BitMaths

Draft Western Australian Curriculum (2024) 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 draft Western Australian Curriculum.

Use this Alignment Guide* to see how the strands are covered for Years 7–8 for the new draft curriculum.. 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.

* Please note, this document was matched against the draft version of the Western Australian Curriculum so may not be indicative of their final curriculum requirements. The information in the tables will be updated when the Western Australian Curriculum is finalised.

Year 7 Curriculum Alignment

Strand	Content Description	Module/s
Number and algebra	Explore and explain relationships between percentages, fractional numbers and decimals	NA712 Converting Between Fractions, Decimals and Percentages NA713 Finding Percentages
	Explore and represent equivalent fractions with related and unrelated denominators visually and numerically	NA707 Equivalent Fractions
	Draw and label, or use a given number line to locate, order and compare positive fractional numbers, terminating decimals, percentages and integers using equality and inequality symbols	NA707 Equivalent Fractions
	Explore to extend additive partitioning of positive integers to include the addition and subtraction of negative integers	NA706 Adding and Subtracting Integers
	Explore and interpret visual or numerical representations of multiplication and division of positive fractions	NA709 Multiplying and Dividing Fractions and Decimals
	Use place value understanding to explore and represent multiplication and division of positive decimals	NA709 Multiplying and Dividing Fractions and Decimals
	Explore to extend the use of associative, commutative and distributive laws, additive and multiplicative partitioning, inverse relationships, order of operations, equality and inequality to validate a range of mental and written strategies involving the four operations on whole, decimal and positive fractional numbers and addition and subtraction of integers	NA705 Laws of Arithmetic NA701 The Four Operations NA706 Adding and Subtracting Integers NA708 Adding and Subtracting Fractions NA709 Multiplying and Dividing Fractions and Decimals In addition, students may have further opportunities in other Year 7 and Year 8 BitMaths modules to cover aspects of this description.
	Use place value understanding to explore rounding decimals to a specified number of decimal places	NA711 Rounding Decimals
	Explore and explain the use of ratios and fractions to compare quantities and numbers and make connections between equivalent fractions and equivalent ratios	This description is partially covered in: NA714 Ratios NA710 Expressing Quantities as Fractions To cover this description fully, you will need to supplement with your own material to make connections between equivalent fractions and equivalent ratios.
	Convert between fractions, decimals and percentages using flexible and efficient strategies	NA712 Converting Between Fractions, Decimals and Percentages NA713 Finding Percentages
	Determine percentages of quantities and express one quantity as a percentage of another using flexible and efficient strategies	NA713 Finding Percentages
	Add and subtract integers using flexible and efficient strategies	NA706 Adding and Subtracting Integers
	Add and subtract positive fractions with related and unrelated denominators using flexible and efficient strategies	NA708 Adding and Subtracting Fractions
	Multiply and divide positive fractions using flexible and efficient strategies	NA709 Multiplying and Dividing Fractions and Decimals
	Multiply and divide positive decimals and rounded numbers using flexible and efficient strategies	NA709 Multiplying and Dividing Fractions and Decimals

