

Y9 ROADMAP - Mathematics

Subject Aim: The aim of the Year 9 Maths curriculum is to strengthen and extend students' mathematical understanding in preparation for GCSE. It builds on learning from Years 7 and 8 by introducing more complex topics while reinforcing key concepts through personalised practice, supporting the development of fluency, problem-solving, and long-term retention through regular retrieval and structured revision.

TERM 1

Is a 'sale price' always the best price?

Students begin by reviewing their understanding of fractions, decimals, and percentages before moving on to calculating percentages of amounts and percentage change. They also explore reverse percentage problems, with higher attainers challenged by repeated percentage change. Theoretical probability is extended to include experimental probability and the use of frequency trees. Building on their Year 8 work with indices and standard form, students now learn how to calculate with numbers in standard form.

TERM 2

What is a quadratic?

Building on Year 8 work with expanding double brackets, students now learn to solve quadratic equations through factorising. They explore rearranging formulae and make connections between equations, identities, and expressions. Standard constructions, such as bisectors, are introduced using a straight edge and compasses. Students also develop their understanding of circles and fractions to derive and apply the formulae for arc length and sector area. Finally, their knowledge of volume is extended from prisms to include cylinders.

TERM 3

Number, Fractions and Rates in Context

A key focus this half term is developing students' understanding of number structure, including factors, multiples, primes, and standard number sets. Building on Year 7 and 8 work with fractions, students will apply all four operations to solve problems fluently. They will also explore rates, including speed and distance-time graphs, before applying their understanding in financial contexts such as budgeting, borrowing, and saving. The emphasis is on applying number skills confidently in real-life situations.

TERM 4

Graphs, Proportion and Similarity

Students will extend their understanding of straight-line graphs, building on Year 8 work with $y=mx+c$ to interpret gradient and intercepts in real-life contexts. They will deepen their knowledge of ratio and proportion, including direct and inverse proportion and their graphical representations. The unit also introduces congruence and similarity, allowing students to apply geometric reasoning to solve problems involving scale and proportional relationships.

TERM 5

Algebra, Pythagoras and Non-Linear Graphs

This half term focuses on developing algebraic fluency and geometric reasoning. Building on prior work with expressions, students will expand and factorise expressions and use algebraic identities. They will apply Pythagoras' theorem to solve problems in a range of contexts, including coordinates. Students are then introduced to non-linear graphs, including quadratic, reciprocal, and exponential graphs, extending their understanding of graphical relationships.

TERM 6

Probability and Transformations

Students will develop their understanding of probability, building on Year 7 and 8 work with single events to explore sets, Venn diagrams, and combined probabilities. They will interpret and calculate probabilities using diagrams and consider relative frequency and expected outcomes. The unit then focuses on transformations, including enlargement, rotation, reflection, and translation, with an emphasis on describing transformations precisely and linking algebraic and geometric representations.



ASSESSMENT

All lessons will assess understanding through a range of activities, including diagnostic questions, mini whiteboard tasks, and find-and-fix activities. Lessons are regularly punctuated with hinge questions, key statements, and opportunities for discussion. In addition to these ongoing checks for understanding, students will complete formal assessments once each term.



INDEPENDENT LEARNING

Sparx Maths is used throughout the year to support independent learning, revision, and personalised "fix-up tasks" following assessments. Weekly independent learning on Sparx is closely aligned with lesson content and includes bespoke tasks tailored to each student's needs, with both the content and level of difficulty personalised. These tasks enable students to consolidate and revisit material most relevant to their individual progress. Knowledge Organisers are also used weekly to reinforce key vocabulary and support learning across the curriculum.



ENRICHMENT

- Maths challenge activities.
- Maths' relays allowing opportunity for problem solving.

What Next? This year, students have strengthened their foundation in key mathematical skills. As they enter Year 10 and begin the GCSE course, they will build on this knowledge and start applying it to more complex, multi-step problems, with increasing focus on fluency, reasoning, and problem-solving.