BitMaths

Australian Curriculum v9.0
Alignment Guide
Years 7–8

11/24

BitMaths was specifically written for the Australian Curriculum Version 8.4. This comprehensive junior secondary numeracy program still largely aligns with the requirements of the Australian Curriculum Version 9.0.

Use this Version 9.0 Alignment Guide to see how the strands are covered for Years 7–8. The table includes the content descriptions matched against the relevant BitMaths module for each year level. Where applicable, we have also identified where you may need to use content from a different year level of the BitMaths program, or supplement with your own material.

Year 7 Curriculum Alignment

Strand	Content Description	Module/s
Number	Describe the relationship between perfect square numbers and square roots, and use squares of numbers and square roots of perfect square numbers to solve problems (AC9M7N01)	**NA704** Square and Cube Numbers
	Represent natural numbers as products of powers of prime numbers using exponent notation (AC9M7N02)	**NA703** Prime Factorisation
	Represent natural numbers in expanded notation using place value and powers of 10 (AC9M7N03)	This description is partially covered in: **NA702** Index Notation To cover this description fully, you will need to supplement with your own material to represent natural numbers in expanded notation using place value and powers of 10.
	Find equivalent representations of rational numbers and represent rational numbers on a number line (AC9M7N04)	**NA707** Equivalent Fractions **NA712** Converting Between Fractions, Decimals and Percentages
	Round decimals to a given accuracy appropriate to the context and use appropriate rounding and estimation to check the reasonableness of solutions (AC9M7N05)	**NA711** Rounding Decimals In addition, students will have opportunities throughout BitMaths to use appropriate rounding and estimation to check the reasonableness of solutions.
	Use the 4 operations with positive rational numbers including fractions, decimals and percentages to solve problems using efficient calculation strategies (AC9M7N06)	**NA701** The Four Operations **NA705** Laws of Arithmetic **NA708** Adding and Subtracting Fractions **NA709** Multiplying and Dividing Fractions and Decimals **NA712** Converting Between Fractions, Decimals and Percentages **NA713** Finding Percentages
	Compare, order and solve problems involving addition and subtraction of integers (AC9M7N07)	**NA706** Adding and Subtracting Integers
	Recognise, represent and solve problems involving ratios (AC9M7N08)	**NA714** Ratios
	Use mathematical modelling to solve practical problems, involving rational numbers and percentages, including financial contexts; formulate problems, choosing representations and efficient calculation strategies, using digital tools as appropriate; interpret and communicate solutions in terms of the situation, justifying choices made about the representation (AC9M7N09)	**NA706** Adding and Subtracting Integers **NA713** Finding Percentages **NA715** Discounts There are additional opportunities to cover this description in Year 8 Module NA808 Profit and Loss.
Algebra	Recognise and use variables to represent everyday formulas algebraically and substitute values into formulas to determine an unknown (AC9M7A01)	**NA716** Variables in Algebra **NA717** Substitution in Algebra
	Formulate algebraic expressions using constants, variables, operations and brackets (AC9M7A02)	**NA716** Variables in Algebra **NA718** Applying Laws of Arithmetic to Algebra **NA720** Solving Simple Linear Equations
	Solve one-variable linear equations with natural number solutions; verify the solution by substitution (AC9M7A03)	**NA720** Solving Simple Linear Equations
	Describe relationships between variables represented in graphs of functions from authentic data (AC9M7A04)	**NA721** Travel Graphs

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Year 7 Curriculum Alignment		
Strand	Content Description	Module/s
	Generate tables of values from visually growing patterns or the rule of a function; describe and plot these relationships on the Cartesian plane (AC9M7A05)	This description is partially covered in: NA717 Substitution in Algebra NA719 The Cartesian Plane To cover this description fully, you could use the teaching and learning resources from Year 8 Module NA812 Linear Relationships.
	Manipulate formulas involving several variables using digital tools, and describe the effect of systematic variation in the values of the variables (AC9M7A06)	There are no Year 7 BitMaths modules that directly align to this description. To cover this description, you could use the teaching and learning resources from Year 8 Module NA812 Linear Relationships as well as supplement with your own material.
Measurement	Solve problems involving the area of triangles and parallelograms using established formulas and appropriate units (AC9M7M01)	MG701 Formulas for Areas
	Solve problems involving the volume of right prisms including rectangular and triangular prisms, using established formulas and appropriate units (AC9M7M02)	This description is partially covered in: MG702 Calculating the Volume of Rectangular Prisms To cover this description fully, you could use the teaching and learning resources from Year 8 Module MG806 Volume of Prisms.
	Describe the relationship between π and the features of circles including the circumference, radius and diameter (AC9M7M03)	There are no Year 7 BitMaths modules that directly align to this description. To cover this description fully, you could use the teaching and learning resources from Year 8 Module MG804 Circumference of Circles.
	Identify corresponding, alternate and co-interior relationships between angles formed when parallel lines are crossed by a transversal; use them to solve problems and explain reasons (AC9M7M04)	MG708 Defining and Identifying Angles MG709 Investigating Parallel Lines
	Demonstrate that the interior angle sum of a triangle in the plane is 180° and apply this to determine the interior angle sum of other shapes and the size of unknown angles (AC9M7M05)	MG706 Classifying Triangles and Quadrilaterals MG707 Angle Sums of Triangles and Quadrilaterals
	Use mathematical modelling to solve practical problems involving ratios; formulate problems, interpret and communicate solutions in terms of the situation, justifying choices made about the representation (AC9M7M06)	NA714 Ratios NA710 Expressing Quantities as Fractions
Space	Represent objects in 2 dimensions; discuss and reason about the advantages and disadvantages of different representations (AC9M7SP01)	This description is partially covered in: MG703 Views of Prisms and Solids To cover this description fully, you will need to supplement with your own material.
	Classify triangles, quadrilaterals and other polygons according to their side and angle properties; identify and reason about relationships (AC9M7SP02)	MG706 Classifying Triangles and Quadrilaterals
	Describe transformations of a set of points using coordinates in the Cartesian plane, translations and reflections on an axis, and rotations about a given point (AC9M7SP03)	MG704 Reflections and Translations MG705 Rotations
	Design and create algorithms involving a sequence of steps and decisions that will sort and classify sets of shapes according to their attributes, and describe how the algorithms work (AC9M7SP04)	This description is partially covered in: MG706 Classifying Triangles and Quadrilaterals To cover this description fully, you will need to supplement with your own activities to create algorithms to sort and classify sets of shapes according to their attributes.

