

# Mathletics

## South Australia (Australian Curriculum v9)

### Scope & Sequence



Year 5

Mathletics

	Term one	Term two	Term three	Term four
Unit 1	<b>Number</b>	<b>Number</b>	<b>Number</b>	<b>Number Algebra</b>
	<b>Whole number and decimals</b> <ul style="list-style-type: none"> <li>Place value to thousandths</li> <li>Partitioning</li> <li>Compare &amp; order</li> <li>Whole number review</li> </ul>	<b>Fractions</b> <ul style="list-style-type: none"> <li>Compare and order</li> <li>Mixed numbers &amp; improper fractions</li> <li>Equivalent fractions</li> <li>Add &amp; Subtract fractions: Same or related denominators</li> </ul>	<b>Fractions, decimals, and percentages</b> <ul style="list-style-type: none"> <li>Connect fraction, decimal and percentage equivalents</li> <li>Represent remainders as fractions and decimals</li> <li>Problem solving</li> </ul>	<b>Number and operations review</b> <p>Review earlier content</p>
Unit 2	<b>Number</b>	<b>Number Algebra</b>	<b>Number</b>	<b>Statistics</b>
	<b>Addition and subtraction: Mental</b> <ul style="list-style-type: none"> <li>Round to estimate</li> <li>Problem solving</li> <li>Strategy review</li> </ul>	<b>Multiplication and division: Mental strategies</b> <ul style="list-style-type: none"> <li>Efficient mental strategies</li> <li>Factorising</li> <li>Problem solving</li> </ul>	<b>Multiplication and division: Written strategies</b> <ul style="list-style-type: none"> <li>Multiplication algorithm</li> <li>Contracted division</li> <li>Problem solving</li> </ul>	<b>Data: Investigation and evaluation</b> <ul style="list-style-type: none"> <li>Misleading diagrams</li> <li>Evaluate statements about displays</li> <li>Interpret data displays</li> <li>Mode</li> </ul>
Unit 3	<b>Number Algebra</b>	<b>Number Algebra</b>	<b>Probability Statistics</b>	<b>Measurement</b>
	<b>Factors, multiples and patterns</b> <ul style="list-style-type: none"> <li>Factors, Multiples</li> <li>Common multiples</li> <li>Divisibility tests</li> <li>Patterns with factors &amp; multiples</li> </ul>	<b>Algebra</b> <ul style="list-style-type: none"> <li>Create and use algorithms</li> <li>Inverse operations</li> <li>Fact families</li> <li>Find unknown values</li> </ul>	<b>Chance and data</b> <ul style="list-style-type: none"> <li>List outcomes</li> <li>Conduct chance experiments</li> <li>Record results</li> <li>Compare outcomes</li> <li>Estimate likelihoods</li> </ul>	<b>Time and position</b> <ul style="list-style-type: none"> <li>Read and represent 12- &amp; 24-hour time</li> <li>Convert times</li> <li>Use timetables</li> <li>Grid coordinate systems</li> <li>Directional language</li> </ul>
Unit 4	<b>Measurement Number</b>	<b>Measurement</b>	<b>Space</b>	<b>Measurement</b>
	<b>Length, area and perimeter</b> <ul style="list-style-type: none"> <li>Kilometres, metres, centimetres &amp; millimetres</li> <li>Compare &amp; order lengths</li> <li>Estimate lengths</li> <li>Calculate perimeter</li> <li>Calculate area</li> </ul>	<b>Addition and subtraction: Written</b> <ul style="list-style-type: none"> <li>Written strategies</li> </ul>	<b>Angles and 2D shapes</b> <ul style="list-style-type: none"> <li>Measure angles</li> <li>Estimate angles</li> <li>Classify angles</li> <li>Translations, reflections &amp; rotations</li> <li>Symmetry</li> </ul>	<b>Measurement applications</b> <ul style="list-style-type: none"> <li>Choose appropriate units</li> <li>Use measurement in everyday situations</li> <li>Problem solving</li> <li>Area and perimeter applications</li> </ul>
Unit 5	<b>Statistics</b>	<b>Space</b>	<b>Measurement Number</b>	<b>Space</b>
	<b>Data: Representation and interpretation</b> <ul style="list-style-type: none"> <li>Collect data</li> <li>Validate data</li> <li>Represent data</li> </ul>	<b>2D space and 3D objects</b> <ul style="list-style-type: none"> <li>Connect 2D shapes with 3D objects</li> <li>Connect &amp; create nets</li> <li>Sketch 3D objects</li> </ul>	<b>Capacity and mass</b> <ul style="list-style-type: none"> <li>Kilolitres, litres &amp; millilitres</li> <li>Tonnes, kilograms &amp; grams</li> <li>Compare &amp; order</li> <li>Estimate</li> <li>Problem solving</li> </ul>	<b>Space review</b> <ul style="list-style-type: none"> <li>Review transformations</li> <li>Tessellation patterns</li> <li>Review Cartesian plane</li> </ul>

