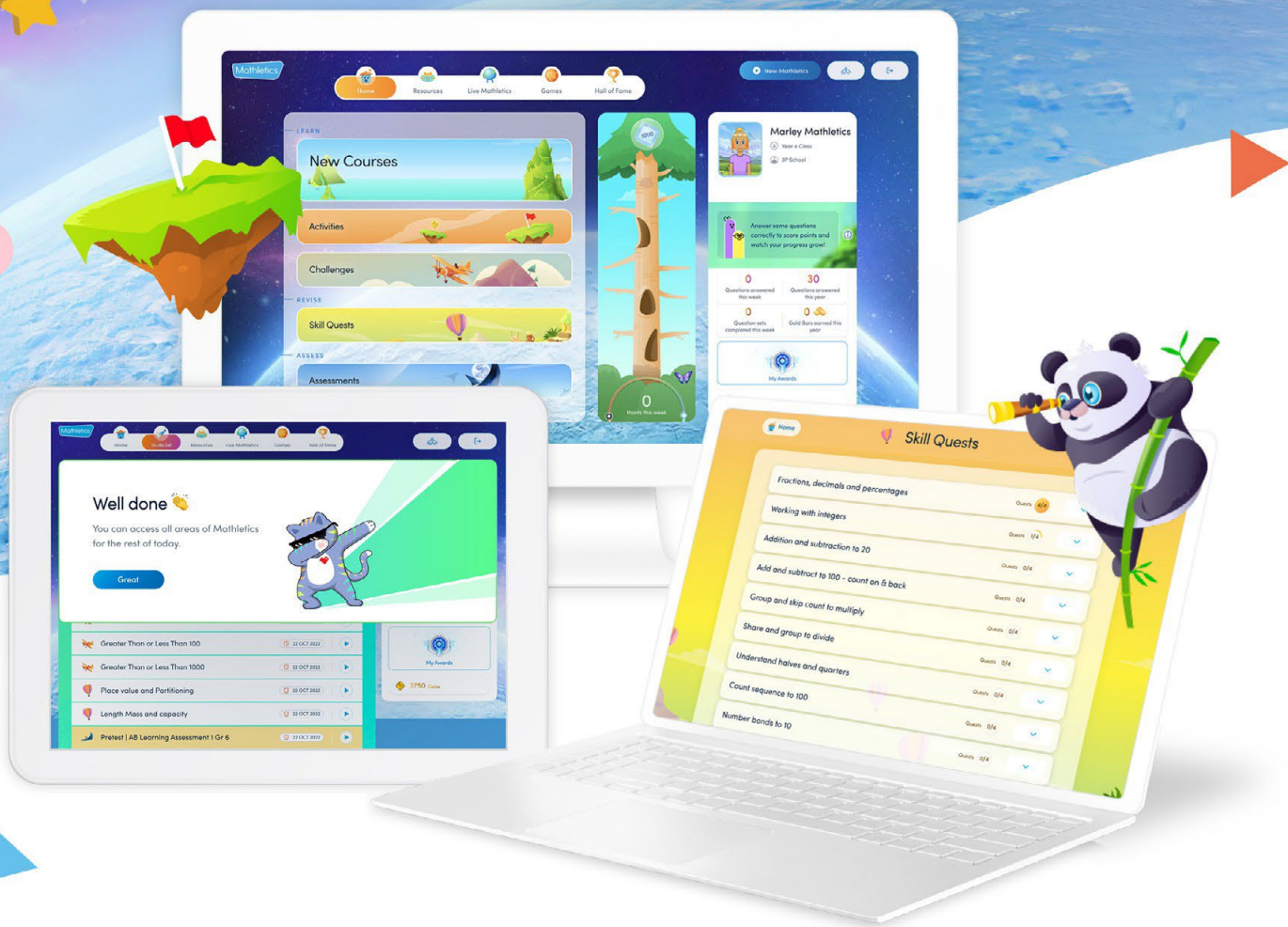
Mathletics

Tasmania - Australian Curriculum v9

Activities (Courses) and Skill Quests



Years 7 – 8

January, 2025

Mathletics

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Tasmania - Australian Curriculum (v9)

