

Year 11 (Foundation) Curriculum Overview

Curriculum Intent: The Year 11 Foundation curriculum is designed to consolidate and extend students' core mathematical knowledge, ensuring fluency, confidence, and accuracy in applying key concepts to a range of familiar and unfamiliar contexts. Through carefully sequenced revisiting of number, algebra, geometry, ratio, and statistics, students strengthen procedural fluency while developing reasoning and problem-solving skills essential for success in the Pearson Edexcel GCSE Foundation Tier. Lessons focus on building resilience, mathematical communication, and the ability to select efficient methods, empowering all learners to achieve a secure pass and apply mathematics effectively in further study, employment, and everyday life.

Unit	Assessment	Outline	Knowledge/Skills	Links to Prior Learning	Wider Knowledge/Literacy	Links to Careers/Employability Skills
Algebra Review	Formative assessment through retrieval 'Do Now' questions and mini whiteboard checks. Summative end-of-unit test contributes to mid-year assessment.	Students consolidate key algebraic techniques from KS3 and extend understanding to GCSE-level algebraic manipulation and application in context. They solve linear and simultaneous equations, rearrange formulae, and substitute into real-life formulae.	Pearson GCSE links: 1a–1k (Algebraic manipulation), 2a–2e (Equations and inequalities), 3a–3d (Formulae), 6a–6b (Graphs). Foundational: Simplify expressions, expand/factorise, solve one- and two-step equations, substitute numerical values. Mastery: Solve simultaneous equations algebraically and graphically, rearrange complex formulae, apply algebra in geometric contexts (sector area, arc length). Skills: Algebraic manipulation, interpretation of graphs, problem solving through multiple representations.	Builds on KS2 algebraic reasoning (number patterns, sequences) and KS3 algebra (letters as variables, manipulating expressions). Prepares for GCSE topics on quadratics, functions, and graphs .	Use of technical vocabulary: coefficient, variable, term, subject, equation, rearrange. Students practise structured written reasoning and step-by-step logical explanations.	Careers: Data analysis, engineering, finance, architecture. Skills: Problem solving, logical reasoning, accuracy, perseverance, aiming high.
Right-Angled Trigonometry	Low-stakes quizzes, retrieval practice, and diagnostic questioning. Summative assessment included in mid-year exam.	Students learn to calculate unknown sides and angles in right-angled triangles using trigonometric ratios. They recall and use exact trig values and apply these in problems involving elevation and depression.	Pearson GCSE links: 6a–6d (Trigonometric ratios), 6f (Angles of elevation/depression), 6g (Exact trig values). Foundational: Identify and label sides (opposite, adjacent, hypotenuse), use SOHCAHTOA correctly. Mastery: Apply trigonometry to bearings, heights, and distances; use exact trig values (0°, 30°, 45°, 60°, 90°). Skills: Drawing and labelling triangles, solving trig equations, interpreting worded contexts.	Builds on KS3 geometry (Pythagoras' theorem) and KS2 ratio and proportion . Leads into GCSE non-right-angled trigonometry and sine/cosine rule .	Vocabulary focus: sine, cosine, tangent, opposite, adjacent, hypotenuse, elevation, depression. Emphasis on interpreting geometric contexts in written problems.	Careers: Surveying, construction, civil engineering, aviation. Skills: Spatial reasoning, precision, resilience, logical application, aiming high.

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Similar Shapes	Retrieval and hinge questions throughout lessons; end-of-unit test included in end-of-year assessment.	Students explore similarity in 2D figures, understanding that similar shapes have equal angles and proportional sides. They calculate missing lengths and link enlargement to area and volume.	Pearson GCSE links: 7a–7d (Similarity and congruence), 7e (Area and volume scale factors), 8a (Problem solving in geometry). Foundational: Define similarity and recognise proportional sides and equal angles. Mastery: Use scale factors across dimensions, connect enlargement to changes in perimeter/area/volume. Skills: Ratio reasoning, proportional thinking, accurate diagram construction.	Builds on KS2 geometry (comparing and classifying shapes, proportion) and KS3 enlargements and transformations . Supports future GCSE trigonometric ratio links and circle theorem applications .	Literacy focus on proportional reasoning, using terms such as enlargement, scale factor, ratio, congruent, similar.	Careers: Architecture, graphic design, fashion, product design, engineering. Skills: Creativity, teamwork, problem solving, spatial awareness, attention to detail.
Congruence	Low-stakes assessments within lessons; end-of-unit test included in spring assessment.	Students identify congruent shapes, apply congruence criteria to triangles, and solve geometric problems. They explore transformations that preserve size and shape.	Pearson GCSE links: 7a–7b (Congruence), 8a (Geometric reasoning). Foundational: Identify congruent shapes and understand angle and side preservation under transformations. Mastery: Apply congruence criteria (SSS, SAS, ASA, RHS) to solve problems and prove geometric results. Skills: Logical reasoning, geometric proof, accurate diagrammatic working.	Builds on KS2 geometry (angle facts, symmetry) and KS3 transformations . Lays groundwork for GCSE similarity, proof, and circle theorems .	Key vocabulary: congruent, corresponding, reflection, transformation, preserved, criteria. Focus on written reasoning and proof structure.	Careers: Architecture, CAD design, civil engineering, surveying. Skills: Logical reasoning, accuracy, problem solving, teamwork.
Constructions & Loci	Practical formative assessment through compass-and-ruler tasks; summative end-of-year test.	Students learn formal ruler and compass constructions and apply these to solve geometric and locus problems, including constructing perpendiculars, bisectors, and regions.	Pearson GCSE links: 8b–8d (Constructions and loci), 9a–9b (Geometric problem solving). Foundational: Accurately measure and draw lines and angles; use a compass to draw circles and arcs. Mastery: Construct perpendicular and angle bisectors, loci involving points, lines, and intersecting regions. Skills: Precision with instruments, spatial reasoning, logical construction of geometric figures.	Builds on KS2 measurement and geometry (accurate drawing and measuring) and KS3 constructions . Leads into GCSE loci, circle theorems, and proof applications .	Literacy focus on terminology: locus, bisector, perpendicular, equidistant, intersection, region. Develops communication in explaining procedural steps clearly.	Careers: Engineering, architecture, design technology, urban planning. Skills: Accuracy, perseverance, teamwork, problem solving, aiming high.
Post Mock 1 revision and reteach.						