

Mathematics sample Stage 4 scope and sequence – Year 7 (illustrating the completion of Stage 4 by the end of Year 8 referencing key ideas)

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 |
|--------|---|--------|--|--------|--------|--|--------|--------|--------|---------|
| Term 1 | 1 Basic Number Review | | 2 Integers | | | 3 Angles and Two-Dimensional Shapes | | | | |
| | MA3-1WM, MA3-2WM, MA3-3WM, MA3-4NA, MA3-5NA, MA3-6NA | | MA4-1WM, MA4-2WM, MA4-3WM, MA4-4NA | | | MA4-1WM, MA4-2WM, MA4-3WM, MA3-16MG, MA4-17MG, MA4-18MG | | | | |
| | <ul style="list-style-type: none"> Review of Stage 3 Whole Number, Addition and Subtraction, Multiplication and Division | | <ul style="list-style-type: none"> Apply associative, commutative and distributive laws to aid mental computation Apply the four operations with integers Apply the order of operations | | | <ul style="list-style-type: none"> Use the language, notation and conventions of geometry Apply the geometric properties of angles at a point to find unknown angles with appropriate reasoning Identify and apply the properties of corresponding, alternate and co-interior angles on parallel lines to find unknown angles with appropriate reasoning Investigate conditions for two lines to be parallel Solve simple numerical exercises based on geometrical properties Classify and determine properties of triangles and quadrilaterals Identify line and rotational symmetries Determine the angle sums of triangles and quadrilaterals Find unknown sides and angles in triangles and quadrilaterals with appropriate reasoning | | | | |

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|--------|--|--------|--------|--------|--------|--|--------|---|--------|---------|
| Term 2 | 4 Fractions, Decimals and Percentages (conversions and calculations) | | | | | 5 Applications of Percentages | | 6 Indices with Numerical Bases | | |
| | MA4-1WM, MA4-2WM, MA4-3WM, MA3-7NA, MA4-5NA | | | | | MA4-1WM, MA4-2WM, MA4-3WM, MA4-5NA | | MA4-1WM, MA4-2WM, MA4-3WM, MA4-9NA | | |
| | <ul style="list-style-type: none"> Apply the four operations with fractions and decimals Convert between fractions, decimals and percentages Investigate the concept of irrational numbers Express one quantity as a fraction/percentage of another Calculate fractions/percentages of quantities | | | | | <ul style="list-style-type: none"> Increase or decrease by a given percentage Solve problems involving fractions, decimals and percentages | | <ul style="list-style-type: none"> Use index notation for positive integral indices Express a whole number as a product of its prime factors Apply the order of operations to evaluate numerical expressions involving indices Determine and apply tests of divisibility Find square roots and cube roots Determine and apply the index laws to numerical expressions with positive integral indices Determine and apply the meaning of the zero index | | |

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|--------|---|--------|---|--------|--|--------|--------|--------|--------|---------|
| Term 3 | 7 Simple Probability | | 8 Time | | 9 Introductory Algebra | | | | | |
| | MA4-1WM, MA4-2WM, MA4-3WM, MA3-19SP, MA4-21SP | | MA4-1WM, MA4-2WM, MA3-13MG, MA4-15MG | | MA4-1WM, MA4-2WM, MA4-3WM, MA4-8NA | | | | | |
| | <ul style="list-style-type: none"> Construct sample spaces for single-step experiments with equally likely outcomes Find probabilities of events in single-step experiments Identify complementary events and use the sum of probabilities to solve problems | | <ul style="list-style-type: none"> Perform operations with time units mentally and with a calculator Interpret international time zones | | <ul style="list-style-type: none"> Use letters to represent numbers Recognise and use simple equivalent algebraic expressions Simplify algebraic expressions involving the four operations Substitute into algebraic expressions | | | | | |

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|--------|---|--------|--------|---|--------|--|--------|--------|---|---------|
| Term 4 | 10 Simple Equations | | | 11 Pythagoras' Theorem | | 12 Length, Perimeter and Circumference | | | 13 Transformations on the Number Plane | |
| | MA4-1WM, MA4-2WM, MA4-3WM, MA4-10NA | | | MA4-1WM, MA4-2WM, MA4-16MG | | MA4-1WM, MA4-2WM, MA3-9MG, MA4-12MG | | | MA4-1WM, MA4-3WM, MA3-8NA, MA4-11NA | |
| | <ul style="list-style-type: none"> Solve simple linear equations using algebraic techniques Solve simple quadratic equations of the form $x^2 = c$ | | | <ul style="list-style-type: none"> Establish and apply Pythagoras' theorem to find sides in right-angled triangles Solve problems involving Pythagoras' theorem | | <ul style="list-style-type: none"> Find perimeters of two-dimensional shapes Investigate the concept of π Establish and use formulas to find circumferences of circles Find the perimeters of quadrants, semi-circles and sectors Solve problems involving perimeter and circumference | | | <ul style="list-style-type: none"> Locate and describe points on the Cartesian plane using coordinates Describe translations and reflections in an axis on the Cartesian plane Describe rotations of multiples of 90° on the Cartesian plane | |