Strand	Outcomes and content descriptions	Located
Number	<b>AC9M5N01</b> interpret, compare and order numbers with more than 2 decimal places, including numbers greater than one, using place value understanding; represent these on a number line	T1 U1 T3 U1, U5
	<b>AC9M5N02</b> express natural numbers as products of their factors, recognise multiples and determine if one number is divisible by another	T1 U3 T2 U2 T3 U2 T4 U1
	<b>AC9M5N03</b> compare and order fractions with the same and related denominators including mixed numerals, applying knowledge of factors and multiples; represent these fractions on a number line	T2 U1 T3 U1
	<b>AC9M5N04</b> recognise that 100% represents the complete whole and use percentages to describe, represent and compare relative size; connect familiar percentages to their decimal and fraction equivalents	T3 U1
	<b>AC9M5N05</b> solve problems involving addition and subtraction of fractions with the same or related denominators, using different strategies	T2 U1 T4 U1
	<b>AC9M5N06</b> solve problems involving multiplication of larger numbers by one- or two-digit numbers, choosing efficient calculation strategies and using digital tools where appropriate; check the reasonableness of answers	T2 U2 T3 U2 T4 U1
	<b>AC9M5N07</b> solve problems involving division, choosing efficient strategies and using digital tools where appropriate; interpret any remainder according to the context and express results as a whole number, decimal or fraction	T2 U2 T3 U1, U2 T4 U1
	<b>AC9M5N08</b> check and explain the reasonableness of solutions to problems including financial contexts using estimation strategies appropriate to the context	T1 U2, U4 T2 U2
	<b>AC9M5N09</b> use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate the problems, choosing operations and efficient calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation	T1 U2 T2 U2, U4 T3 U2 T4 U1
	<b>AC9M5N010</b> create and use algorithms involving a sequence of steps and decisions and digital tools to experiment with factors, multiples and divisibility; identify, interpret and describe emerging patterns	T1 U3 T2 U3
Algebra	<b>AC9M5A01</b> recognise and explain the connection between multiplication and division as inverse operations and use this to develop families of number facts	T1 U3 T2 U3
	<b>AC9M5A02</b> find unknown values in numerical equations involving multiplication and division using the properties of numbers and operations	T1 U3 T2 U3

Strand	Outcomes and content descriptions	Located
Measurement	<b>AC9M5M01</b> choose appropriate metric units when measuring the length, mass and capacity of objects; use smaller units or a combination of units to obtain a more accurate measure	T1 U4 T3 U5 T4 U4
	<b>AC9M5M02</b> solve practical problems involving the perimeter and area of regular and irregular shapes using appropriate metric units	T1 U4 T4 U4
	<b>AC9M5M03</b> compare 12- and 24-hour time systems and solve practical problems involving the conversion between them	T4 U3, U4
	<b>AC9M5M04</b> estimate, construct and measure angles in degrees, using appropriate tools including a protractor, and relate these measures to angle names	T3 U4
Space	<b>AC9M5SP01</b> connect objects to their nets and build objects from their nets using spatial and geometric reasoning	T2 U5
	<b>AC9M5SP02</b> construct a grid coordinate system that uses coordinates to locate positions within a space; use coordinates and directional language to describe position and movement	T4 U3, U5
	<b>AC9M5SP03</b> describe and perform translations, reflections and rotations of shapes, using dynamic geometric software where appropriate; recognise what changes and what remains the same, and identify any symmetries	T3 U4 T4 U5
Statistics	<b>AC9M5ST01</b> acquire, validate and represent data for nominal and ordinal categorical and discrete numerical variables to address a question of interest or purpose using software including spreadsheets; discuss and report on data distributions in terms of highest frequency (mode) and shape, in the context of the data	T1 U5 T3 U3 T4 U2
	<b>AC9M5ST02</b> interpret line graphs representing change over time; discuss the relationships that are represented and conclusions that can be made	T1 U5 T4 U2
	<b>AC9M5ST03</b> plan and conduct statistical investigations by posing questions or identifying a problem and collecting relevant data; choose appropriate displays and interpret the data; communicate findings within the context of the investigation	T1 U5 T3 U3
Probability	<b>AC9M5P01</b> list the possible outcomes of chance experiments involving equally likely outcomes and compare to those which are not equally likely	T3 U3
	<b>AC9M5P02</b> conduct repeated chance experiments including those with and without equally likely outcomes, observe and record the results ; use frequency to compare outcomes and estimate their likelihoods	T3 U3