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Year 7 Curriculum Alignment		
Strand	Content Description	Module/s
	Use appropriate rounding, estimation strategies and context to check reasonableness of solutions	This description is partially covered in: **NA711** Rounding Decimals To cover this description fully, you will need to supplement with your own material to use appropriate estimation strategies to check reasonableness of solutions.
	Identify the features of transactional statements and verify transactions. Explain reasons for checking and keeping financial records	There are no Year 7 BitMaths modules that directly align to this description. To cover this description, you will need to supplement with your own material.
	Extend knowledge of factors to represent numbers as products of prime numbers using index notation as appropriate	**NA703** Prime Factorisation **NA702** Index Notation
	Explore and explain connections between square numbers and square roots, cube numbers and cube roots, as products of repeated factors	**NA704** Square and Cube Numbers
	Use real-world contexts or concrete materials to introduce the concept of a variable to represent a number using a letter, create simple algebraic expressions and evaluate them by substituting a given value for the variable(s)	**NA716** Variables in Algebra **NA717** Substitution in Algebra
	Extend and apply the associative and commutative laws and the properties of numbers, to include variables	**NA718** Applying Laws of Arithmetic to Algebra
	Solve simple linear equations involving up to two operations and verify the solution by substitution	**NA720** Solving Simple Linear Equations
	Explore, describe and represent concrete and real-world, linear and non-linear growing patterns using tables and graphs and determine unknown values in the pattern	This description is covered by Year 8 Module **NA812** Linear Relationships. There is additional content to cover this descriptor in Year 7 Module NA719 The Cartesian Plane.
	In real-world situations involving whole numbers, positive fractions and decimals, percentages of quantities, addition and subtraction of integers, transactional money statements, numerical indices, linear equations with up to two operations and/or or simple number patterns: I. Analyse the situation, decide if an exact or approximate solution is required and determine assumptions and constraints II. Represent the situation mathematically in order to reach a solution III. Interpret and communicate findings in terms of the context and any assumptions or constraints	Students have opportunities to cover this description throughout the BitMaths program in Problem-Solving and Reasoning tasks. You will need to supplement with your own material to cover real-world situations involving transactional money statements.
Measurement and geometry	Establish and apply relationships between lengths of sides, perimeters and areas for squares, rectangles and triangles. Generalise and apply formulas, using appropriate units	This description is partially covered in: **MG701** Formulas for Areas To cover this description fully, you could use the teaching and learning resources from Year 8 Module MG802 Perimeter of Quadrilaterals.
	Explore and explain efficient strategies to determine the perimeter and area of irregular figures or composite figures composed of squares and rectangles	This description is partially covered in: **MG701** Formulas for Areas To cover this description fully, you could use the teaching and learning resources from Year 8 Module MG802 Perimeter of Quadrilaterals.
	Explore and establish connections and conversions between units of area	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 MG801 Units of Area and Volume.

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Year 7 Curriculum Alignment		
Strand	Content Description	Module/s
	Explore, identify, define, name, label and apply the language, notation and conventions of geometry for points, lines, angles and polygons	MG708 Defining and Identifying Angles MG706 Classifying Triangles and Quadrilaterals
	Investigate, identify and describe corresponding, alternate and co-interior angles formed when two parallel lines are crossed by a transversal. Use to find unknown angles, explaining reasoning	MG709 Investigating Parallel Lines MG708 Defining and Identifying Angles
	Investigate to demonstrate that the interior angle sum of a triangle is 180°	MG707 Angle Sums of Triangles and Quadrilaterals
	Investigate to classify and name triangles according to their side and angle properties and use to find unknown angles in triangles	MG706 Classifying Triangles and Quadrilaterals
	Use coordinates on the Cartesian plane to explore, visualise, predict and determine image coordinates after translation or reflection across the axes, or rotation about the origin	NA719 The Cartesian Plane MG704 Reflections and Translations MG705 Rotations
	Move flexibly between building and drawing rectangular and composite rectangular prisms from different views	MG703 Views of Prisms and Solids
	Establish and apply relationships between the number of identical layers of cubic units, the number of cubic units in each identical layer and volume for rectangular prisms and composite rectangular prisms. Generalise and apply formula using appropriate units	This description is partially covered in: MG702 Calculating the Volume of Rectangular Prisms To cover this description fully, you will need to supplement with your own material to establish volume of composite rectangular prisms.
	Explore and establish connections and conversions between units of volume	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 MG801 Units of Area and Volume.
	Explore and interpret representations of time-zones within Australia using 12- and 24-hour time and determine the local time at different locations, considering different times of the year	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 MG808 International Time.
	In real-world situations involving Australian time zones, perimeter and area of squares, rectangles, triangles and rectangular composite figures, volume and views of rectangular prisms and rectangular composite objects, parallel lines and properties of triangles: I. Analyse the situation, decide if an exact or approximate solution is required and determine assumptions and constraints II. Represent the situation mathematically in order to reach a solution III. Interpret and communicate findings in terms of the context and any assumptions or constraints	Students have opportunities to cover this description throughout the BitMaths program in Problem-Solving and Reasoning tasks.

