Curriculum Map – Maths – Year 8

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 • Proportion and scale • Algebraic manipulation	• Coordinates and graphs • Multiply and divide fractions • Symmetry and reflection	• Area, volume and density • Equations and inequalities • Percentages	• Indices • Standard form • Interpret and represent data	• Angles in parallel lines and polygons • Tables and probability	• Circles • Graphs and charts • Sequences • Revision and consolidation
Key knowledge and skills	**Ratio and proportion** • Write, simplify and compare ratios • Share quantities in a given ratio • Use proportion, scale factors and conversion graphs **Algebra** • Simplify algebraic expressions • Expand single and double brackets • Factorise expressions and use algebraic structure	**Graphs** • Plot coordinates and use tables of values • Draw and interpret straight-line graphs • Understand gradient and the form y = mx + c **Number** • Multiply and divide fractions, including values greater than one **Transformations** • Recognise symmetry and reflect shapes in horizontal, vertical and diagonal lines	**Geometry and measures** • Calculate area of compound shapes and volume of prisms • Use the relationship between density, mass and volume **Algebra** • Form and solve equations and inequalities • Represent inequality solutions **Percentages** • Calculate percentages of amounts and percentage change • Use multipliers for increase and decrease	**Number** • Use index notation and index laws • Convert ordinary numbers to and from standard form • Calculate and compare using standard form **Statistics** • Identify types of data, outliers and errors • Choose appropriate averages and compare distributions • Represent grouped discrete and continuous data	**Geometry** • Use corresponding, alternate and co-interior angle facts • Use interior and exterior angle properties of polygons • Construct chains of geometric reasoning **Probability** • Use sample spaces, two-way tables and frequency trees • Calculate probabilities from tabular representations	**Circles** • Use radius, diameter, circumference and area • Solve problems involving parts of circles and compound shapes **Statistics** • Construct and interpret a range of graphs and charts • Compare representations and identify misleading features **Sequences** • Generate arithmetic sequences and find nth terms
Key words/ vocabulary	Ratio, proportion, scale, share, unitary, conversion, expression, term, coefficient, expand, factorise, bracket, identity.	Coordinate, axis, gradient, intercept, linear, equation, y = mx + c, numerator, denominator, reciprocal, symmetry, reflection, invariant.	Area, volume, prism, density, mass, equation, inequality, solution, percentage, increase, decrease, multiplier, change.	Index, power, base, standard form, integer, data, outlier, mean, median, mode, range, grouped, distribution, frequency.	Parallel, corresponding, alternate, co-interior, interior, exterior, polygon, probability, sample space, two-way table, frequency tree, outcome.	Radius, diameter, circumference, pi, sector, chart, graph, scale, frequency, sequence, arithmetic, nth term, rule.
Assessment method	Topic summaries; formative assessment.	Topic summaries; formative assessment; summative assessment point.	Topic summaries; formative assessment; summative assessment point.	Topic summaries; formative assessment.	Topic summaries; formative assessment.	Topic summaries; formative assessment; summative assessment point.
Wider links	Food - recipes and scaling. Geography - maps and scale. Art - colour mixing and proportion.	Science - graphing relationships. Computing - coordinates. Art - symmetry and reflection.	Science - density, mass and volume. Design Technology - capacity and material use.	Science - very large and small numbers. Geography - comparing populations.	Design and construction - parallel lines and polygons. Science - probability and risk.	Art - circular design. English/Media - interpreting graphical information.

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			Finance - percentage change.	Computing - data representation.		Science - sequences and patterns.
Enrichment opportunities	NRICH ratio/proportion problems; algebra puzzles; independent Sparx practice.	Graphing investigations; transformation puzzles; independent Sparx practice.	Density investigations; algebra challenges; independent Sparx practice.	Standard-form challenges; data investigations; independent Sparx practice.	Junior Maths Challenge preparation; probability games and investigations.	Junior Maths Challenge; statistics investigation; suggested reading on the history of pi; independent Sparx practice.
Careers links	Cartographer; chef/food technologist; engineer.	Scientist; game designer; graphic designer.	Chemist; engineer; product designer.	Rocket scientist; statistician; research scientist.	Architect; structural engineer; risk analyst.	Statistician; market researcher; designer.

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