Activities (Courses) & Skill Quests

January, 2025

Year 7

1 Number

AC9M7N01 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	
Course Topics	**Activities**
N- Number properties	Square Roots
	Estimating Square Roots
Topics	**Skill Quests**
Square numbers	Working with square numbers
Square roots	Working with square roots
	Estimating square root of non-square numbers

AC9M7N02 represent natural numbers as products of powers of prime numbers using exponent notation	
Course Topics	**Activities**
N- Number properties	Product of Prime Factors
	Prime Factorisation with Indices
Topics	**Skill Quests**
Exponents	Introducing exponents
Prime factorisation	Prime factorisation

AC9M7N03 represent natural numbers in expanded notation using place value and powers of 10	
Course Topics	**Activities**
N- Number properties	Expanded Notation
Topics	**Skill Quests**
Investigate with powers of 10	Investigating with powers of 10

AC9M7N04 find equivalent representations of rational numbers and represent rational numbers on a number line	
Course Topics	**Activities**
N - Equivalent representations	Equivalent Fraction Wall 2
	Equivalent Fractions on a Number Line 2
	Simplifying Fractions
	Converting Mixed and Improper
	Fractions to Decimals 2
	Decimals to Fractions 2
	Fraction to Terminating Decimal
	Percentages to Fractions (with and without simplification)
	Percentages greater than 100% to Mixed Numerals
	Fractions to Percentages (Non-Calculator)

	Mixed Numerals to Percentages greater than 100%
	Percentages to Decimals
	Decimals to Percentages
	Match Decimals and Percentages
	Mixed decimal, percentage and fraction conversions
Topics	**Skill Quests**
Express & compare fractions	Fractions: comparing & ordering
Improper & mixed numbers	Fractions: improper & proper fractions
Fraction, decimal & percent conversions	Converting fractions to percentages
	Expressing quantities as a percentage
	Converting percentages to fractions
	Converting fractions to decimals
	Converting decimals to fractions
	Converting decimals to percentages
	Converting percentages to decimals
	Ordering fractions, decimals & percentages

AC9M7N05 round decimals to a given accuracy appropriate to the context and use appropriate rounding and estimation to check the reasonableness of solutions	
Course Topics	**Activities**
N - Rounding decimals	Rounding Decimals
	Rounding Decimals 2
	Rounding Numbers for Division
	Estimate Differences
	Estimate Decimal Differences 1
	Estimate Decimal Sums 1
	Estimate Decimal Differences 2
	Estimate Decimal Sums 2
	Estimate Decimal Operations
Topics	**Skill Quests**
Round decimals	Rounding decimals

AC9M7N06 use the 4 operations with positive rational numbers including fractions, decimals and percentages to solve problems using efficient calculation strategies	
Course Topics	**Activities**
N - Operations of FDP	Add: No Common Denominator
	Add Unlike Mixed Numbers
	Subtract: No Common Denominator
	Subtract Unlike Mixed Numbers
	Add Mixed Numbers: Same Sign
	Add Mixed Numbers: Signs Can Differ
	Subtract Mixed Numbers: Renaming
	Multiply Two Fractions 2
	Divide Fractions by Fractions 2
	Fraction of an Amount
	More Fraction Problems
	Adding and Subtracting Decimals

	Divide Decimal by Whole Number
	Decimal by Decimal
	Percentage of a Quantity
	Percentage Change: Increase and Decrease
	Percentages of a quantity (>100%)
Topics	**Skill Quests**
Add & subtract fractions	Fractions: adding fractions
	Fractions: subtracting with like denominators
	Fractions: subtracting with unlike denominators
	Fractions: adding & subtracting fractions
Multiply fractions	Fractions: multiplying by a whole number
	Fractions: multiplying fractions
Divide fractions	Dividing fractions & positive integers
	Dividing fractions by fractions
Add & subtract decimals	Adding & subtracting decimals
Multiply decimals	Multiplying decimals
Divide decimals	Dividing decimals
Percentage calculations	Calculations with percentages
Word problems	Solving word problems

