# Australian Years 7-10 Mathematics Curriculum v8.4

# Tables showing which M1 Maths modules relate to each curriculum element


| | | | |
|---|---|---|---|
| **Year 7** | Number and Algebra | Measurement and Geometry | Statistics and Probability |
| **Year 8** | Number and Algebra | Measurement and Geometry | Statistics and Probability |
| **Year 9** | Number and Algebra | Measurement and Geometry | Statistics and Probability |
| **Year 10** | Number and Algebra | Measurement and Geometry | Statistics and Probability |
| **Year 10A** | Number and Algebra | Measurement and Geometry | Statistics and Probability |


The syllabus element is in the left column and the relevant module is in the right column.

| Year 7 Number and Algebra | |
|---|---|
| 7 ACMNA149 Index notation, products of primes | N1-6 Powers |
| 7 ACMNA150 Square roots and perfect squares | |
| 7 ACMNA151 Associative, commutative and distributive laws | Skills - Mental arithmetic |
| 7 ACMNA280 Compare, order, add, subtract integers | N1-4 Negatives<br>N2-6 Negative operations |
| 7 ACMNA152 Equivalent fractions, positive and negative fraction on a number line | N1-3 Fraction conversions<br>N1-4 Negatives |
| 7 ACMNA153 Add and subtract fractions | N1-8 Common fraction operations 1<br>N2-7 Common fraction operations 2 |
| 7 ACMNA154 Multiply and divide fractions | |
| 7 ACMNA155 Express one quantity as a fraction of another | N1-2 Fraction meanings<br>N1-3 Fraction conversions |
| 7 ACMNA156 Round to a specified number of decimal places | N1-10 Rounding and Approximation |
| 7 ACMNA157 Convert between fractions, decimals and percentages | N1-3 Fraction conversions<br>N2-2 Fractions of numbers |
| 7 ACMNA158 Percentages of quantities and one quantity as a percentage of another | |
| 7 ACMNA173 Simple ratios | N2-4 Ratios |
| 7 ACMNA174 Best buys | N2-3 Rates |
| 7 ACMNA175 Concept of a variable | A1-2 Relations 2 |
| 7 ACMNA176 Creating and evaluating algebraic expressions | A1-6 Equations |
| 7 ACMNA177 Apply the laws of arithmetic to algebraic expressions | A2-2 Collecting terms<br>A2-3 Expanding |
| 7 ACMNA178 Cartesian coordinates | G1-3 Position |
| 7 ACMNA179 Solve simple linear equations | A1-6 Equations |
| 7 ACMNA180 Graphs | A1-1 Relations 1 |

| Year 7 Measurement and Geometry | |
|---|---|
| 7 ACMMG150 Areas of rectangles, triangles and parallelograms | M1-4 Length, area and volume 1<br>M2-3 Length, area and volume 2 |
| 7 ACMMG160 Volumes of Rectangular prisms | M1-4 Length, area and volume 1 |
| 7 ACMMG161 Draw different views of shapes made from prisms | G1-1 Drawings |
| 7 ACMMG181 Translations, reflections and simple rotations on the Cartesian plane | G2-5 Transformations and symmetry |
| 7 ACMMG165 Classify triangles and describe quadrilaterals | G2-3 Properties of polygons |
| 7 ACMMG166 Angle sums of triangles and quadrilaterals | G2-2 Geometric Figures |
| 7 ACMMG163 Corresponding, alternate and co-interior angles | |
| 7 ACMMG164 Condition for two lines to be parallel | |

| Year 7 Statistics and Probability | |
|---|---|
| 7 ACMSP167 Sample spaces for one-step experiments with equally likely outcomes | P1-1 Probability |
| 7 ACMSP168 Probabilities of outcomes and events | |
| 7 ACMSP169 Issues involving numerical data from primary and secondary sources | S2-1 Data collection<br>S3-3 Critiquing |
| 7 ACMSP170 Data displays including stem-and-leaf plots and dot plots | S1-1 Data displays 1<br>S3-2 Data displays 2 |
| 7 ACMSP171 Calculate and interpret mean, median, mode and range | S1-2 Data summary |
| 7 ACMSP172 Describe and interpret data displays using mean, median and range | |