Strand & Topic	Outcomes	New Courses	Activities (Courses)	Skill Quests	Challenges	Ebooks
<b>Unit 1</b> Number <hr/> <b>Whole number and decimals</b> <hr/> Place value to thousandths Partitioning Compare & order Whole number review	<b>AC9M5N01</b> interpret, compare and order numbers with more than 2 decimal places, including numbers greater than one, using place value understanding; represent these on a number line	<b>Y5 Decimals</b> <ul style="list-style-type: none"> <li>Tenths</li> <li>Hundredths</li> <li>Thousandths</li> <li>Decimals on the number line</li> <li>Order and compare decimals</li> </ul> <b>Y5 Rounding and Estimation</b> <ul style="list-style-type: none"> <li>Place Value</li> <li>Comparing and ordering whole numbers</li> </ul>	<b>REVIEW Whole Numbers &amp; Place Value</b> <ul style="list-style-type: none"> <li>Place Value to Millions</li> <li>Numbers from Words to Digits 1</li> <li>Numbers from Words to Digits 2</li> <li>Greater Than or Less Than?</li> <li>Partition and Rename</li> <li>3/Understanding Place Value 3 (CAN)</li> <li>Expanded Notation</li> <li>Decimals from Words to Digits 1</li> <li>Decimals on the Number Line</li> <li>Decimal Place Value</li> <li>Nearest Whole Number</li> </ul>	<b>Understand decimals to thousandths</b> <ul style="list-style-type: none"> <li>Introducing decimal thousandths</li> <li>Partitioning decimals of any size</li> <li>Comparing &amp; ordering decimals</li> <li>Interpreting zeros at end of decimals</li> <li>Decimal &amp; fraction equivalences</li> <li>Connecting decimals to the metric system</li> </ul>	<b>Number &amp; Algebra: Decimals</b> LEVEL 4–6 <ul style="list-style-type: none"> <li>Code cracker (DOK 2)</li> </ul>	<b>(Y6-G) Fractions, Decimals and Percentages</b> <ul style="list-style-type: none"> <li>Decimal fractions (pp 12–20)</li> </ul>
<b>Unit 2</b> Number <hr/> <b>Addition and subtraction: Mental</b> <hr/> Round to estimate Problem solving Strategy review	<b>AC9M5N08</b> check and explain the reasonableness of solutions to problems ...  <b>AC9M5N09</b> use mathematical modelling to solve practical problems involving additive and multiplicative situations ...	<b>Y5 Addition and Subtraction</b> <ul style="list-style-type: none"> <li>Addition strategies</li> <li>Subtraction strategies</li> </ul> <b>Y5 Rounding and Estimation</b> <ul style="list-style-type: none"> <li>Rounding</li> <li>Estimation</li> </ul>	<b>Rounding &amp; estimating</b> <ul style="list-style-type: none"> <li>Rounding Numbers 1</li> <li>Estimate Sums</li> <li>Estimate Differences</li> </ul> <b>REVIEW Whole Numbers &amp; Place Value</b> <ul style="list-style-type: none"> <li>Rounding Numbers</li> </ul> <b>Rounding &amp; estimating</b> <ul style="list-style-type: none"> <li>Estimate Decimal Sums 2</li> </ul>	<b>Estimation &amp; rounding</b> <ul style="list-style-type: none"> <li>Rounding to estimate addition &amp; subtraction</li> </ul> <b>Add &amp; subtract practical problems</b> <ul style="list-style-type: none"> <li>Addition &amp; subtraction word problems</li> <li>Expressing word problems as equations add/sub</li> <li>Solving add &amp; subtract money problems</li> </ul>	<b>Number &amp; Algebra: Decimals</b> LEVEL 5–7 <ul style="list-style-type: none"> <li>Posting parcels (DOK 2)</li> </ul> <b>Number &amp; Algebra: Addition &amp; Subtraction</b> LEVEL 3–5 <ul style="list-style-type: none"> <li>Solve the zig-zog logic fog (DOK 3)</li> <li>Mental strategies (DOK 3)</li> </ul> LEVEL 4–6 <ul style="list-style-type: none"> <li>Totally magic grid (DOK 2)</li> </ul> LEVEL 5–7 <ul style="list-style-type: none"> <li>Add-venn-turous adding (DOK 2)</li> </ul>	<b>(Y6-C) Addition and Subtraction</b> <ul style="list-style-type: none"> <li>Mental strategies (pp 1–10)</li> <li>Applying strategies (pp 11–19)</li> </ul>
<b>Unit 3</b> Number Algebra <hr/> <b>Factors, multiples and patterns</b> <hr/> Factors Multiples Common multiples Divisibility tests Patterns with factors & multiples	<b>AC9M5N02</b> express natural numbers as products of their factors ...  <b>AC9M5N010</b> create and use algorithms involving a sequence of steps and decisions ...  <b>AC9M5A01</b> recognise and explain the connection between multiplication and division ...  <b>AC9M5A02</b> find unknown values in numerical equations involving multiplication and division ...	Coming soon	<b>Factors &amp; Multiples</b> <ul style="list-style-type: none"> <li>Multiples</li> <li>Lowest Common Multiple</li> <li>Factors</li> <li>Highest Common Factor</li> <li>Find the Factor</li> <li>Divisibility Tests (2, 5, 10)</li> <li>Divisibility Tests (3, 4, 9)</li> <li>Tests of Divisibility 1</li> </ul>	<b>Multiples &amp; factors</b> <ul style="list-style-type: none"> <li>Finding multiples</li> <li>Finding factors</li> <li>Solving problems using factors &amp; multiples</li> </ul> <b>Divisibility tests</b> <ul style="list-style-type: none"> <li>Divisibility tests for 2, 5 &amp; 10</li> <li>Divisibility tests for 3, 4, 6, 8 &amp; 9</li> </ul> <b>Create &amp; use algorithms</b> <ul style="list-style-type: none"> <li>Factors &amp; multiples</li> </ul>	<b>Number &amp; Algebra: Multiplication &amp; Division</b> LEVEL 3–5 <ul style="list-style-type: none"> <li>The greatest triangle! (DOK 2)</li> </ul> LEVEL 4–6 <ul style="list-style-type: none"> <li>Peculiar patterns with multiples (DOK 2)</li> <li>Multiple muffins (DOK 2)</li> <li>Supermarket stock dilemma (DOK 2)</li> <li>Training in sync (DOK 2)</li> <li>Factor in our clues (DOK 2)</li> <li>Tricky factors (DOK 2)</li> <li>Multiple relationships (DOK 2)</li> <li>Factor finding (DOK 2)</li> <li>Fear fact-ors (DOK 2)</li> </ul> <b>Number &amp; Algebra: Addition &amp; Subtraction</b> LEVEL 3–5 <ul style="list-style-type: none"> <li>Scores for a ball game (DOK 3)</li> </ul> LEVEL 4–6 <ul style="list-style-type: none"> <li>Multiple patterns (DOK 3)</li> </ul>	<b>(Y5-F) Multiplication and Division</b> <ul style="list-style-type: none"> <li>Mental multiplication strategies (pp 9–10)</li> <li>Mental division strategies (pp 18–19)</li> </ul>