AC9M7N07 compare, order and solve problems involving addition and subtraction of integers	
Course Topics	**Activities**
N – Integers	Ordering Integers (Number Line)
	Comparing Integers (<, =, >)
	Integers: Add and Subtract
	Subtract Integers
	Integers: Subtraction
	More with Integers
Topics	**Skill Quests**
Integers	Comparing & ordering integers
	Adding & subtracting integers
	Solving problems involving integers

AC9M7N08 recognise, represent and solve problems involving ratios	
Course Topics	**Activities**
N - Ratio problems	Simplify Ratios: 2 Whole Numbers
	Simplify Ratios: 3 Whole Numbers
	Simplify Ratios: Decimals
	Simplify Ratios: Fractions
	Simplify Ratios: Mixed Numbers
	Dividing a Quantity in a Ratio
Topics	**Skill Quests**
Ratios	Using simple ratios
	Simplifying ratios
	Solving simple problems involving ratios

AC9M7N09 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	
Course Topics	**Activities**
N - Number applications	Percentage of an amount using fractions (<100%)
	Quantities to Percentages (no units)
	Quantities to Percentages (with units)
	Percentage Composition
	Percentage Word Problems
Topics	**Skill Quests**
Percentages in financial context	Profit & loss
	Calculating best buys
Solve problems with rational numbers	Solving problems with rational numbers

2 Algebra

AC9M7A01 recognise and use variables to represent everyday formulas algebraically and substitute values into formulas to determine an unknown	
Course Topics	**Activities**
A – Substitution	Simple Substitution
	Simple Substitution 2
	Simple Substitution 3
	Complex Substitution
	Substitution in Formulae
	More Substitution in Formulae
	Real Formulae
Topics	**Skill Quests**
Algebraic expressions & equations	Forming expressions & equations
Substitution	Substituting into algebraic expressions & equations

AC9M7A02 formulate algebraic expressions using constants, variables, operations and brackets	
Course Topics	**Activities**
A - Algebraic expressions	Writing Algebraic Expressions
	Recognising Like Terms
	Like Terms: Add and Subtract
	Algebraic Multiplication
	Dividing Expressions
	Algebraic Division
	Surd Form to Index Form
Topics	**Skill Quests**
Language of algebra	Understanding the language of algebra

Simplify algebraic expressions	Simplifying: addition & subtraction
	Simplifying: multiplication & division
	Simplifying: commutative law

AC9M7A03 solve one-variable linear equations with natural number solutions; verify the solution by substitution	
Course Topics	**Activities**
A - Solving equations	Solve Equations: Add, Subtract 1
	Solve Equations: Add, Subtract 2
	Solve Equations: Multiply, Divide 1
	Solve Equations: Multiply, Divide 2
	Solving Simple Equations
	Solve One-Step Equations
	Equations with Fractions
	Write an Equation: Word Problems
Topics	**Skill Quests**
Solve equations	Introducing equations
	Solving 1-step equations: addition/subtraction
	Solving 1-step equations: multiplication
	Solving 1-step equations: division
	Solving 1-step equations: mixed operations
	Solving 2-step equations: variable in numerator
	Solving 2-step equations: variable in denominator

AC9M7A04 describe relationships between variables represented in graphs of functions from authentic data	
Course Topics	**Activities**
A – Rates	Rates Word Problems
	Rates Calculations
	Average Speed
	Time Taken
	Distance Travelled
	Travel Graphs
Topics	**Skill Quests**
Read graphs in real-life contexts	Understanding distance/time graphs
	Using distance/time graphs
	Solving problems involving other rates