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Year 7 Curriculum Alignment		
Strand	Content Description	Module/s
Probability	Identify the sample space for single-stage events; assign probabilities to the outcomes of these events and predict relative frequencies for related events (AC9M7P01)	**SP701** Sample Spaces **SP702** Assigning Probabilities
	Conduct repeated chance experiments and run simulations with a large number of trials using digital tools; compare predictions about outcomes with observed results, explaining the differences (AC9M7P02)	This description is partially covered in: **SP702** Assigning Probabilities To cover this description fully, you will need to supplement with your own activities to conduct chance experiments and make predictions.
Statistics	Acquire data sets for discrete and continuous numerical variables and calculate the range, median, mean and mode; make and justify decisions about which measures of central tendency provide useful insights into the nature of the distribution of data (AC9M7ST01)	**SP705** Calculating Mean, Median, Mode and Range There are additional opportunities to cover this description in Year 8 Module SP807 The Effect of Individual Data Values.
	Create different types of numerical data displays including stem-and-leaf plots using software where appropriate; describe and compare the distribution of data, commenting on the shape, centre and spread including outliers and determining the range, median, mean and mode (AC9M7ST02)	This description is partially covered in: **SP704** Data Displays **SP706** Interpreting Data Displays To cover this description fully, you could use the teaching and learning resources from Year 8 Module SP807 The Effect of Individual Data Values.
	Plan and conduct statistical investigations involving data for discrete and continuous numerical variables; analyse and interpret distributions of data and report findings in terms of shape and summary statistics (AC9M7ST03)	This description is partially covered in: **SP703** Primary and Secondary Data To cover this description fully, supplement with your own statistical investigations in order to collect and analyse data and report findings in terms of shape and summary statistics.

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Year 8 Curriculum Alignment		
Strand	Content Description	Module/s
Number	Recognise irrational numbers in applied contexts, including square roots and π (AC9M8N01)	NA804 Rational and Irrational Numbers
	Establish and apply the exponent laws with positive integer exponents and the zero-exponent, using exponent notation with numbers (AC9M8N02)	NA801 Index Laws
	Recognise terminating and recurring decimals, using digital tools as appropriate (AC9M8N03)	NA803 Terminating and Recurring Decimals
	Use the 4 operations with integers and with rational numbers, choosing and using efficient strategies and digital tools where appropriate (AC9M8N04)	NA802 Operations with Integers and Fractions In addition, students will have opportunities throughout BitMaths to use the 4 operations with integers and rational numbers, choosing and using efficient strategies and digital tools where appropriate.
	Use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts; formulate problems, choosing efficient calculation strategies and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model (AC9M8N05)	NA805 Using Percentages NA806 GST
Algebra	Create, expand, factorise, rearrange and simplify linear expressions, applying the associative, commutative, identity, distributive and inverse properties (AC9M8A01)	NA809 Expanding Algebraic Expressions NA810 Factorising Algebraic Expressions NA811 Simplifying Algebraic Expressions
	Graph linear relations on the Cartesian plane using digital tools where appropriate; solve linear equations and one-variable inequalities using graphical and algebraic techniques; verify solutions by substitution (AC9M8A02)	This description is partially covered in: NA812 Linear Relationships NA813 Solving Linear Equations To cover this description fully, you will need to supplement with your own material to solve one-variable inequalities using graphical and algebraic techniques.
	Use mathematical modelling to solve applied problems involving linear relations, including financial contexts; formulate problems with linear functions, choosing a representation; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model (AC9M8A03)	NA812 Linear Relationships NA813 Solving Linear Equations
	Experiment with linear functions and relations using digital tools, making and testing conjectures and generalising emerging patterns (AC9M8A04)	This description is partially covered in: NA812 Linear Relationships To cover this descriptor fully, you will need to supplement with your own activities to test conjectures and generalise emerging patterns.
Measurement	Solve problems involving the area and perimeter of irregular and composite shapes using appropriate units (AC9M8M01)	This description is partially covered in: MG802 Perimeter of Quadrilaterals MG803 Area of Quadrilaterals To cover this description fully, you could use the teaching and learning resources from Year 7 Module MG701 Formulas for Areas.
	Solve problems involving the volume and capacity of right prisms using appropriate units (AC9M8M02)	MG801 Units of Area and Volume MG806 Volume of Prisms
	Solve problems involving the circumference and area of a circle using formulas and appropriate units (AC9M8M03)	MG804 Circumference of Circles MG805 Area of Circles
	Solve problems involving duration, including using 12- and 24-hour time across multiple time zones (AC9M8M04)	MG807 Solving Time Problems MG808 International Time
	Recognise and use rates to solve problems involving the comparison of 2 related quantities of different units of measure (AC9M8M05)	NA807 Ratios and Rates

