Australian Curriculum Mathematics: Foundation to Year 10 Sequence of Achievement (aligned by strand/sub-strand)

Strands	Sub-strands	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Number and Algebra	Number and Place Value	Make connections between number names, numerals and quantities up to 10 Count to and from 20 and order small collections	Describe number sequences resulting from skip counting by 2s, 5s and 10s Count to and from 100 and locate numbers on a number line Partition numbers using place value Carry out simple additions and subtractions using counting strategies	Recognise increasing and decreasing number sequences involving 2s, 3s and 5s Count to and from 1000 Perform simple addition and subtraction calculations using a range of strategies Represent multiplication and division by grouping into sets	Classify numbers as either odd or even Count to and from 10 000 Recall addition and multiplication facts for single-digit numbers Recognise the connection between addition and subtraction and solve problems using efficient strategies for multiplication	Use the properties of odd and even numbers Recall multiplication facts to 10 x 10 and related division facts Choose appropriate strategies for calculations involving multiplication and division	Identify and describe factors and multiples Check the reasonableness of answers using estimation and rounding Solve simple problems involving the four operations using a range of strategies	Recognise the properties of prime, composite, square and triangular numbers Solve problems involving all four operations with whole numbers Describe the use of integers in everyday contexts	Make the connections between whole numbers and index notation and the relationship between perfect squares and square roots Solve problems involving the comparison, addition and subtraction of integers	Describe index laws and apply them to whole numbers Use efficient mental and written strategies to carry out the four operations with	*This sequence ends in Year 8* *(refer to Patterns and Algebra for associated content in 9 and 10)*	
	Fractions and Decimals		Identify representations of one half	Divide collections and shapes into halves, quarters and eighths	Model and represent unit fractions	Recognise common equivalent fractions in familiar contexts and make connections between fraction and decimal notations up to two decimal places Locate familiar fractions on a number line	Order decimals and unit fractions and locate them on number lines Add and subtract fractions with the same denominator	Connect fractions, decimals and percentages as different representations of the same number Locate fractions and integers on a number line Solve problems involving the addition and subtraction of related fractions Calculate a simple fraction of a quantity Add, subtract and multiply decimals and divide decimals where the result is rational Make connections between the powers of 10 and the multiplication and division of decimals	*This sequence ends in Year 6* *(refer to Real Numbers for associated content in 7-10)*			
	Real Numbers	*This sequence starts in Year 7* *(refer to Number and Place Value, and Fractions and Decimals for associated content in F-6)*							Solve problems involving percentages and all four operations with fractions and decimals Express one quantity as a fraction or percentage of another Use fractions, decimals and percentages, and their equivalences	Solve everyday problems involving rates, ratios and percentages Describe rational and irrational numbers	Express numbers in scientific notation	
	Money		Recognise Australian coins according to their value	Associate collections of Australian coins with their value	Represent money values in various ways Correctly count out change from financial transactions	Solve simple purchasing problems	Explain plans for simple budgets	Calculate common percentage discounts on sale items	Compare the cost of items to make financial decisions	Solve problems involving profit and loss	Solve problems involving simple interest	Recognise the connection between simple and compound interest
	Patterns and Algebra	Group objects based on common characteristics	Continue simple patterns involving numbers and objects	Identify the missing element in a number sequence	Continue number patterns involving addition and subtraction	Describe number patterns resulting from multiplication Continue number sequences involving multiples of single digit numbers Identify and explain strategies for finding unknown quantities in number sentences	Continue patterns by adding and subtracting fractions and decimals Identify and explain strategies for finding unknown quantities in number sentences involving the four operations	Describe rules used in sequences involving whole numbers, fractions and decimals Write correct number sentences using brackets and order of operations	Represent numbers using variables Evaluate algebraic expressions after numerical substitution Connect the laws and properties for numbers to algebra	Make connections between expanding and factorising algebraic expressions Simplify a variety of algebraic expressions	Apply the index laws to numbers Expand binomial expressions	Perform the four operations with simple algebraic fractions Expand binomial expressions and factorise monic quadratic expressions Find unknown values after substitution into formulas
	Linear and Non-linear Relationships	*This sequence starts in Year 7* *(refer to Number and Place Value, and Patterns and Algebra for associated content in F-6)*							Assign ordered pairs to given points on the Cartesian plane Solve simple linear equations Interpret simple linear representations and model authentic information	Solve linear equations Graph linear relationships on the Cartesian plane*	Find the distance between two points on the Cartesian plane and the gradient and midpoint of a line segment Sketch linear and non-linear relations	Solve problems involving linear equations and inequalities Solve simple quadratic equations and pairs of simultaneous equations Recognise the relationships between parallel and perpendicular lines Make the connections between algebraic and graphical representations of relations