AC9M7A05 generate tables of values from visually growing patterns or the rule of a function; describe and plot these relationships on the Cartesian plane	
Course Topics	**Activities**
A - Patterns and rules	Table of Values
	Pattern Rules and Tables
	Find the Pattern Rule
	Graphing from a Table of Values
	Reading Values from a Line

	Determining a Rule for a Line
Topics	**Skill Quests**
Algebraic patterns	Algebraic patterns
Linear relationships	Table of values
	Graphing linear equations

AC9M7A06 manipulate formulas involving several variables using digital tools, and describe the effect of systematic variation in the values of the variables	
Course Topics	**Activities**
Rearrange a formula	Rearranging a formula
Topics	**Skill Quests**
Teacher directed	

3 Measurement

AC9M7M01 solve problems involving the area of triangles and parallelograms using established formulas and appropriate units	
Course Topics	**Activities**
M - Perimeter, area & volume	Area: Triangles
	Area: Right Angled Triangles
	Area: Parallelograms (Metric)
Topics	**Skill Quests**
Area: triangles & parallelograms	Calculating area: triangles
	Calculating area: parallelograms

AC9M7M02 solve problems involving the volume of right prisms including rectangular and triangular prisms, using established formulas and appropriate units	
Course Topics	**Activities**
M - Perimeter, area & volume	Volume: Rectangular Prisms 1
	Volume: Rectangular Prisms 2
Topics	**Skill Quests**
Develop a formula for calculating volume	Developing a formula for calculating volume
Calculate volume	Calculating volume: rectangular prisms
	Calculating volume: triangular prisms
	Calculating dimensions from given volume

AC9M7M03 describe the relationship between π and the features of circles including the circumference, radius and diameter	
Course Topics	**Activities**
M - Perimeter, area & volume	Labelling Circles
	Circle Terms
	Calculate Circumference of Circles
Topics	**Skill Quests**
Work with circles	Identifying parts of circles
	Calculating circumference

AC9M7M04 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	
Course Topics	**Activities**
M – Geometry	Introduction to Angles on Parallel Lines 1
	Parallel Lines
	Angles and Parallel Lines
	Are the Lines Parallel?
Topics	**Skill Quests**
Angle relationships parallel lines	Parallel & perpendicular line conventions
	Angle relationships on parallel lines
Parallel lines & geometric reasoning	Proving parallel lines

AC9M7M05 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	
Course Topics	**Activities**
M – Geometry	Angle Sum of a Triangle
	Quadrilaterals: Angle Sum with Equations
	Interior Angles
Topics	**Skill Quests**
Interior angles of a triangle	Calculating sum of interior angles: triangle
	Calculating sum of interior angles: polygons

AC9M7M06 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	
Course Topics	**Activities**
M - Geometry	Ratio of Intercepts
Topics	**Skill Quests**
Solve ratio problems in context	Solving ratio problems in context

4 Space

AC9M7SP01 represent objects in 2 dimensions; discuss and reason about the advantages and disadvantages of different representations	
Course Topics	**Activities**
SP - Shape and space	Nets
Topics	**Skill Quests**
Explore different views of solids	Exploring different views of prisms and solids
	Prisms & cross-sections
	Prisms & nets

AC9M7SP02 classify triangles, quadrilaterals and other polygons according to their side and angle properties; identify and reason about relationships	
Course Topics	**Activities**
SP - Shape and space	Triangle Tasters
	Properties of Quadrilaterals
	Plane Figure Theorems
Topics	**Skill Quests**
Triangles & quadrilaterals	Labelling & naming conventions
	Properties of triangles
	Convex & non-convex quadrilaterals
	Properties of quadrilaterals
	Reasoning: triangles & quadrilaterals

AC9M7SP03 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	
Course Topics	**Activities**
SP - Shape and space	Rotational Symmetry
	Horizontal and Vertical Change
	Transformations: Coordinate Plane
	Rotations: Coordinate Plane
Topics	**Skill Quests**
Transformations	Describing transformations
	Plotting transformations
Reflection	Performing reflections
Rotation	Performing rotations
Symmetry	Line & rotational symmetry
Use transformations to identify measures	Using transformations to identify measures