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Year 7 Curriculum Alignment		
Strand	Content Description	Module/s
Statistics and probability	Construct a sample space for a single-stage events, assign probabilities to the outcomes of these events and predict frequencies for different numbers of trials	This description is partially covered in: **SP701** Sample Spaces **SP702** Assigning Probabilities To cover this description fully, you will need to supplement with your own material to predict frequencies for different numbers of trials.
	Explore and determine mean, mode, median and range for sets of data and justify, using the context, which measure best reflects the data set	**SP705** Calculating Mean, Median, Mode and Range
	Represent primary categorical and numerical data in a Venn diagram, calculate related relative frequencies and interpret results	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 SP803 Venn Diagrams and Two-way Tables.
	Represent collected data in a stem-and-leaf plot, describe the shape and spread including outliers, and compare to dot plots or bar/column graphs. Use the data to determine probabilities of specific outcomes	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, as well as supplement with your own material to demonstrate using data to determine probabilities of specific outcomes.
	Critically analyse statistical statements relating to the averages of mean, mode and median in the media and other real-life situations, including the impact of chance variation on the data set on which the measures were based	This description is partially covered in: **SP705** Calculating Mean, Median, Mode and Range To cover this description fully, you could use the teaching and learning resources from Year 8 Module SP807 The Effect of Individual Data Values, as well as supplement with your own material to critically analyse statistical statements relating to the averages of mean, mode and median in the media and other real-life situations, including the impact of chance variation on the data set on which the measures were based.
	Predict likelihood of outcomes in single-stage chance experiments and simulations and produce related data sets over an increasingly large number of trials. Compare and discuss variation and estimated probabilities, and compare estimated probability to original prediction	This description is partially covered in: **SP702** Assigning Probabilities To cover this description fully, you will need to supplement with your own activities to predict likelihood of outcomes in chance experiments and simulations and produce related data sets over an increasingly large number of trials.
	In real-world situations that involve assigning a probability to single-stage events, chance experiments or simulations, statistical measures, stem-and-leaf plots, dot plots, bar/column graphs and/or Venn diagrams: I. Analyse the situation, pose questions as required, determine assumptions and constraints II. Determine appropriate production of a valid and reliable data set, statistical measures, data representations and analyses, including examination of distributions, to effectively investigate the situation III. Interpret, draw inferences and communicate findings in terms of the context, assumptions, constraints, chance variation and knowledge or insights gained	Students have opportunities to cover this description throughout the BitMaths program in Problem-Solving and Reasoning tasks.

Note: NA715 Discounts includes content not specifically aligned to a particular Content Description in the Year 7 Western Australian Curriculum.

Note: NA721 Travel Graphs includes content beyond the Year 7 Western Australian Curriculum.