Strand & Topic	Outcomes	New Courses	Activities (Courses)	Skill Quests	Challenges	Ebooks
<p><b>Unit 4</b> Measurement Number</p> <hr/> <p><b>Length, area and perimeter</b></p> <p>Kilometres, metres, centimetres &amp; millimetres Compare &amp; order lengths Estimate lengths Calculate perimeter Calculate area</p>	<p><b>AC9M5M01</b> choose appropriate metric units when measuring the length, mass and capacity of objects ...</p> <p><b>AC9M5M02</b> solve practical problems involving the perimeter and area of regular and irregular shapes ...</p> <p><b>AC9M5N08</b> check and explain the reasonableness of solutions to problems ...</p>		<p><b>Measurement</b></p> <ul style="list-style-type: none"> <li>Kilometre Conversions</li> <li>Metres and Kilometres</li> <li>Perimeter: Squares and Rectangles</li> <li>Area of Shapes</li> <li>Biggest Shape/Bigger or smaller shape</li> <li>Equal Areas</li> <li>Area: Squares and Rectangles</li> </ul> <p><b>Fractions decimals &amp; percentages</b></p> <ul style="list-style-type: none"> <li>Centimetres and Metres</li> </ul>	<p><b>Choose appropriate metric units</b></p> <ul style="list-style-type: none"> <li>Introducing kilometres</li> <li>Comparing &amp; ordering units of length</li> <li>Selecting appropriate units - length</li> </ul> <p><b>Perimeter &amp; area - practical problems</b></p> <ul style="list-style-type: none"> <li>Calculating perimeter practical problems</li> <li>Calculating area practical problems</li> </ul>	<p><b>Measurement: Length</b> LEVEL 3–5</p> <ul style="list-style-type: none"> <li>Divide and measure with rods (DOK 2)</li> </ul> <p>LEVEL 4–6</p> <ul style="list-style-type: none"> <li>Lengthy thinking (DOK 2)</li> </ul> <p><b>Measurement: Area</b> LEVEL 3–5</p> <ul style="list-style-type: none"> <li>Make a puppy play area (DOK 2)</li> <li>Farmer's fences (DOK 3)</li> </ul> <p>LEVEL 4–6</p> <ul style="list-style-type: none"> <li>Shade a shape (DOK 3)</li> <li>Five and ten, squares and units (DOK 3)</li> </ul>	<p><b>(Y5-F) Length, Perimeter and Area</b></p> <ul style="list-style-type: none"> <li>Units of length (pp 1–8)</li> <li>Travelling far (pp 9–16)</li> <li>Perimeter (pp 17–24)</li> <li>Area (pp 25–32)</li> </ul>
<p><b>Unit 5</b> Statistics</p> <hr/> <p><b>Data: Representation &amp; interpretation</b></p> <p>Collect data Validate data Represent data</p>	<p><b>AC9M5ST01</b> acquire, validate and represent data for nominal and ordinal categorical and discrete numerical variables to address a question of interest or purpose using software including spreadsheets ...</p> <p><b>AC9M5ST02</b> interpret line graphs representing change over time ...</p> <p><b>AC9M5ST03</b> plan and conduct statistical investigations by posing questions or identifying a problem and collecting relevant data ...</p>		<p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>Line Graphs: Interpretation</li> <li>Travel Graphs</li> <li>Stem and Leaf Plots: -Concept</li> <li>Dot Plots</li> <li>Divided Bar Graphs</li> <li>Tally Charts</li> <li>Sector Graphs</li> </ul>	<p><b>Acquire, validate &amp; represent data</b></p> <ul style="list-style-type: none"> <li>Conducting surveys or statistical investigations</li> </ul>	<p><b>Statistics &amp; Data</b> LEVEL 5–7</p> <ul style="list-style-type: none"> <li>New director (DOK 3)</li> </ul>	<p><b>(Y5-F) Data Representation</b></p> <ul style="list-style-type: none"> <li>Types of graphs 1 (pp 1–6)</li> <li>Types of graphs 2 (pp 7–11)</li> <li>Types of graphs 3 (pp 12–17)</li> <li>Collecting and analysing data (pp 18–23)</li> </ul>