Mathematics Sample Stage 4 Scope and Sequence – Year 8 (illustrating the completion of Stage 4 by the end of Year 8 referencing key ideas)

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 |
|--------|---|--------|--------|--------|---|--------|--------|--------|--------|---------|
| Term 1 | 1 Area of Plane Shapes | | | | 2 Data Collection, Representation and Simple Analysis | | | | | |
| | MA4-1WM, MA4-2WM, MA3-10MG, MA4-13MG | | | | MA4-1WM, MA4-2WM, MA4-3WM, MA3-18SP, MA4-19SP, MA4-20SP | | | | | |
| | <ul style="list-style-type: none"> Convert between metric units of area Establish and use formulas to find the areas of special quadrilaterals and circles Solve problems involving area | | | | <ul style="list-style-type: none"> Investigate techniques for collecting data and consider their implications and limitations Collect and interpret data from primary and secondary sources Construct and interpret frequency tables, histograms and polygons Construct and interpret dot plots, stem-and-leaf plots, divided bar graphs, sector graphs and line graphs Calculate mean, median, mode and range for sets of data Investigate the effect of outliers on the mean and median Describe and interpret a variety of data displays using median, mean and range | | | | | |

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|--------|---|--------|--------|--------|--|--------|--------|--|--------|---------|
| Term 2 | 3 Financial Mathematics | | | | 4 Volume and Capacity of Prisms and Cylinders (including area review) | | | 5 Further Probability (including Venn diagrams) | | |
| | MA4-1WM, MA4-2WM, MA4-3WM, MA4-5NA, MA4-6NA | | | | MA4-1WM, MA4-2WM, MA3-11MG, MA4-14MG | | | MA4-1WM, MA4-2WM, MA4-3WM, MA4-21SP | | |
| | <ul style="list-style-type: none"> Review calculations with percentages Solve problems involving percentages Perform calculations involving GST Calculate discounts and 'best buys' Solve problems involving profit and loss | | | | <ul style="list-style-type: none"> Visualise and draw different views of three-dimensional objects Convert between metric units of volume and capacity Establish and use formulas to find volumes of right prisms and cylinders Solve problems involving volume and capacity | | | <ul style="list-style-type: none"> Describe events using language of 'at least', exclusive 'or' (A or B but not both), inclusive 'or' (A or B or both) and 'and' Represent events in two-way tables and Venn diagrams and solve related problems | | |

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|--------|--|--------|--------|--------|--|--------|--------|---|--------|---------|
| Term 3 | 6 Further Algebra | | | | 7 Further Linear Equations | | | 8 Patterns and Linear Relationships | | |
| | MA4-1WM, MA4-2WM, MA4-3WM, MA4-8NA | | | | MA4-1WM, MA4-2WM, MA4-3WM, MA4-10NA | | | MA4-1WM, MA4-3WM, MA4-11NA | | |
| | <ul style="list-style-type: none"> Simplify algebraic expressions involving the four operations Substitute into algebraic expressions Expand and factorise simple algebraic expressions | | | | <ul style="list-style-type: none"> Solve simple linear equations using algebraic techniques, including equations involving one fraction | | | <ul style="list-style-type: none"> Recognise, describe and record geometric and number patterns in words and algebraic symbols Plot linear relationships created from simple patterns and equations Solve simple linear equations using graphical techniques | | |

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|--------|---|--------|--------|--------|---|--------|--------|--|--------|---------|
| Term 4 | 9 Geometry and Congruence | | | | 10 Ratios, Rates and Distance/Time Graphs | | | 11 Data Interpretation and Evaluation | | |
| | MA4-1WM, MA4-2WM, MA4-3WM, MA4-17MG | | | | MA4-1WM, MA4-2WM, MA4-3WM, MA4-7NA | | | MA4-1WM, MA4-2WM, MA4-3WM, MA4-19SP, MA4-20SP | | |
| | <ul style="list-style-type: none"> Solve simple numerical exercises based on geometrical properties Identify congruent figures Identify congruent triangles using the four tests | | | | <ul style="list-style-type: none"> Apply ratios and rates to solve problems Interpret and draw distance/time graphs | | | <ul style="list-style-type: none"> Describe and interpret a variety of data displays using median, mean and range Calculate and compare summary statistics of different samples drawn from the same population | | |