Curriculum Map – Maths – Year 11 Foundation

Immanuel College
Church of England Academy

	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Key focus	• **Ratio and proportion** • **Area and volume** • **Similarity and congruence**	• **Sequences and proof** • **Standard form** • **Work with circles** • **Set notation and Venn diagrams**	• **Functions and graphs** • **Equations and formulae** • **Rates**	• **Angles, bearings and trigonometry** • **Constructions and loci** • **Transformations**	• **Revision - question banks** • **Revision - practice papers** • **Targeted intervention**	• **Pre-exam workshops** • **GCSE examinations**
Key knowledge and skills	**Ratio and proportion** • Solve ratio problems and use direct/inverse proportion • Use scale factors in contextual problems **Geometry** • Calculate area, surface area and volume • Use similarity and congruence to find missing measures • Connect length scale factors with area/volume where appropriate	**Algebra and number** • Generate sequences and find nth terms • Use reasoning and simple algebraic proof • Calculate with standard form **Geometry and probability** • Calculate circumference and area and solve circle problems • Use set notation, Venn diagrams and associated probabilities	**Algebra** • Use function machines/notation and interpret graphs • Solve linear and quadratic equations • Rearrange formulae and solve simultaneous equations where required **Rates** • Solve speed, density and other compound-measure problems • Interpret gradients and rates in context	**Geometry** • Use angle rules and bearings • Use Pythagoras and right-angled trigonometry • Perform standard constructions and solve loci problems • Describe and perform reflections, rotations, translations and enlargements	**Revision** • Diagnose gaps using QLA and assessment evidence • Retrieve and connect content across Number, Algebra, Ratio, Geometry, Probability and Statistics • Develop exam technique and multi-step problem solving	**Exam preparation** • Refine exam technique, calculator use and checking strategies • Target individual gaps and common misconceptions • Apply mathematical reasoning under timed conditions
Key words/ vocabulary	Ratio, proportion, scale factor, area, surface area, volume, similar, congruent, corresponding.	Sequence, nth term, proof, standard form, radius, diameter, circumference, sector, set, union, intersection, complement, Venn diagram.	Function, input, output, graph, root, equation, formula, simultaneous, rate, speed, density, gradient.	Bearing, Pythagoras, sine, cosine, tangent, construction, locus, bisector, translation, reflection, rotation, enlargement.	Key GCSE terminology revisited responsively according to assessment evidence.	Targeted vocabulary based on individual revision needs.
Assessment method	Topic assessments and formative checks.	Topic assessments; summative GCSE-style assessment / mock.	Topic assessments and formative checks.	Topic assessments; summative GCSE-style assessment / mock.	Practice papers; question-level analysis; targeted formative assessment.	Pre-exam practice and GCSE examinations.
Wider links	Science - proportional relationships. Construction - scale, area and volume.	Science - standard form. Computing - sets and logical classification.	Science - formulas, speed and density. Computing - functions.	Geography - bearings and navigation. Design - constructions and transformations.	Application of mathematics across science, geography, technology and personal finance.	Cross-curricular application revisited through exam questions.
Enrichment opportunities	GCSE problem-solving tasks; targeted Sparx revision.	Practice-paper problem solving; revision workshops.	Exam-style graph/equation problems; targeted intervention.	GCSE geometry problem-solving; practice-paper workshops.	Revision workshops; Sparx/independent revision; structured exam practice.	Optional pre-exam workshops and independent revision.
Careers links	Engineer; architect; construction manager.	Scientist; data analyst; technician.	Technician; engineer; logistics planner.	Surveyor; navigator; CAD technician.	Connections between GCSE mathematics and a broad range of post-16 pathways.	Post-16 progression and mathematical literacy for

						employment and further study.