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Year 8 Curriculum Alignment		
Strand	Content Description	Module/s
Number and algebra	Investigate, define, identify and use correct notation for terminating, recurring and rounded decimals and rational and irrational numbers	**NA803** Terminating and Recurring Decimals **NA804** Rational and Irrational Numbers
	Draw and label, or use a given number line, to locate, order and compare rational and irrational numbers, including numerical indices and percentages, using equality and inequality symbols	This description is partially covered in: **NA804** Rational and Irrational Numbers To cover this description fully, you could use the teaching and learning resources from Year 7 Modules NA712 Converting Between Fractions, Decimals and Percentages and NA702 Index Notation, as well as supplement with your own material to compare rational and irrational numbers, including numerical indices and percentages, using equality and inequality symbols.
	Extend multiplicative thinking with positive integers to include multiplication and division of negative integers	**NA802** Operations with Integers and Fractions
	Explore the use of associative, commutative and distributive laws, additive and multiplicative partitioning, inverse relationships, order of operations, equality and inequality to validate a range of mental and written strategies involving the four operations on rational numbers	Students have opportunities to cover this description throughout the BitMaths program.
	Explore and apply proportional reasoning to find unknown numbers in equivalent ratios and fractions	This description is partially covered in: **NA807** Ratios and Rates To cover this description fully, you could use the teaching and learning resources from Year 7 Module NA710 Expressing Quantities as Fractions.
	Identify, interpret and use familiar rates, including those represented as graphs showing a quantity varying over time	This description is partially covered in: **NA807** Ratios and Rates To cover this description fully, you could use the teaching and learning resources from Year 7 Module NA721 Travel Graphs.
	Calculate percentage increases and decreases, using knowledge of fractions and decimals to increase efficiency	**NA805** Using Percentages **NA806** GST **NA808** Profit and Loss
	Multiply and divide integers using efficient strategies	**NA802** Operations with Integers and Fractions
	Use efficient strategies for calculations involving the four operations with rational numbers, including those written in index form, using rounding, estimation or the context to check reasonableness of results	This description is partially covered in: **NA802** Operations with Integers and Fractions To cover this description fully, you will need to supplement with your own material to use appropriate estimation strategies to check reasonableness of solutions.
	Identify the advantages and disadvantages of various forms of payment for goods and services and determine penalties, such as interest charged and fees, inherent in these payments	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.
	Develop and apply the index laws for numbers in index form with positive integer and zero indices	**NA801** Index Laws
	Extend and apply knowledge of additive and multiplicative partitioning, order of operations and the associative and commutative laws of numbers, to create or simplify algebraic expressions involving the four operations with integers	**NA811** Simplifying Algebraic Expressions There is additional content to cover this description in Year 7 Module NA718 Applying Laws of Arithmetic to Algebra.
	Extend and apply knowledge of the distributive law with numbers to algebraically expand and factorise expressions with a common numerical factor	**NA809** Expanding Algebraic Expressions **NA810** Factorising Algebraic Expressions
	Solve linear equations involving up to three operations, including those with negative coefficients or requiring collection of like terms, and verify the solution by substitution	**NA813** Solving Linear Equations

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Year 8 Curriculum Alignment		
Strand	Content Description	Module/s
	Determine and explain why there are two solutions to a quadratic equation of the form $x2 = k$ if $k > 0$	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 a table of values to move flexibly between the equation of a line represented by $y = mx + c$ and its graph and make connections between the algebraic and graphical solution of the equation. Explore and explain similarities and differences between multiple lines on the same axes	NA812 Linear Relationships NA813 Solving Linear Equations
	In real-world situations involving the rational numbers, ratios, rates, percentage increases and decreases, penalties involved in different forms of goods and services payment, numerical indices, the distributive law, factorisation, linear equations with up to three operations, simple quadratic equations and/or linear relationships: I. Analyse the situation, decide if an exact or approximate solution is required and determine assumptions and constraints II. Represent the situation mathematically in order to reach a solution III. Interpret and communicate findings in terms of the context and any assumptions or constraints	Students have opportunities to cover this description throughout the BitMaths program in Problem-Solving and Reasoning tasks. You will need to supplement with your own material to cover real-world situations concerning penalties involved in different forms of goods and services payment.
Measurement and geometry	Establish and apply relationships between lengths of sides, perpendicular lengths, lengths of diagonals, perimeter and area for parallelograms, trapeziums, rhombuses and kites. Generalise and apply formulas, using appropriate units	MG802 Perimeter of Quadrilaterals MG803 Area of Quadrilaterals
	Identify, describe and explore the relationship between the radius, diameter and circumference of a circle and use to establish and apply formulas to determine perimeter and area, using appropriate units	MG804 Circumference of Circles MG805 Area of Circles
	Investigate in order to establish, define and use the Pythagorean theorem to find the length of a missing side of a right triangle	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.
	Explore, identify, classify and establish properties of quadrilaterals, including the interior angle sum, and use to determine unknown sides and angles, giving reasons	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 Modules MG706 Classifying Triangles and Quadrilaterals and MG707 Angle Sums of Triangles and Quadrilaterals.
	Explore, visualise, predict and determine the translation, reflection, rotation, or combination of these transformations, to match one figure to another. Recognise and identify equal corresponding sides and angles between the figures to establish congruency	MG809 Congruence MG810 Congruence of Triangles MG811 Congruence of Quadrilaterals
	Explore in order to visualise and draw cross-sections of different solids and use to identify prisms	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.
	Establish and apply relationships between the area of a uniform cross-section, the length perpendicular to that uniform cross-section and the volume of right prisms. Generalise, apply formulas and use to connect to capacity if required, using appropriate units	MG806 Volume of Prisms