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<p><b>Unit 1</b> Number</p> <hr/> <p><b>Fractions</b></p> <p>Compare and order Mixed numbers &amp; improper fractions Equivalent fractions Add &amp; Subtract fractions: Same or related denominators</p>	<p><b>AC9M5N03</b> compare and order fractions with the same and related denominators ...</p> <p><b>AC9M5N05</b> solve problems involving addition and subtraction of fractions with the same or related denominators ...</p>	<p><b>Y5 Fractions</b></p> <ul style="list-style-type: none"> <li>Fractions</li> <li>Equivalence</li> <li>Compare and order fractions</li> <li>Improper fractions and mixed numbers</li> <li>Add fractions</li> <li>Subtract fractions</li> <li>Problem solving with fractions</li> </ul>	<p><b>Compare &amp; order fractions</b></p> <ul style="list-style-type: none"> <li>Shading Equivalent Fractions</li> <li>Equivalent Fraction Wall 1</li> <li>Equivalent Fractions on a Number Line 1</li> <li>Equivalent Fractions</li> <li>Compare Fractions 1a</li> <li>Compare Fractions 1b</li> <li>Identifying Fractions Beyond 1</li> <li>Improper to Mixed</li> <li>Mixed to Improper</li> <li>Converting Mixed and Improper</li> <li>Identifying Fractions on a Number Line</li> <li>Mixed and Improper fractions on a number Line</li> </ul> <p><b>Add &amp; Subtract related fractions</b></p> <ul style="list-style-type: none"> <li>Add: Common Denominator</li> <li>Subtract: Common Denominator</li> <li>Common Denominator</li> <li>Add Like Mixed Numbers</li> <li>Subtract Like Mixed Numbers</li> </ul>	<p><b>Compare &amp; order fractions</b></p> <ul style="list-style-type: none"> <li>Comparing &amp; ordering fractions</li> <li>Comparing &amp; ordering fractions &amp; mixed numbers</li> <li>Using common factors to simplify proper fractions</li> </ul> <p><b>Add &amp; subtract fractions</b></p> <ul style="list-style-type: none"> <li>Add &amp; subtract proper fractions - same denominator</li> <li>Add &amp; subtract mixed numerals - same denominator</li> <li>Add &amp; subtract fractions - related denominators</li> <li>Add &amp; subtract mixed num - related denominators</li> </ul>	<p><b>Number &amp; Algebra: Fractions</b> LEVEL 3–5</p> <ul style="list-style-type: none"> <li>Which is closer to 1? (DOK 2)</li> <li>What fraction is that? (DOK 2)</li> <li>Drinking equivalent fractions (DOK 3)</li> </ul> <p>LEVEL 4–6</p> <ul style="list-style-type: none"> <li>Fractions in uneven partitioned shapes (DOK 2)</li> <li>Fractional relay races (DOK 2)</li> </ul>	<p>(Y5-F) <b>Fractions, Decimals and Percentages</b></p> <ul style="list-style-type: none"> <li>Types of fractions (pp 9–16)</li> <li>Calculating (pp 26–29)</li> </ul>
<p><b>Unit 2</b> Number Algebra</p> <hr/> <p><b>Multiplication and division: Mental strategies</b></p> <p>Efficient mental strategies Factorising Problem solving</p>	<p><b>AC9M5N02</b> express natural numbers as products of their factors ...</p> <p><b>AC9M5N06</b> solve problems involving multiplication of larger numbers by one- or two-digit numbers ...</p> <p><b>AC9M5N07</b> solve problems involving division ...</p> <p><b>AC9M5N08</b> check and explain the reasonableness of solutions to problems ...</p> <p><b>AC9M5N09</b> use mathematical modelling to solve practical problems involving additive and multiplicative situations ...</p>	<p><b>Y5 Multiplication and Division</b></p> <ul style="list-style-type: none"> <li>Multiplication strategies</li> <li>Multiples and powers of <math>10 \times</math></li> <li>Multiples and powers of <math>10 \div</math></li> <li>Division strategies</li> </ul> <p><b>Y5 Rounding and Estimation</b></p> <ul style="list-style-type: none"> <li>Rounding</li> <li>Estimation</li> </ul>	<p><b>More Multiplication &amp; division</b></p> <ul style="list-style-type: none"> <li>Multiply Multiples of 10</li> <li>Multiply More Multiples of 10</li> <li>Multiply 2 Digits Area Model</li> <li>Grid Methods 1</li> <li>Double and Halve to Multiply</li> <li>Mental Methods Multiplication 1</li> <li>Dividing by 10, 100, 1000</li> <li>Division Facts 1</li> <li>Remainders by Arrays</li> <li>Mental Methods Division 1</li> <li>Mental Methods Division</li> </ul> <p><b>Solve problems</b></p> <ul style="list-style-type: none"> <li>Bar model <math>\times \div</math></li> <li>Problems: Times and Divide</li> </ul> <p><b>Rounding &amp; estimating</b></p> <ul style="list-style-type: none"> <li>Estimate Products</li> <li>Estimate Quotients</li> <li>Estimation: Multiply and Divide</li> <li>Estimate Decimal Operations</li> </ul>	<p><b>Strategies to multiply by 1- or 2-digits</b></p> <ul style="list-style-type: none"> <li>Multiplication using multiples of 10</li> <li>Multiplying: rounding, compensating &amp; partitioning</li> <li>Multiplying: doubling, halving &amp; thirding</li> <li>Multiplying using the split method</li> <li>Multiplying using an area model</li> <li>Multiplying by factorising</li> </ul> <p><b>Division strategies incl. remainders</b></p> <ul style="list-style-type: none"> <li>Dividing by a 1-digit number using partitioning</li> <li>Dividing by a 2-digit number using partitioning</li> <li>Dividing by a 1-digit number using factorising</li> <li>Dividing by a 2-digit number using factorising</li> </ul> <p><b>Estimation &amp; rounding</b></p> <ul style="list-style-type: none"> <li>Rounding to estimate multiplication &amp; division</li> <li>Estimating with money</li> </ul> <p><b>Multiply &amp; divide practical problems</b></p> <ul style="list-style-type: none"> <li>Multiplication &amp; division word problems</li> <li>Expressing word problems as equations mult/div</li> <li>Solving multi-step mult/div word problems</li> <li>Solving mult &amp; div money problems</li> </ul>	<p>(Y5-F) <b>Multiplication and Division</b></p> <ul style="list-style-type: none"> <li>Mental multiplication strategies (pp 1–10)</li> <li>Mental division strategies (pp 11–19)</li> </ul>	