| Year 8 Number and Algebra | |
|---|---|
| 8 ACMNA182 Index laws for whole number indices | N1-6 Powers<br>A3-10 Index laws 1-5 |
| 8 ACMNA183 The four operations on rational numbers | N1-9 Decimal operations 1<br>N1-8 Common fraction operations 1<br>N2-5 Decimal operations 2<br>N2-7 Common fraction operations 2 |
| 8 ACMNA184 Terminating and recurring decimals | N2-1 Number sets |
| 8 ACMNA186 Irrational numbers including pi | |
| 8 ACMNA187 Percentage problems including percentage increase and decrease | N2-2 Fractions of numbers |
| 8 ACMNA188 Rates and ratios | N2-3 Rates<br>N2-4 Ratios |
| 8 ACMNA189 Profit and loss | N2-2 Fractions of numbers |
| 8 ACMNA190 Apply the distributive law to algebraic expressions | A2-3 Expanding |
| 8 ACMNA191 Factorise algebraic expressions by identifying numerical factors | A4-1 Factorising |
| 8 ACMNA192 Simplify algebraic expressions involving the four operations | A2-2 Collecting Terms<br>A2-3 Expanding |
| 8 ACMNA193 Plot linear relations on the Cartesian plane | A1-1 Relations 1<br>A3-8 Linear functions |
| 8 ACMNA194 Solve linear equations algebraically and graphically, verify by substitution | A1-6 to A3-3 |

| Year 8 Measurement and Geometry | |
|---|---|
| 8 ACMMG195 Choose area and volume units and convert between units | M1-1 Dimensions, size and mass<br>M1-3 Unit conversion<br>M4-1 Length, area and volume 4 |
| 8 ACMMG196 Perimeters and areas of parallelograms, trapeziums, rhombuses and kites | M1-4 Length, area and volume 1 |
| 8 ACMMG197 Radius, diameter, circumference and area of circles and calculations | G2-4 Geometric vocabulary<br>M2-3 Length, area and volume 2 |
| 8 ACMMG198 Volumes of prisms | M2-3 Length, area and volume 2 |
| 8 ACMMG199 Duration with 12- and 24-hour time | M2-2 Time 2 |
| 8 ACMMG200 Define congruence of plane shapes using transformations | G2-6 Congruence |
| 8 ACMMG201 Conditions for congruence of triangles | |
| 8 ACMMG202 Properties of quadrilaterals | G2-3 Properties of polygons |

| Year 8 Statistics and Probability | |
|---|---|
| 8 ACMSP204 Complementary events and sums of probabilities | P2-1 Compound events |
| 8 ACMSP205 Problems involving 'and', 'inclusive or', 'exclusive or' and 'at least' | |
| 8 ACMSP292 Two-way tables and Venn diagrams | P2-2 Two-way tables<br>P2-3 Venn diagrams |
| 8 ACMSP284 Collecting data, including census, sampling and observation | S2-1 Data collection |
| 8 ACMSP206 Practicalities and implications of obtaining data through sampling | |
| 8 ACMSP293 Variation of means and proportions of random samples from a population | P6-6 Confidence intervals for proportions |
| 8 ACMSP207 Effect of individual data values, including outliers, on the mean and median | S1-2 Data summary |

| Year 9 Number and Algebra | | |
|---|---|---|
| 9 ACMNA208 | Direct proportion, rates as graphs and equations | N2-3 Rates<br>N3-3 Proportion |
| 9 ACMNA209 | Index laws for numerical expressions with integer indices | A5-2 Index Laws 6-10 |
| 9 ACMNA210 | Scientific notation | N3-1 Scientific notation |
| 9 ACMNA211 | Simple interest | N3-2 Simple interest |
| 9 ACMNA212 | Apply the whole number index laws to variables | A3-10 Index Laws 1-5<br>A5-2 Index Laws 6-10 |
| 9 ACMNA213 | Expand algebraic expressions, including binomials, and collect like terms | A2-3 Expanding<br>A4-1 Factorising |
| 9 ACMNA214 | Distance between two points located on the Cartesian plane | M3-1 Pythagoras |
| 9 ACMNA294 | Midpoint and gradient of a line segment on the Cartesian plane | M3-3 Slope<br>A3-8 Linear functions |
| 9 ACMNA215 | Sketch linear graphs using the coordinates of two points, solve linear equations | A3-8 Linear functions<br>A1-5 to A3-3 |
| 9 ACMNA296 | Graph simple non-linear relations with and without technology | A3-5 Solving by graphing |