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Year 8 Curriculum Alignment		
Strand	Content Description	Module/s
	Explore and establish connections and conversions between units of volume and units of capacity	MG801 Units of Area and Volume
	Explore and interpret representations of national and international time zones using 12- and 24-hour time, considering duration of events across multiple time zones	MG808 International Time MG807 Solving Time Problems
	In real-world situations involving international time zones, properties, perimeter and area of quadrilaterals and circles, finding unknown sides using the Pythagorean theorem, transformations or the cross-sections, volume and/or capacity of prisms: I. Analyse the situation, decide if an exact or approximate solution is required and determine assumptions and constraints II. Represent the situation mathematically in order to reach a solution III. Interpret and communicate findings in terms of the context and any assumptions or constraints	Students have opportunities to cover this description throughout the BitMaths program in Problem-Solving and Reasoning tasks. You will need to supplement with your own material to cover real-world situations involving finding unknown sides using the Pythagorean theorem.
Statistics and probability	Identify complementary events, and apply their combined probability of one	SP801 Complementary Events
	Construct a sample space such as a list, tree diagram, table or array to show all possible outcomes for two events. Assign probabilities to outcomes and events including those involving 'and', 'not', 'at least', exclusive 'or' and inclusive 'or'	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 construct a sample space such as a list, tree diagram, table or array to show all possible outcomes for two events.
	Analyse graphs and data including determining the mean, mode(s), median and range from stem-and-leaf plots, dot plots, bar/column graphs and frequency tables. Describe the effect of any outliers on the statistical measures	This description is partially covered in: SP807 The Effect of Individual Data Values To cover this description fully, you could use the teaching and learning resources from Year 7 Module SP706 Interpreting Data Displays as well as supplement with your own material to determine the mean, mode(s), median and range from frequency tables.
	Use secondary data represented in two-way tables and Venn diagrams to describe events, including those that are mutually exclusive. Determine related probabilities and make predictions as appropriate	SP803 Venn Diagrams and Two-way Tables
	Investigate and explain techniques for data collection including census, survey, experiment and observation and explain the practicalities and implications of obtaining data through these techniques	SP804 Census and Sampling SP805 Data and Sampling There is additional content to cover this description in Year 7 Module SP703 Primary and Secondary Data.
	Explore, analyse and compare variation between same size random samples drawn from the same population. Identify and explain how chance variation impacts on data validity, reliability and confidence in drawn conclusion	SP806 Variation in Data
	Critically analyse visual representations and tables in the media and other real-life situations, by identifying misleading features and interpretations, including recognising the impact of the validity and reliability of the data used	This description is partially covered in: SP805 Data and Sampling To cover this description fully, you could use the teaching and learning resources from Year 7 Module SP703 Primary and Secondary Data.

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Year 8 Curriculum Alignment		
Strand	Content Description	Module/s
	Predict likelihood of outcomes in chance experiments and simulations involving complementary or compound events and produce related data sets over an increasingly large number of trials. Analyse, compare and discuss variation and estimated probabilities and compare estimated probability to original prediction	This description is partially covered in: **SP802** Probability Events To cover this description fully, you will need to supplement with your own activities to predict likelihood of outcomes in chance experiments and simulations and produce related data sets over an increasingly large number of trials.
	In real-world situations that involve complementary events, two events, related chance experiments with complementary or compound events, data collection methods, same sized random sampling and/or analysis of graphs and data: I. Analyse the situation, pose questions as required, determine assumptions and constraints II. Determine appropriate production of a valid and reliable data set, statistical measures, data representations and analyses, including examination of distributions, to effectively investigate the situation III. Interpret, draw inferences and communicate findings in terms of the context, assumptions, constraints, chance variation and knowledge or insights gained	Students have opportunities to cover this description throughout the BitMaths program in Problem-Solving and Reasoning tasks.

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