Strand & Topic	Outcomes	New Courses	Activities (Courses)	Skill Quests	Challenges	Ebooks
<b>Unit 3</b> Number Algebra <hr/> <b>Algebra</b> <hr/> Create and use algorithms Inverse operations Fact families Find unknown values	<b>AC9M5N010</b> create and use algorithms involving a sequence of steps and decisions ... <b>AC9M5A01</b> recognise and explain the connection between multiplication and division as inverse operations ... <b>AC9M5A02</b> find unknown values in numerical equations involving multiplication and division ...	Coming soon	<b>Fact families Mult/Div</b> <ul style="list-style-type: none"> <li>Fact Families: Multiply and Divide</li> <li>Multiplication Turnarounds</li> <li>Missing Numbers: <math>\times</math> and <math>\div</math> facts</li> <li>Times Tables</li> <li>Multiply 3 single-digit numbers</li> </ul>	<b>Create &amp; use algorithms</b> <ul style="list-style-type: none"> <li>Manipulating numbers using a given rule</li> <li>Designing flowcharts to solve add/sub of fractions</li> </ul> <b>Connect multiplication &amp; division</b> <ul style="list-style-type: none"> <li>Inverse relationship - multiplication &amp; division</li> </ul> <b>Find unknown values in mult &amp; div</b> <ul style="list-style-type: none"> <li>Finding unknown values - multiplication &amp; division</li> </ul>	<b>Number &amp; Algebra: Whole Number</b> LEVEL 4–6 <ul style="list-style-type: none"> <li>Unknown values in uneven partitioned shapes (DOK 2)</li> </ul> <b>Number &amp; Algebra: Equations &amp; Expressions</b> LEVEL 4–6 <ul style="list-style-type: none"> <li>Shape equations (DOK 2)</li> <li>Steps to success (DOK 3)</li> </ul>	(Y5-F) <b>Patterns and Algebra</b> <ul style="list-style-type: none"> <li>Patterns and functions (pp 1–12)</li> <li>Equations and equivalence (pp 13–20)</li> <li>Using equations (pp 21–28)</li> </ul>
<b>Unit 4</b> Number <hr/> <b>Addition and subtraction: Written</b> <hr/> Written strategies	<b>AC9M5N09</b> use mathematical modelling to solve practical problems involving additive and multiplicative situations ...	<b>Y5 Addition and Subtraction</b> <ul style="list-style-type: none"> <li>Addition</li> <li>Subtraction</li> <li>Money calculations +-</li> </ul>	<b>Solve problems</b> <ul style="list-style-type: none"> <li>Columns that Add</li> <li>Add Two 2-Digit Numbers</li> <li>Add 3-Digit Numbers</li> <li>Columns that Subtract</li> <li>Subtract Numbers</li> </ul>			(Y5-F) <b>Addition and Subtraction</b> <ul style="list-style-type: none"> <li>Written methods (pp 17–25)</li> </ul> (Y5-F) <b>Fractions, Decimals and Percentages</b> <ul style="list-style-type: none"> <li>Calculating (pp 30–33)</li> </ul>
<b>Unit 5</b> Space <hr/> <b>2D space and 3D objects</b> <hr/> Connect 2D shapes with 3D objects Connect & create nets Sketch 3D objects	<b>AC9M5SP01</b> connect objects to their nets and build objects from their nets using spatial and geometric reasoning		<b>Space &amp; shape</b> <ul style="list-style-type: none"> <li>What Pyramid am I?</li> <li>What Prism am I?</li> <li>Prisms and Pyramids</li> </ul>	<b>Connect objects to nets</b> <ul style="list-style-type: none"> <li>Connecting prisms &amp; pyramids with their nets</li> <li>Connecting 3D objects with their nets</li> </ul>	<b>Geometry: 3D Shapes</b> LEVEL 4–6 <ul style="list-style-type: none"> <li>Notty nets (DOK 2)</li> <li>Looking at faces, edges and vertices (DOK 3)</li> </ul>	(Y5-F) <b>Geometry</b> <ul style="list-style-type: none"> <li>3D shapes (pp 25–34)</li> </ul>

Strand & Topic	Outcomes	New Courses	Activities (Courses)	Skill Quests	Challenges	Ebooks
<b>Unit 1</b> Number  <b>Fractions, decimals, and percentages</b>  Connect fraction, decimal and percentage equivalents  Represent remainders as fractions and decimals  Problem solving	<b>AC9M5N01</b> interpret, compare and order numbers with more than 2 decimal places ...  <b>AC9M5N03</b> compare and order fractions with the same and related denominators ...  <b>AC9M5N04</b> recognise that 100% represents the complete ...  <b>AC9M5N07</b> solve problems involving division ...	<b>Y5 Percentages</b> <ul style="list-style-type: none"> <li>Percentages</li> <li>Compare percentages</li> <li>Fractions and percentages</li> <li>Decimals, fractions and percentages</li> </ul>	<b>Fractions decimals &amp; percentages</b> <ul style="list-style-type: none"> <li>Modelling Percentages</li> <li>Fractions to Decimals</li> <li>Percents and Decimals</li> <li>Common Fractions as Percentages (AU)</li> <li>Decimal Order</li> <li>Comparing Decimals</li> </ul>	<b>Fractions, decimals &amp; percentages</b> <ul style="list-style-type: none"> <li>Introducing percentages</li> <li>Connecting percentages &amp; decimals</li> <li>Connecting percentages &amp; fractions</li> <li>Relationship - percentages, decimals &amp; fractions</li> </ul>		<b>(Y5-F) Fractions, Decimals and Percentages</b> <ul style="list-style-type: none"> <li>Fractions, decimals and percentages (pp 17–25)</li> </ul>
<b>Unit 2</b> Number Algebra  <b>Multiplication and division: Written strategies</b>  Multiplication algorithm  Contracted division  Problem solving	<b>AC9M5N02</b> express natural numbers as products of their factors ...  <b>AC9M5N06</b> solve problems involving multiplication of larger numbers ...  <b>AC9M5N07</b> solve problems involving division ...  <b>AC9M5N09</b> use mathematical modelling to solve practical problems ...	<b>Y5 Multiplication and Division</b> <ul style="list-style-type: none"> <li>Multiply by one digit</li> <li>Multiply by two digits</li> <li>Division</li> <li>Exploring remainders</li> <li>Division with remainders</li> </ul>	<b>Solve problems</b> <ul style="list-style-type: none"> <li>Multiply: 1-Digit Number</li> <li>Multiply: 2-Digit by 1-Digit</li> <li>Divide: 1-Digit Divisor 1</li> </ul>	<b>Strategies to multiply by 1- or 2-digits</b> <ul style="list-style-type: none"> <li>Multiplying using expanded algorithm</li> <li>Multiplying using contracted algorithm</li> <li>Multiplying using extended form of algorithm</li> </ul> <b>Division strategies incl. remainders</b> <ul style="list-style-type: none"> <li>Extended division - no remainders or zeros</li> <li>Extended division with remainders</li> <li>Extended division with &amp; without remainders</li> <li>Contracted division - no remainders or zeros</li> <li>Contracted division - no remainders</li> <li>Contracted division - with &amp; without remainders</li> <li>Dividing by 2-digit numbers - formal algorithms</li> </ul> <b>Multiply &amp; divide practical problems</b> <ul style="list-style-type: none"> <li>Multiplication &amp; division word problems</li> <li>Expressing word problems as equations mult/div</li> <li>Solving multi-step mult/div word problems</li> <li>Solving mult &amp; div money problems</li> </ul>		<b>(Y5-F) Multiplication and Division</b> <ul style="list-style-type: none"> <li>Written methods (pp 20–28)</li> <li>Puzzles and investigations (pp 29–32)</li> </ul>
<b>Unit 3</b> Probability Statistics  <b>Chance and data</b>  List outcomes  Conduct chance experiments  Record results  Compare outcomes  Estimate likelihoods	<b>AC9M5P01</b> list the possible outcomes of chance experiments ...  <b>AC9M5P02</b> conduct repeated chance experiments ...  <b>AC9M5ST01</b> acquire, validate and represent data ...  <b>AC9M5ST03</b> plan and conduct statistical investigations ...		<b>Chance &amp; Probability</b> <ul style="list-style-type: none"> <li>What are the Chances?</li> <li>Chance Gauge</li> <li>Introductory probability</li> <li>Fair Games</li> </ul>	<b>Outcomes of chance experiments</b> <ul style="list-style-type: none"> <li>Investigating equally likely outcomes</li> <li>Exploring fair &amp; unfair chance experiments</li> </ul>	<b>Chance &amp; Probability</b> LEVEL 4–6 <ul style="list-style-type: none"> <li>Ordering probabilities (DOK 3)</li> </ul>	<b>(Y5-F) Chance and Probability</b> <ul style="list-style-type: none"> <li>Chance and Probability (pp 1–10)</li> </ul>