“Perseverance produces **character,** and character, **hope**” (Romans 5:4)

Curriculum Map – Maths – Year 11 Higher

Immanuel College
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	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Key focus	• **Ratio and proportion** • **Area and volume** • **Similarity and congruence**	• **Sequences and proof** • **Standard form** • **Circle theorems** • **Set notation and Venn diagrams** • **Vectors**	• **Functions and graphs** • **Equations and formulae** • **Rates**	• **Angles, bearings and trigonometry** • **Constructions and loci** • **Transformations**	• **Revision - question banks** • **Revision - practice papers** • **Targeted intervention**	• **Pre-exam workshops** • **GCSE examinations**
Key knowledge and skills	**Ratio and proportion** • Solve complex ratio and proportion problems • Use direct and inverse proportion including algebraic representations **Geometry** • Solve area, surface area and volume problems • Use similarity and congruence in geometric reasoning • Use length, area and volume scale factors	**Algebra and number** • Find linear and quadratic nth terms and use sequence rules • Construct algebraic proofs • Calculate fluently with standard form **Geometry and probability** • Apply circle theorems and justify geometric conclusions • Use formal set notation and Venn diagrams • Use vectors for geometric reasoning and proof	**Functions and graphs** • Use function notation, composite and inverse functions • Interpret and transform linear and non-linear graphs • Recognise quadratic, cubic, reciprocal and exponential forms **Equations and rates** • Solve quadratics using appropriate methods • Solve simultaneous equations including linear/quadratic systems • Rearrange complex formulae and use iteration where required • Solve compound measures and rates-of-change problems	**Geometry** • Solve complex bearing and angle problems • Apply Pythagoras, trigonometry and extended trigonometric methods • Perform constructions and solve loci problems • Use transformations including negative/fractional enlargement and graph transformations where appropriate	**Revision** • Use QLA and assessment evidence to prioritise revision • Connect higher-tier content across all mathematical strands • Develop proof, reasoning and multi-step problem-solving strategies • Refine time management and checking routines	**Exam preparation** • Target final misconceptions and weak areas • Practise high-demand reasoning and problem-solving • Use efficient calculator/non-calculator strategies and verify solutions
Key words/ vocabulary	Ratio, direct proportion, inverse proportion, scale factor, surface area, volume, similarity, congruence, corresponding.	Quadratic sequence, nth term, proof, standard form, chord, tangent, cyclic quadrilateral, set, union, intersection, complement, vector, scalar.	Function, composite, inverse, quadratic, cubic, reciprocal, exponential, iteration, simultaneous equation, rate of change, gradient.	Bearing, sine, cosine, tangent, sine rule, cosine rule, locus, bisector, invariant, transformation, negative enlargement.	Key Higher-tier GCSE terminology revisited responsively according to assessment evidence.	Targeted vocabulary based on individual revision needs.
Assessment method	Topic assessments and formative checks.	Topic assessments; summative GCSE-style assessment / mock.	Topic assessments and formative checks.	Topic assessments; summative GCSE-style assessment / mock.	Practice papers; QLA; targeted formative assessment.	Pre-exam practice and GCSE examinations.
Wider links	Science - proportionality. Construction/engineering - similarity and scale.	Science - standard form and vectors. Computing - formal set notation.	Computer Science - functions. Physics - rates of change and graph interpretation.	Physics - trigonometric relationships. Geography - bearings. Design - transformations.	Applications across science, computing, engineering, economics and technology.	Cross-curricular application revisited through examination questions.

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Curriculum Map – Maths – Year 11 Higher

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Enrichment opportunities	Higher-tier GCSE problem solving; targeted Sparx revision.	Higher-tier proof problems; practice-paper workshops.	Higher-tier algebra/graph challenges; targeted intervention.	Higher-tier geometry workshops; practice papers.	Further Maths preparation for selected pupils; revision workshops; independent practice.	Optional pre-exam workshops; independent revision; Further Maths bridging where appropriate.
Careers links	Engineer; architect; physicist.	Mathematician; physicist; engineer.	Software engineer; quantitative analyst; physicist.	Surveyor; aerospace engineer; architect.	STEM, computing, finance and other mathematically demanding post-16 pathways.	Post-16 mathematics, sciences, engineering, economics and computing.

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