unit deepens their understanding of plotting and interpreting linear graphs. They use tables of values, compare gradients and intercepts, work with equations in the form $y = mx + c$, find equations from graphs, and interpret gradient and intercepts in real-life contexts.

Maths and Money

Students apply number skills to financial contexts: calculating with money, interpreting pay (Including tax and wages), working with percentages – Increasing, Decreasing, repeated change and applying simple and compound interest. They will develop these skills whilst solving real-world financial problems.

Similarity

They will recognise and construct similar shapes using scale factors, including negative and fractional scale factors. They will calculate missing lengths and angles, solve problems with similar triangles, and explore proportional relationships in geometrical contexts.



PRIOR LEARNING

Terms 2 build on Year 8 and Year 7 foundations in geometry, number, ratio, and algebra, extending students' skills in applying formulas, interpreting graphs, solving proportional problems, and tackling more complex real-world and multi-step problems.



- TERM 3 -

Ratio and Proportion

Developing on from year 8, students solve more complex ratio problems, identify and use direct and inverse proportional relationships in tables, graphs and equations, work with unit rates and best-buy problems, and apply proportional reasoning in varied contexts.

Construction and Congruence

Students will learn to construct angle bisectors, perpendicular bisectors and construct scale drawings. They will explore loci, and identify and construct congruent figures, including congruent triangles using SSS, SAS and ASA reasoning.

Transformations

Students will describe and perform reflections, rotations and translations of shapes, use vectors to represent translations and explore rotational symmetry and tessellations.

Sets and Probability

They will begin to formalise set notation, work with Venn diagrams and subset relationships, calculate probabilities from sets, two-way tables and sample spaces, and apply probability rules to real-world problems.

Simultaneous Equations

They will learn to solve pairs of linear equations in two variables by graphing and algebraic methods, finding solutions where lines intersect and interpreting these solutions within contextual problems and tables.



PRIOR LEARNING

Term 3 builds on Year 8 and Year 7 foundations in ratio, geometry, transformations, probability, and algebra. Students extend prior skills to solve complex problems, formalise reasoning, work with multiple representations, and apply concepts to real-world contexts.