Strand & Topic	Outcomes	New Courses	Activities (Courses)	Skill Quests	Challenges	Ebooks
<p><b>Unit 4</b> Measurement Space</p> <hr/> <p><b>Angles and 2D shape</b></p> <hr/> <p>Measure angles Estimate angles Classify angles Translations, reflections &amp; rotations Symmetry</p>	<p><b>AC9M5M04</b> estimate, construct and measure angles in degrees, using appropriate tools including a protractor, and relate these measures to angle names</p> <p><b>AC9M5SP03</b> describe and perform translations, reflections and rotations of shapes, using dynamic geometric software where appropriate ...</p>		<p><b>Measurement</b></p> <ul style="list-style-type: none"> <li>Classifying Angles</li> <li>Measuring Angles</li> <li>Estimating Angles</li> </ul> <p><b>Space &amp; shape</b></p> <ul style="list-style-type: none"> <li>Flip, Slide, Turn</li> <li>Transformations</li> <li>Rotational Symmetry</li> </ul>	<p><b>Estimate, construct &amp; measure angles</b></p> <ul style="list-style-type: none"> <li>Identifying, estimating &amp; measuring angles</li> <li>Classifying &amp; constructing angles</li> </ul> <p><b>Identify &amp; describe transformations</b></p> <ul style="list-style-type: none"> <li>Identifying &amp; describing transformations</li> </ul>	<p><b>Geometry: Angles</b> LEVEL 3–5</p> <ul style="list-style-type: none"> <li>Estimating angle measures (DOK 3)</li> </ul> <p>LEVEL 4–6</p> <ul style="list-style-type: none"> <li>Angle estimation (DOK 3)</li> </ul> <p><b>Geometry: Symmetry, Transformation &amp; Location</b> LEVEL 4–6</p> <ul style="list-style-type: none"> <li>Tessellations (DOK 3)</li> </ul>	<p>(YS-F) <b>Geometry</b></p> <ul style="list-style-type: none"> <li>Lines and angles (pp 1–6)</li> <li>2D shapes (pp 7–15)</li> <li>Transformation, tessellation and symmetry (pp 16–24)</li> </ul>
<p><b>Unit 5</b> Measurement Number</p> <hr/> <p><b>Capacity and mass</b></p> <hr/> <p>Kilolitres, litres &amp; millilitres Tonnes, kilograms &amp; grams Compare &amp; order Estimate Problem solving</p>	<p><b>AC9M5M01</b> choose appropriate metric units when measuring the length, mass and capacity of objects; use smaller units or a combination of units to obtain a more accurate measure</p> <p><b>AC9M5N01</b> interpret, compare and order numbers with more than 2 decimal places, including numbers greater than one, using place value understanding; represent these on a number line</p>		<p><b>Measurement</b></p> <ul style="list-style-type: none"> <li>Millilitres and Litres</li> <li>Litre Conversions</li> <li>Kilogram Conversions</li> <li>Grams and Kilograms</li> </ul>	<p><b>Choose appropriate metric units</b></p> <ul style="list-style-type: none"> <li>Comparing &amp; ordering units of mass</li> <li>Selecting appropriate units - mass</li> <li>Selecting appropriate units - capacity</li> </ul>	<p><b>Measurement: Volume &amp; Capacity</b> LEVEL 3–5</p> <ul style="list-style-type: none"> <li>Water water everywhere (DOK 3)</li> </ul> <p><b>Measurement: Mass</b> LEVEL 4–6</p> <ul style="list-style-type: none"> <li>Maze of masses (DOK 3)</li> </ul>	<p>(YS-F) <b>Volume, Capacity and Mass</b></p> <ul style="list-style-type: none"> <li>Volume and capacity (pp 1–2)</li> <li>Mass (pp 9–16)</li> </ul>

