



# BitMaths

The Victorian Curriculum Match  
**Levels 7–8**

BitMaths covers all strands and sub-strands for Levels 7–8. Refer to the tables to match content descriptions to the relevant BitMaths modules.

**Note:** **NA701** The Four Operations covers the Level 6 content description ‘Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers (VCMNA209)’.

<b>Level 7 Curriculum Match</b>			
<b>Strand</b>	<b>Sub-strand</b>	<b>Content Description</b>	<b>Module/s</b>
<b>Number and Algebra</b>	<b>Number and place value</b>	Investigate index notation and represent whole numbers as products of powers of prime numbers (VCMNA238)	<b>NA702</b> Index Notation <b>NA703</b> Prime Factorisation
		Investigate and use square roots of perfect square numbers (VCMNA239)	<b>NA704</b> Square and Cube Numbers
		Apply the associative, commutative and distributive laws to aid mental and written computation and make estimates for these computations (VCMNA240)	<b>NA705</b> Laws of Arithmetic
		Compare, order, add and subtract integers (VCMNA241)	<b>NA706</b> Adding and Subtracting Integers
	<b>Real numbers</b>	Compare fractions using equivalence. Locate and represent positive and negative fractions and mixed numbers on a number line (VCMNA242)	<b>NA707</b> Equivalent Fractions
		Solve problems involving addition and subtraction of fractions, including those with unrelated denominators (VCMNA243)	<b>NA708</b> Adding and Subtracting Fractions
		Multiply and divide fractions and decimals using efficient written strategies and digital technologies (VCMNA244)	<b>NA709</b> Multiplying and Dividing Fractions and Decimals
		Express one quantity as a fraction of another, with and without the use of digital technologies (VCMNA245)	<b>NA710</b> Expressing Quantities as Fractions
		Round decimals to a specified number of decimal places (VCMNA246)	<b>NA711</b> Rounding Decimals
		Connect fractions, decimals and percentages and carry out simple conversions (VCMNA247)	<b>NA712</b> Converting Between Fractions, Decimals and Percentages
		Find percentages of quantities and express one quantity as a percentage of another, with and without digital technologies (VCMNA248)	<b>NA713</b> Finding Percentages
		Recognise and solve problems involving simple ratios (VCMNA249)	<b>NA714</b> Ratios
	<b>Money and financial mathematics</b>	Investigate and calculate ‘best buys’, with and without digital technologies (VCMNA250)	<b>NA715</b> Discounts
	<b>Patterns and algebra</b>	Introduce the concept of variables as a way of representing numbers using letters (VCMNA251)	<b>NA716</b> Variables in Algebra
		Create algebraic expressions and evaluate them by substituting a given value for each variable (VCMNA252)	<b>NA717</b> Substitution in Algebra
		Extend and apply the laws and properties of arithmetic to algebraic terms and expressions (VCMNA253)	<b>NA718</b> Applying Laws of Arithmetic to Algebra
		Design and implement mathematical algorithms using a simple general purpose programming language (VCMNA254)	<b>NA719</b> Design and Implement Mathematical Algorithms
	<b>Linear and non-linear relationships</b>	Given coordinates, plot points on the Cartesian plane, and find coordinates for a given point (VCMNA255)	<b>NA720</b> The Cartesian Plane
		Solve simple linear equations (VCMNA256)	<b>NA721</b> Solving Simple Linear Equations
		Investigate, interpret and analyse graphs from real life data, including consideration of domain and range (VCMNA257)	<b>NA722</b> Travel Graphs

Level 7 Curriculum Match			
Strand	Sub-strand	Content Description	Module/s
Measurement and Geometry	Using units of measurement	Establish the formulas for areas of rectangles, triangles and parallelograms and use these in problem solving (VCMMG258)	<b>MG701</b> Formulas for Areas
		Calculate volumes of rectangular prisms (VCMMG259)	<b>MG702</b> Calculating the Volume of Rectangular Prisms
	Shape	Draw different views of prisms and solids formed from combinations of prisms (VCMMG260)	<b>MG703</b> Views of Prisms and Solids
	Location and transformation	Describe translations, reflections in an axis, and rotations of multiples of $90^\circ$ on the Cartesian plane using coordinates. Identify line and rotational symmetries (VCMMG261)	<b>MG704</b> Reflections and Translations <b>MG705</b> Rotations
	Geometric reasoning	Classify triangles according to their side and angle properties and describe quadrilaterals (VCMMG262)	<b>MG706</b> Classifying Triangles and Quadrilaterals
		Demonstrate that the angle sum of a triangle is $180^\circ$ and use this to find the angle sum of a quadrilateral (VCMMG263)	<b>MG707</b> Angle Sums of Triangles and Quadrilaterals
		Identify corresponding, alternate and co-interior angles when two straight lines are crossed by a transversal (VCMMG264)	<b>MG708</b> Defining and Identifying Angles
		Investigate conditions for two lines to be parallel and solve simple numerical problems using reasoning (VCMMG265)	<b>MG709</b> Investigating Parallel Lines
	Statistics and Probability	Chance	Construct sample spaces for single-step experiments with equally likely outcomes (VCMSP266)
Assign probabilities to the outcomes of events and determine probabilities for events (VCMSP267)			<b>SP702</b> Assigning Probabilities
Data representation and interpretation		Identify and investigate issues involving numerical data collected from primary and secondary sources (VCMSP268)	<b>SP703</b> Primary and Secondary Data
		Construct and compare a range of data displays including stem-and-leaf plots and dot plots (VCMSP269)	<b>SP704</b> Data Displays
		Calculate mean, median, mode and range for sets of data. Interpret these statistics in the context of data (VCMSP270)	<b>SP705</b> Calculating Mean, Median, Mode and Range
		Describe and interpret data displays using median, mean and range (VCMSP271)	<b>SP706</b> Interpreting Data Displays

