

# Y10F ROADMAP - Mathematics

**Subject Aim:** The aim of the Year 10 Foundation Maths curriculum is to build confidence and fluency in the core topics needed for success at GCSE Foundation level. It focuses on securing essential skills, developing problem-solving strategies, and reinforcing understanding through structured, personalised practice. The curriculum supports students in applying maths to real-life contexts and prepares them effectively for Year 11 exams.

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| TERM 1 | Students will develop their Year 9 algebra by simplifying expressions, expanding brackets and factorising. They will then solve equations and inequalities and rearrange formulae, applying inverse operations accurately. Finally, students will explore quadratic expressions and equations, including expanding, factorising and solving simple quadratics. These units strengthen the algebraic fluency needed throughout the GCSE course and prepare students for Year 11 work involving graphs, functions, simultaneous equations and multi-step problem solving.  |  <b>ASSESSMENT</b> <p>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 and sit their Year 10 mock exams in Term 6.</p>                                                                                                                                                          |
| TERM 2 | Students will extend their Year 9 percentage work to solve problems involving percentage change, original values and repeated change. They will then develop ratio and scale, including sharing, combining ratios and using scale drawings. Finally, students will strengthen their calculation skills with fractions, including the four operations and problems involving amounts. These units prepare students for Year 11 and GCSE questions involving financial mathematics, growth and decay, similarity, compound measures and multi-step proportional reasoning. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| TERM 3 | Students will strengthen their non-calculator skills by applying efficient written and mental methods to integers, decimals, fractions and percentages. They will then extend Year 9 work on straight-line graphs by interpreting gradients and intercepts and forming equations of lines. Finally, students will develop probability using sample spaces, Venn diagrams and combined events. These units prepare students for Year 11 and GCSE work involving exact calculations, graphical equations, parallel lines and multi-step probability problems.              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| TERM 4 | Students will develop rounding and estimation skills, including significant figures, error intervals and bounds. They will then extend earlier work on perimeter, area and volume to solve problems involving compound shapes, prisms and circles. Students will interpret and represent data using statistical diagrams before exploring non-linear graphs. These units prepare students for Year 11 and GCSE work involving accuracy, bounds, complex mensuration, statistical analysis and quadratic, reciprocal and exponential graphs.                              |  <b>INDEPENDENT LEARNING</b> <p>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.</p> |
| TERM 5 | Students will extend their understanding of angles by applying facts to polygons, parallel lines, bearings and geometric problems. They will then interpret and construct graphs and diagrams, including scatter graphs, frequency polygons and time series. Finally, students will develop their understanding of vectors, representing translations and combining simple vectors. These units prepare students for Year 11 and GCSE work involving geometric reasoning, constructions, statistical interpretation, transformations and vector problem solving.         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| TERM 6 | Students will revisit factors, powers and roots before developing their understanding of surds and exact values. They will then build on Year 9 geometry by applying Pythagoras' theorem and trigonometry to calculate missing sides and angles in right-angled triangles. Finally, students will solve simultaneous equations algebraically and graphically. These units prepare students for Year 11 and GCSE problems involving exact calculations, bearings, 3D geometry, graphical solutions and multi-step algebraic reasoning.                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  <b>ENRICHMENT</b> <ul style="list-style-type: none"><li>• Maths challenge activities.</li><li>• Maths' relays allowing opportunity for problem solving.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                             |

**What Next?** This year has built on previous knowledge to allow students to solve more complicated multi-step problems. The next year builds on this knowledge whilst time is allowed for retrieval and exam practice.