Strand & Topic	Outcomes	New Courses	Activities (Courses)	Skill Quests	Challenges	Ebooks
<b>Unit 1</b> Number Algebra <hr/> <b>Number and operations review</b>	<b>AC9M5N02</b> express natural numbers ... <b>AC9M5N05</b> solve problems involving addition and subtraction ... <b>AC9M5N06</b> solve problems involving multiplication ... <b>AC9M5N07</b> solve problems involving division ... <b>AC9M5N09</b> use mathematical modelling to solve practical problems ...	<b>Y5 Addition and Subtraction</b> <ul style="list-style-type: none"> <li>• Problem-solving with <math>+</math>–</li> </ul> <b>Y5 Multiplication and Division</b> <ul style="list-style-type: none"> <li>• Problem solving with <math>\times\div</math></li> </ul>	 <b>Review earlier content</b>	<b>All operations practical problems</b> <ul style="list-style-type: none"> <li>• Express equations as word problems all operations</li> </ul>	 <b>Review earlier content</b>	 <b>Review earlier content</b>
<b>Unit 2</b> Statistics <hr/> <b>Data: Investigation and evaluation</b>  Interpreting data displays Data distributions Mode Misleading diagrams Evaluate statements about displays	<b>AC9M5ST01</b> acquire, validate and represent data for nominal and ordinal categorical and discrete numerical variables ... <b>AC9M5ST02</b> interpret line graphs representing change over time ...		<b>Statistics</b> <ul style="list-style-type: none"> <li>• Mode</li> <li>• Mode from Stem and Leaf Plot</li> <li>• Mode from Frequency Table</li> <li>• Grouping data and modal class</li> </ul>	<b>Interpret line graphs</b> <ul style="list-style-type: none"> <li>• Interpreting line graphs</li> </ul> <b>Understand data distributions</b> <ul style="list-style-type: none"> <li>• Understanding &amp; calculating the mode</li> <li>• Introducing the shape of data distribution</li> </ul>	<b>Statistics and Data</b> LEVEL 4–6 <ul style="list-style-type: none"> <li>• Rugby modal mayhem (DOK 2)</li> <li>• Leap to the mode (DOK 2)</li> <li>• Discover the digits (DOK 2)</li> </ul>	(YS-F) <b>Data Representation</b> <ul style="list-style-type: none"> <li>• Data investigations (pp 24–28)</li> </ul>
<b>Unit 3</b> Measurement <hr/> <b>Time and position</b>  Read and represent 12- & 24-hour time Convert times Use timetables Grid coordinate systems Directional language	<b>AC9M5M03</b> compare 12- and 24-hour time systems and solve practical problems involving the conversion between them <b>AC9M5SP02</b> construct a grid coordinate system that uses coordinates to locate positions within a space; use coordinates and directional language to describe position and movement		<b>Time conversions &amp; problems</b> <ul style="list-style-type: none"> <li>• Time Conversions: Whole Number 1</li> <li>• Time Conversions: Whole Number 2</li> <li>• Elapsed Time</li> <li>• 24 Hour Time</li> <li>• Using Timetables</li> </ul> <b>Space &amp; shape</b> <ul style="list-style-type: none"> <li>• Map Coordinates</li> <li>• Coordinate Graphs: 1st Quadrant</li> <li>• More Directions!</li> </ul>	<b>Use 24-hour time</b> <ul style="list-style-type: none"> <li>• Using 24-hour notation</li> <li>• Using 24-hour time in timetables</li> </ul> <b>Use coordinates in a grid system</b> <ul style="list-style-type: none"> <li>• Working with grid referenced maps</li> <li>• Using Cartesian coordinate system - first quadrant</li> <li>• Using landmarks &amp; directional language</li> </ul>	<b>Measurement: Time</b> LEVEL 3–5 <ul style="list-style-type: none"> <li>• The mysteries of time (DOK 2)</li> <li>• Puppy-sitting (DOK 3)</li> </ul> LEVEL 4–6 <ul style="list-style-type: none"> <li>• 24-hour train time (DOK 2)</li> <li>• Ordering times (DOK 2)</li> <li>• Time to explore 4 (DOK 3)</li> </ul> <b>Geometry: Symmetry, Transformation &amp; Location</b> LEVEL 3–5 <ul style="list-style-type: none"> <li>• Routes on a map (DOK 3)</li> </ul> LEVEL 4–6 <ul style="list-style-type: none"> <li>• A journey back in time (DOK 2)</li> <li>• Which way? (DOK 3)</li> <li>• Island towns (DOK 3)</li> </ul>	(YS-F) <b>Time</b> <ul style="list-style-type: none"> <li>• Measuring time (pp 1–8)</li> <li>• Calculating time (pp 9–14)</li> <li>• Timetables (pp 15–20)</li> </ul>

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<b>Unit 4</b> Measurement  <b>Measurement applications</b>  Choose appropriate units Use measurement in everyday situations Problem solving Area and perimeter applications	<b>AC9M5M01</b> choose appropriate metric units when measuring the length, mass and capacity of objects ...  <b>AC9M5M02</b> solve practical problems involving the perimeter and area of regular and irregular shapes ...  <b>AC9M5M03</b> compare 12- and 24-hour time systems and solve practical problems ...		 <b>Classroom directed</b>	<b>Choose appropriate metric units</b> <ul style="list-style-type: none"> <li>Recognising suitable metric units - all</li> </ul>	 <b>Classroom directed</b>	 <b>Classroom directed</b>
<b>Unit 5</b> Space  <b>Space review</b>  Review transformations Tessellation patterns Review Cartesian plane	<b>AC9M5SP02</b> construct a grid coordinate system ...  <b>AC9M5SP03</b> describe and perform translations, reflections and rotations of shapes, using dynamic geometric software ...		 <b>Review earlier content</b>	 <b>Review earlier content</b>	 <b>Review earlier content</b>	 <b>Review earlier content</b>

# Mathletics

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