AC9M7SP04 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	
Course Topics	**Activities**
Teacher directed	

Topics	Skill Quests
Create algorithms to classify shapes	Creating algorithms to classify shapes

5 Statistics

AC9M7ST01 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	
Course Topics	**Activities**
ST - Statistical data	Mode from Frequency Table
	Mode from Stem and Leaf Plot
	Median from Frequency Table
	Median from Stem and Leaf Plot
	Mean from Frequency Table
	Stem and Leaf Plots with Range
	Which Measure of Central Tendency?
Topics	**Skill Quests**
Use the language of statistics	Using the language of statistics
Measures of centre	Calculating the mean, median, mode
Measure of spread	Calculating range
Analyse data using statistics	Analysing data using statistics

AC9M7ST02 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	
Course Topics	**Activities**
ST - Statistical displays	Reading from a Column Graph
	Line Graphs: Interpretation
	Sector Graphs
	Creating a Sector Graph
	Divided Bar Graphs
	Dot Plots
	Stem and Leaf Plots: Concept
	Bar Graphs 1
Topics	**Skill Quests**
Represent numerical data	Tallies & frequency tables
	Frequency histograms & polygons
	Frequency histograms & polygons: grouped data
	Dot plots
	Ordered stem-and-leaf plots
	Divided bar graphs
	Pie charts
	Line graphs

	Interpreting a variety of different graphs
Shape, centre & spread	Describing shape, centre & spread
Clusters, gaps & outliers in data	Clusters, gaps & outliers in data

AC9M7ST03 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	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Conduct an investigation	Conducting an investigation
Write conclusions	Writing conclusions

6 Probability

AC9M7P01 identify the sample space for single-stage events; assign probabilities to the outcomes of these events and predict relative frequencies for related events	
Course Topics	**Activities**
P – Probability	What are the Chances?
	Find the Probability
	Simple Probability
	Relative Frequency
Topics	**Skill Quests**
Identify sample space	Identifying sample space
Language of probability	Using the language of probability
Assign probabilities	Assigning probabilities
Equally likely events	Determining equally likely events
Calculate probabilities	Calculating probabilities
	Chance experiments

AC9M7P02 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	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Experimental & theoretical probabilities	Using experimental & theoretical probabilities

Year 8

1 Number

AC9M8N01 recognise irrational numbers in applied contexts, including square roots and π	
Course Topics	**Activities**
N - Number properties	Irrational Numbers
Topics	**Skill Quests**
Irrational numbers	Understanding irrational numbers
	Approximating irrational numbers

AC9M8N02 establish and apply the exponent laws with positive integer exponents and the zero-exponent, using exponent notation with numbers	
Course Topics	**Activities**
N - Number properties	Index Form to Numbers
	Index Notation
	Properties of Exponents
	Simplifying with Index Laws 1
	The Zero Index
Topics	**Skill Quests**
Exponent laws	Investigating index laws
	Using index laws

AC9M8N03 recognise terminating and recurring decimals, using digital tools as appropriate	
Course Topics	**Activities**
N - Number properties	Recurring Decimals
	Recurring Decimals and Series
Topics	**Skill Quests**
Terminating & recurring decimals	Investigating terminating & recurring decimals

AC9M8N04 use the 4 operations with integers and with rational numbers, choosing and using efficient strategies and digital tools where appropriate	
Course Topics	**Activities**
N – Integers	Adding Integers: Positive, Negative or Zero
	Integers: Multiply and Divide
	Integers: Order of Operations (BIDMAS)
	Multiplying and Dividing Integers
	Powers of Integers
Topics	**Skill Quests**
Integers	Adding & subtracting integers
	Multiplying & dividing integers