| Year 9 Measurement and Geometry | | |
|---|---|---|
| 9 ACMMG216 | Areas of composite shapes | M3-4 Length, area and volume 3 |
| 9 ACMMG217 | Surface areas and volumes of cylinders | M4-1 Length, area and volume 4 |
| 9 ACMMG218 | Surface areas and volumes of right prisms | M2-3 Length, area and volume 2 |
| 9 ACMMG219 | Very small and very large time scales and intervals | M2-2 Time 2 |
| 9 ACMMG220 | Similarity in terms of enlargement, conditions for triangles to be similar | G3-1 Similarity |
| 9 ACMMG221 | Ratio and scale factors in similar figures | G3-1 Similarity |
| 9 ACMMG222 | Pythagoras Theorem | M3-1 Pythagoras |
| 9 ACMMG223 | Constancy of the sine, cosine and tangent ratios for a given angle | M3-2 Trigonometry |
| 9 ACMMG224 | Using trigonometry to solve right-angled triangles | M3-2 Trigonometry |

| Year 9 Statistics and Probability | | |
|---|---|---|
| 9 ACMSP225 | List all outcomes for two-step experiments, with and without replacement using tree diagrams or arrays, assign probabilities to outcomes and determine probabilities for events | P2-1 Compound Events<br>P3-1 Tree Diagrams |
| 9 ACMSP226 | Calculate relative frequencies to estimate probabilities of events involving 'and' or 'or' | P2-1 Compound Events |
| 9 ACMSP227 | Investigate how data were obtained to estimate population means and medians | S3-3 Critiquing |
| 9 ACMSP228 | Numerical and categorical variables, data direct and from secondary sources | S2-1 Data Collection<br>S3-4 Data Types |
| 9 ACMSP282 | Back-to-back stem plots and histograms, skewed, symmetric and bimodal data | S3-2 Data displays 2<br>S3-5 Data Distributions |
| 9 ACMSP283 | Location (mean, median) and spread (range) of numerical data sets | S1-2 Data summary |

| Year 10 Number and Algebra | | |
|---|---|---|
| 10 ACMNA229 | Compound interest | N4-1 Compound Interest |
| 10 ACMNA230 | Factorise algebraic expressions by taking out a common algebraic factor | A4-1 Factorising |
| 10 ACMNA231 | Simplify algebraic products and quotients using index laws | A3-10 Index laws 1-5<br>A5-2 Index laws 6-10 |
| 10 ACMNA232 | Apply the four operations to algebraic fractions with numerical denominators | A4-5 Algebraic fractions |
| 10 ACMNA233 | Expand binomial products and factorise monic quadratic expressions | A4-1 Factorising |
| 10 ACMNA234 | Substitute values into formulas to determine an unknown | A1-5 Substitution |
| 10 ACMNA235 | Solve problems involving linear equations | A2-1 Writing equations |
| 10 ACMNA236 | Solve linear inequalities and graph their solutions on a number line | A4-4 Inequalities |
| 10 ACMNA237 | Solve linear simultaneous equations, algebraically and graphically | A4-3 Simultaneous equations – linear |
| 10 ACMNA238 | Solve problems involving parallel and perpendicular lines | A3-8 Linear functions |
| 10 ACMNA239 | Connection algebraic and graphical representations of relations | A1-1 Relations 1<br>A3-5 Solving by graphing<br>A4 . . . various |
| 10 ACMNA240 | Solve linear equations involving simple algebraic fractions | A3-3 Squares and fractions |
| 10 ACMNA241 | Solve simple quadratic equations | A4-2 Quadratic functions |