Level 8 Curriculum Match			
Strand	Sub-strand	Content Description	Module/s
Number and Algebra	Number and place value	Use index notation with numbers to establish the index laws with positive integral indices and the zero index (VCMNA272)	NA801 Index Laws
		Carry out the four operations with rational numbers and integers, using efficient mental and written strategies and appropriate digital technologies and make estimates for these computations (VCMNA273)	NA802 Operations with Integers and Fractions
	Real numbers	Investigate terminating and recurring decimals (VCMNA274)	NA803 Terminating and Recurring Decimals
		Investigate the concept of irrational numbers, including $\pi$ (VCMNA275)	NA804 Rational and Irrational Numbers
		Solve problems involving the use of percentages, including percentage increases and decreases and percentage error, with and without digital technologies (VCMNA276)	NA805 Using Percentages NA806 GST
		Solve a range of problems involving rates and ratios, including distance-time problems for travel at a constant speed, with and without digital technologies (VCMNA277)	NA807 Ratios and Rates
	Money and financial mathematics	Solve problems involving profit and loss, with and without digital technologies (VCMNA278)	NA808 Profit and Loss
	Patterns and algebra	Extend and apply the distributive law to the expansion of algebraic expressions (VCMNA279)	NA809 Expanding Algebraic Expressions
		Factorise algebraic expressions by identifying numerical factors (VCMNA280)	NA810 Factorising Algebraic Expressions
		Simplify algebraic expressions involving the four operations (VCMNA281)	NA811 Simplifying Algebraic Expressions
		Use algorithms and related testing procedures to identify and correct errors (VCMNA282)	NA812 Using Algorithms to Identify and Correct Errors
	Linear and non-linear relationships	Plot linear relationships on the Cartesian plane with and without the use of digital technologies (VCMNA283)	NA813 Linear Relationships
		Solve linear equations using algebraic and graphical techniques. Verify solutions by substitution (VCMNA284)	NA814 Solving Linear Equations
		Plot graphs of non-linear real life data with and without the use of digital technologies, and interpret and analyse these graphs (VCMNA285)	NA815 Graphs of Non-linear Real Life Data

Level 8 Curriculum Match				
Strand	Sub-strand	Content Description	Module/s	
Measurement and Geometry	Using units of measurement	Choose appropriate units of measurement for area and volume and convert from one unit to another (VCMMG286)	<b>MG801</b> Units of Area and Volume	
		Find perimeters and areas of parallelograms, trapeziums, rhombuses and kites (VCMMG287)	<b>MG802</b> Perimeter of Quadrilaterals <b>MG803</b> Area of Quadrilaterals	
		Investigate the relationship between features of circles such as circumference, area, radius and diameter. Use formulas to solve problems involving determining radius, diameter, circumference and area from each other (VCMMG288)	<b>MG804</b> Circumference of Circles <b>MG805</b> Area of Circles	
		Develop the formulas for volumes of rectangular and triangular prisms and prisms in general. Use formulas to solve problems involving volume (VCMMG289)	<b>MG806</b> Volume of Prisms	
		Solve problems involving duration, including using 12- and 24-hour time within a single time zone (VCMMG290)	<b>MG807</b> Solving Time Problems	
		Additional content	<b>MG808</b> International Time	
	Geometric reasoning	Define congruence of plane shapes using transformations and use transformations of congruent shapes to produce regular patterns in the plane including tessellations with and without the use of digital technology (VCMMG291)	<b>MG809</b> Congruence	
		Develop the conditions for congruence of triangles (VCMMG292)	<b>MG810</b> Congruence of Triangles	
		Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related numerical problems using reasoning (VCMMG293)	<b>MG811</b> Congruence of Quadrilaterals	
	Statistics and Probability	Chance	Identify complementary events and use the sum of probabilities to solve problems (VCMS294)	<b>SP801</b> Complementary Events
			Describe events using language of 'at least', exclusive 'or' (A or B but not both), inclusive 'or' (A or B or both) and 'and' (VCMS295)	<b>SP802</b> Probability Events
Represent events in two-way tables and Venn diagrams and solve related problems (VCMS296)			<b>SP803</b> Venn Diagrams and Two-way Tables	
Data representation and interpretation		Distinguish between a population and a sample and investigate techniques for collecting data, including census, sampling and observation (VCMS297)	<b>SP804</b> Census and Sampling	
		Explore the practicalities and implications of obtaining data through sampling using a variety of investigative processes (VCMS298)	<b>SP805</b> Data and Sampling	
		Explore the variation of means and proportions of random samples drawn from the same population (VCMS299)	<b>SP806</b> Variation in Data	
		Investigate the effect of individual data values including outliers, on the range, mean and median (VCMS300)	<b>SP807</b> The Effect of Individual Data Values	