	4 operations of integers

AC9M8N05 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	
Course Topics	**Activities**
N - Number applications & operations	Percentage of an amount using decimals (calculator)
	Percent Increase and Decrease
	Solve Percent Equations
	GST
	Profit and Loss
Topics	**Skill Quests**
Percentages in financial context	Increasing & decreasing amounts
	Solving problems involving percentages
	Calculations with discounts
	Simple interest
	Hire purchase agreements
	GST: Goods and Services Tax

2 Algebra

AC9M8A01 create, expand, factorise, rearrange and simplify linear expressions, applying the associative, commutative, identity, distributive and inverse properties	
Course Topics	**Activities**
A - Algebraic expressions	Expanding Brackets
	Expand then Simplify
	Expanding with Negatives
	Factorising Expressions
	Factorising with Negatives
	Highest Common Algebraic Factor
	Factorising
	Simplifying Expressions
Topics	**Skill Quests**
Simplify algebraic expressions	Simplifying algebraic expressions
Expand algebraic expressions	Expanding basic algebraic expressions
Factorise algebraic expressions	Factorising algebraic expressions

AC9M8A02 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	
Course Topics	**Activities**
A - Linear equations & inequalities	Which Straight Line?
	Intercepts
	Equation of a Line 1
	General Form of a Line
	Horizontal and Vertical Lines
	Equation from Point and Gradient
Topics	**Skill Quests**
Solve linear equations	Solving equations with variables on both sides
	Solving equations involving brackets
	Solving linear equations graphically
Graph linear equations	Vertical & horizontal lines
	Finding & using x- & y-intercepts
	Graphing using the gradient-intercept method
Linear inequalities	Understanding inequalities
	Solving linear inequalities: 1 step
	Solving linear inequalities: 2 step
	Graphing inequalities

AC9M8A03 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	
Course Topics	**Activities**
A - Linear equations & inequalities	Direct Linear Variation
	Modelling Linear Relationships
	Linear Modelling
	Breakeven Point
Topics	**Skill Quests**
Linear equations in context	Modelling linear equations in context

AC9M8A04 experiment with linear functions and relations using digital tools, making and testing conjectures and generalising emerging patterns	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Compare linear graphs	Comparing linear graphs

3 Measurement

AC9M8M01 solve problems involving the area and perimeter of irregular and composite shapes using appropriate units	
Course Topics	**Activities**
M - Perimeter, area & volume	Perimeter: Composite Shapes
	Area: Composite Shapes
Topics	**Skill Quests**
Perimeter: composite shapes	Calculating perimeter: composite shapes
Area: composite shapes	Calculating area: composite shapes
	Calculating area: dissections
Convert units of area	Converting units of area

AC9M8M02 solve problems involving the volume and capacity of right prisms using appropriate units	
Course Topics	**Activities**
M - Perimeter, area & volume	Capacity Word Problems
	Volume: Triangular Prisms
	Volume: Prisms
Topics	**Skill Quests**
Volume of prisms	Developing volume formulas
	Calculating dimensions from volume
Solve volume problems	Solving problems involving prisms
Units of volume/capacity	Choosing & converting units of volume

AC9M8M03 solve problems involving the circumference and area of a circle using formulas and appropriate units	
Course Topics	**Activities**
M - Perimeter, area & volume	Arc Length
	Perimeter and Circles
	Area: Circles 1
	Area: Sectors (Degrees)
	Area: Annulus
Topics	**Skill Quests**
Solve problems with circumference	Calculating perimeter: parts of circles
	Calculating arc lengths & perimeters of sectors
Area of circles	Solving area problems involving circles
	Solving area problems involving parts of circles
	Calculating area: composite shapes with circles

AC9M8M04 solve problems involving duration, including using 12- and 24-hour time across multiple time zones	
Course Topics	**Activities**
M – Time	Elapsed Time

	What Time Will it Be?
	Using Timetables
	Australian Time Zones
	Time Zones
	Time Differences
Topics	**Skill Quests**
Solve problems involving time	Time elapsed
	Rounding & converting time
	Solving problems with time zones