| Year 10 Measurement and Geometry | | |
|---|---|---|
| 10 ACMMG242 | Surface area and volume of prisms, cylinders and composite solids | M2-3 Length, area and volume 2<br>M3-4 Length, area and volume 3<br>M4-1 Length, area and volume 4 |
| 10 ACMMG243 | Proofs involving congruent triangles and angle properties | G2-2 Geometric figures<br>G2-6 Congruence<br>G4-1 Geometric Proofs |
| 10 ACMMG244 | Proofs and numerical exercises with plane shapes, congruence and similarity | G2-2 Geometric figures<br>G2-6 Congruence<br>G4-1 Geometric Proofs |
| 10 ACMMG245 | Right-angled triangle problems including direction, elevation and depression | M3-2 Trigonometry |

| Year 10 Statistics and Probability | |
|---|---|
| 10 ACMSP246 2- and 3-step experiments, with and without replacements, independence | P2-1 Compound events<br>P4-1 Complex probabilities |
| 10 ACMSP247 If ....then, given, of, knowing that in conditional statements | P4-1 Complex probabilities |
| 10 ACMSP248 Quartiles and interquartile range | S4-1 Quantiles and spread |
| 10 ACMSP249 Construct and interpret box plots and use them to compare data sets | S4-1 Quantiles and spread |
| 10 ACMSP250 Compare shapes of box plots to corresponding histograms and dot plots | S4-1 Quantiles and spread |
| 10 ACMSP251 Scatter plots of relationships between two numerical variables | S4-2 Linear regression |
| 10 ACMSP252 Bivariate numerical data where the independent variable is time | S3-2 Data displays 2<br>S4-2 Linear regression<br>S3-4 Data Types |
| 10 ACMSP253 Evaluate statistical claims using displays, statistics and data | S3-3 Critiquing |

| Year 10A Number and Algebra | |
|---|---|
| 10A ACMNA264 Rational and irrational numbers, operations with surds and fractional indices | N2-1 Number sets<br>N5-1 Simplifying surds |
| 10A ACMNA265 Logarithms and the laws of logarithms | A5-13 Logs |
| 10A ACMNA266 Polynomials, factor and remainder theorems | A5-1 Polynomial functions |
| 10A ACMNA270 Simple exponential equations | A5-4 Exponential functions and logs |
| 10A ACMNA267 Parabolas, hyperbolas, circles, exponential functions and their transformations | A3-9 Reciprocal functions<br>A4-2 Quadratic functions<br>A5-4 Exponential functions and logs<br>A5-9 Algebraic transformations<br>A5-10 Further relations |
| 10A ACMNA268 Sketch and describe polynomials from their equations | A5-1 Polynomial functions<br>C6-14 Graph sketching |
| 10A ACMNA269 Factorise monic and non-monic quadratics and solve quadratic equations | A4-1 Factorising<br>A4-2 Quadratic functions |

| Year 10A Measurement and Geometry | |
|---|---|
| 10A ACMMG271 Surface area and volume of right pyramids, right cones, spheres | M2-3 Length, area and volume 2 |
| 10A ACMMG272 Prove and apply angle and chord properties of circles | G2-2 Geometric figures |
| 10A ACMMG273 Sine, cosine and area rules for triangles | M5-2 Solving triangles |
| 10A ACMMG274 Trigonometric functions and their graphs based on the unit circle | M5-1 Unit circle and trig identities<br>A6-6 Trigonometric functions |
| 10A ACMMG275 Trigonometric equations | A5-11 Trigonometric equations |
| 10A ACMMG276 Pythagoras and trigonometry to solve 3D problems in right-angled triangles | M3-1 Pythagoras<br>M3-2 Trigonometry |

| Year 10A Statistics and Probability | |
|---|---|
| 10A ACMSP277 Investigate reports for information on their planning and implementation | S3-3 Critiquing |
| 10A ACMSP278 Calculate the mean and standard deviation of data to compare data sets | S1-2 Data summary<br>S4-1 Quantiles and spread |
| 10A ACMSP279 Use a straight line to describe relationships in bivariate numerical data sets | S4-2 Linear regression |