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Measurement and geometry	Using Units of Measurement	Compare objects using mass, length and capacity Explain order and duration of events Connect events and the days of the week	Order objects based on lengths and capacities using informal units Tell time to the half-hour Explain time durations	Order shapes and objects using informal units Tell time to the quarter-hour Use a calendar to identify the date and the months included in seasons	Use metric units for length, mass and capacity Tell time to the nearest minute	Use scaled instruments to measure temperatures, lengths, shapes and objects Solve problems involving time duration Convert between units of time Compare areas of regular and irregular shapes using informal units	Use appropriate units of measurement for length, area, volume, capacity and mass Convert between 12- and 24-hour time Calculate perimeter and area of rectangles	Connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation Interpret timetables Solve problems involving length and area Make connections between capacity and volume	Use formulas for the area and perimeter of rectangles and calculate volumes of rectangular prisms	Make sense of time duration in real applications Convert between units of measurement for area and volume Perform calculations to determine perimeter and area of parallelograms, rhombuses and kites Name the features of circles and calculate the areas and circumferences of circles Solve problems relating to the volume of prisms	Calculate areas of shapes and the volume and surface area of right prisms and cylinders	Solve surface area and volume problems relating to composite solids
	Shape	Sort shapes and objects	Describe two-dimensional shapes and three-dimensional objects	Draw two-dimensional shapes Recognise the features of three- dimensional objects	Make models of three-dimensional objects		Connect three-dimensional objects with their two-dimensional representations	Construct simple prisms and pyramids	Describe different views of three- dimensional objects	*This sequence ends in Year 7* *(refer to Geometric Reasoning in 7-10)*		
	Location and Transformation	Use appropriate language to describe location	Use the language of direction to move from place to place	Interpret simple maps of familiar locations Explain the effects of one-step transformations	Match positions on maps with given information Identify symmetry in the environment	Interpret information contained in maps Create symmetrical shapes and patterns	Use a grid reference system to locate landmarks Describe transformations of two- dimensional shapes and identify line and rotational symmetry	Describe combinations of transformations Locate an ordered pair in any one of the four quadrants on the Cartesian plane	Represent transformations in the Cartesian plane	*This sequence end in Year 7* *(refer to Patterns and Algebra, and Linear and Non-linear Relationships)*		
	Geometric Reasoning	*This sequence starts in Year 3* *(refer to Shape, and Number and Place Value for associated content in F-3)*			Recognise angles in real situations	Classify angles in relation to a right angle	Measure and construct different angles	Solve problems using the properties of angles	Name the types of angles formed by a transversal crossing parallel line Solve simple numerical problems involving angles formed by a transversal crossing two lines Classify triangles and quadrilaterals	Identify conditions for the congruence of triangles and deduce the properties of quadrilaterals	Explain similarity of triangles Interpret ratio and scale factors in similar figures	Use triangle and angle properties to prove congruence and similarity Apply deductive reasoning to proofs and numerical exercises involving plane shapes
	Pythagoras and Trigonometry	*This sequence starts in Year 9* *(refer to Number and Place Value, Using Units of Measure, Shape, and Geometric Reasoning for associated content in F-8)*									Use Pythagoras' Theorem and trigonometry to find unknown sides of right-angled triangles Recognise the connections between similarity and the trigonometric ratios	Use trigonometry to calculate unknown angles in right-angled triangles
Statistics and probability	Chance	*This sequence starts in Year 1* *(refer to Data Representation and Interpretation for associated content in F)*	Classify outcomes of simple familiar events	Describe outcomes for everyday events	Conduct chance experiments and list possible outcomes	Identify dependent and independent events List the probabilities of everyday events	List outcomes of chance experiments with equally likely outcomes and assign probabilities between 0 and 1	Describe probabilities using simple fractions, decimals and percentages Compare observed and expected frequencies	Determine the sample space for simple experiments with equally likely outcomes and assign probabilities to those outcomes	Determine the probabilities of complementary events and calculate the sum of probabilities Choose appropriate language to describe events and experiments Model authentic situations with two-way tables and Venn diagrams	Calculate relative frequencies to estimate probabilities, list outcomes for two-step experiments and assign probabilities for those outcomes	List outcomes for multi-step chance experiments and assign probabilities for these experiments
	Data Representation and Interpretation	Answer simple questions to collect information Make simple inferences	Collect data by asking questions Draw simple data displays Make simple inferences Describe data displays	Collect data to make simple inferences Organise and represent data to make simple inferences Make sense of collected information	Conduct simple data investigations for categorical variables Interpret and compare data displays	Construct data displays from given or collected data Describe different methods for data collection and representation, and evaluate their effectiveness	Pose questions to gather data Construct data displays appropriate for the data Interpret different data sets	Interpret and compare a variety of data displays including those displays for two categorical variables Interpret secondary data displayed in the media	Identify issues involving the collection of continuous data Calculate mean, mode, median and range for data sets Construct stem-and-leaf plots and dot-plots Describe the relationship between the median and mean in data displays	Explain issues related to the collection of data Explain the effect of outliers on means and medians in that data	Compare techniques for collecting data from primary and secondary sources Construct histograms and back-to-back stem-and-leaf plots Make sense of the position of the mean and median in skewed, symmetric and bi-modal displays to describe and interpret data	Calculate quartiles and interquartile ranges Describe statistical relationships between two continuous variables Compare data sets by referring to the shapes of the various data displays Describe bivariate data where the independent variable is time Evaluate statistical reports