AC9M8M05 recognise and use rates to solve problems involving the comparison of 2 related quantities of different units of measure	
Course Topics	**Activities**
N - Number applications & operations	Rates
Topics	**Skill Quests**
Use rates to solve problems	Understanding rates
	Comparing rates
	Rates in context

AC9M8M06 use Pythagoras' theorem to solve problems involving the side lengths of right-angled triangles	
Course Topics	**Activities**
M – Pythagoras' theorem	Pythagorean Triads
	Hypotenuse of a Right Triangle
	Pythagoras' Theorem
	Pythagorean Theorem
	Pythagoras and Perimeter
	Pythagoras: Find a Short Side (integers only)
	Pythagoras: Find a Short Side (rounding needed)
	Pythagoras: Find a Short Side (decimal values)
Topics	**Skill Quests**
Pythagoras' Theorem	Identifying sides on right-angled triangles
	Calculating the hypotenuse
	Calculating a shorter side
	Calculating a shorter side or hypotenuse
	Solving problems involving Pythagoras' Theorem
	Exploring Pythagorean triads
	Using the converse of Pythagoras' Theorem
	Pythagoras' Theorem: using exact values

AC9M8M07 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	
Course Topics	**Activities**
N - Number applications & operations	Ratio Word Problems

Topics	Skill Quests
Solve problems involving ratios	Solving problems involving ratios
	Ratios involving more than two parts
	Converting ratios

4 Space

AC9M8SP01 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	
Course Topics	**Activities**
SP - Shape and space	Congruent Triangles
	Similar Triangles
	Similarity Proofs
Topics	**Skill Quests**
Define & work with congruence	Defining & working with congruence
Determine congruence in triangles	Determining congruence in triangles
Similar triangles	Introducing similarity
	Similar triangles

AC9M8SP02 establish properties of quadrilaterals using congruent triangles and angle properties, and solve related problems explaining reasoning	
Course Topics	**Activities**
SP - Shape and space	Exterior Angles of a Triangle
Topics	**Skill Quests**
Use properties of congruent triangles	Using properties of congruent triangles
Solve problems involving quadrilaterals	Solving problems involving quadrilaterals

AC9M8SP03 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	
Course Topics	**Activities**
SP - Shape and space	True and Compass Bearings
	Latitude and Longitude
Topics	**Skill Quests**
Teacher directed	

AC9M8SP04 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	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Create algorithms for congruent shapes	Creating algorithms for congruent shapes

5 Statistics

AC9M8ST01 investigate techniques for data collection including census, sampling, experiment and observation, and explain the practicalities and implications of obtaining data through these techniques	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Collect data	Collecting data

AC9M8ST02 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	
Course Topics	**Activities**
ST - Statistical investigations	Methods of Data Sampling
	Data sampling
Topics	**Skill Quests**
Data sampling & populations	Exploring data sampling

AC9M8ST03 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	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

AC9M8ST04 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	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

6 Probability

AC9M8P01 recognise that complementary events have a combined probability of one; use this relationship to calculate probabilities in applied contexts	
Course Topics	**Activities**
P – Probability	Complementary Events
Topics	**Skill Quests**
Complementary events	Complementary events

AC9M8P02 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	
Course Topics	**Activities**
P – Probability	Dice and Coins
	Venn Diagram 1
	Venn Diagrams
	Probability Tables
	Tree Diagrams
Topics	**Skill Quests**
Language of probability	Language of probability to describe events
Tree diagrams	Using tree diagrams
Venn diagrams and two-way tables	Understanding & constructing Venn diagrams
	Using Venn diagrams to solve problems
	Interpreting & constructing two-way tables
	Two-way tables & Venn diagrams

AC9M8P03 conduct repeated chance experiments and simulations, using digital tools to determine probabilities for compound events, and describe results	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Chance events	Repeated chance events

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