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Year 8 Curriculum Alignment		
Strand	Content Description	Module/s
	Use Pythagoras' theorem to solve problems involving the side lengths of right-angled triangles (AC9M8M06)	There are no Year 8 BitMaths modules that directly align to this description. To cover this description, you will need to supplement with your own material.
	Use mathematical modelling to solve practical problems involving ratios and rates, including financial contexts; formulate problems; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model (AC9M8M07)	NA807 Ratios and Rates
Space	Identify the conditions for congruence and similarity of triangles and explain the conditions for other sets of common shapes to be congruent or similar, including those formed by transformations (AC9M8SP01)	This description is partially covered in: MG809 Congruence MG810 Congruence of Triangles MG811 Congruence of Quadrilaterals To cover this description fully, you will need to supplement with your own material to identify the conditions for similarity of triangles and explain the conditions for other sets of common shapes to be similar, including those formed by transformations.
	Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related problems explaining reasoning (AC9M8SP02)	MG811 Congruence of Quadrilaterals
	Describe the position and location of objects in 3 dimensions in different ways, including using a three-dimensional coordinate system with the use of dynamic geometric software and other digital tools (AC9M8SP03)	There are no Year 8 BitMaths modules that directly align to this description. To cover this description, you could use the teaching and learning resources from Year 7 Module MG703 Views of Prisms and Solids as well as supplement with your own material.
	Design, create and test algorithms involving a sequence of steps and decisions that identify congruency or similarity of shapes, and describe how the algorithm works (AC9M8SP04)	This description is partially covered in: MG809 Congruence MG810 Congruence of Triangles MG811 Congruence of Quadrilaterals To cover this description fully, you will need to supplement with your own activities to design, create and test algorithms involving a sequence of steps and decisions that identify congruency or similarity of shapes.
Probability	Recognise that complementary events have a combined probability of one; use this relationship to calculate probabilities in applied contexts (AC9M8P01)	SP801 Complementary Events
	Determine all possible combinations for 2 events, using two-way tables, tree diagrams and Venn diagrams, and use these to determine probabilities of specific outcomes in practical situations (AC9M8P02)	This description is partially covered in: SP802 Probability Events SP803 Venn Diagrams and Two-way Tables To cover this description fully, you will need to supplement with your own material to determine all possible combinations for 2 events using tree diagrams, and use these to determine probabilities of specific outcomes in practical situations.
	Conduct repeated chance experiments and simulations, using digital tools to determine probabilities for compound events, and describe results (AC9M8P03)	This description is partially covered in: SP802 Probability Events To cover this description fully, you will need to supplement with your own activities to conduct repeated chance experiments and simulations, using digital tools to determine probabilities for compound events, and describe results.

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Year 8 Curriculum Alignment		
Strand	Content Description	Module/s
Statistics	Investigate techniques for data collection including census, sampling, experiment and observation, and explain the practicalities and implications of obtaining data through these techniques (AC9M8ST01)	**SP804** Census and Sampling **SP805** Data and Sampling **SP806** Variation in Data
	Analyse and report on the distribution of data from primary and secondary sources using random and non-random sampling techniques to select and study samples (AC9M8ST02)	**SP805** Data and Sampling
	Compare variations in distributions and proportions obtained from random samples of the same size drawn from a population and recognise the effect of sample size on this variation (AC9M8ST03)	**SP806** Variation in Data **SP807** The Effect of Individual Data Values
	Plan and conduct statistical investigations involving samples of a population; use ethical and fair methods to make inferences about the population and report findings, acknowledging uncertainty (AC9M8ST04)	This description is partially covered in: **SP805** Data and Sampling To cover this description fully, you will need to supplement with your own statistical investigations involving samples of a population, using ethical and fair methods to make inferences about the population and reporting findings, acknowledging uncertainty.

Note: Module NA808 Profit and Loss revises content from the Year 7 Australian Curriculum v9.0.

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