

Mathletics

Australian Curriculum V9

Skill Quests



Years 7 – 8
February, 2023

Mathletics

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Australian Curriculum (v9)

February 2023

Year 7 – Skill Quests.....	3
1 Number.....	3
2 Algebra.....	5
3 Measurement.....	6
4 Shape.....	7
5 Statistics	8
6 Probability	9
Year 7 – Activities.....	10
1 Number.....	10
2 Algebra.....	13
3 Measurement.....	14
4 Space	15
5 Statistics	16
6 Probability	17
Year 8 – Skill Quests.....	18
1 Number.....	18
2 Algebra.....	19
3 Measurement.....	20
4 Shape.....	22
5 Statistics	23
6 Probability	24
Year 8 – Activities.....	25
1 Number.....	25
2 Algebra.....	27
3 Measurement.....	28
4 Shape.....	29
5 Statistics	30
6 Probability	31

Year 7 – Skill Quests

1 Number

Outcome	Quests	Content
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	Square numbers	Working with square numbers
	Square roots	Working with square roots
		Estimating square root of non-square numbers
Represent natural numbers as products of powers of prime numbers using exponent notation	Exponents	Introducing exponents
	Prime factorisation	Prime factorisation
Represent natural numbers in expanded notation using place value and powers of 10	Investigate with powers of 10	Investigating with powers of 10
Find equivalent representations of rational numbers and represent rational numbers on a number line	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
Round decimals to a given accuracy appropriate to the context and use appropriate rounding and estimation to check the reasonableness of solutions	Round decimals	Rounding decimals
Use the 4 operations with positive rational numbers including fractions, decimals and percentages to solve problems using efficient calculation strategies	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
Compare, order and solve problems involving addition and subtraction of integers	Integers	Comparing & ordering integers
		Adding & subtracting integers
		Solving problems involving integers
Recognise, represent and solve problems involving ratios	Ratios	Using simple ratios
		Simplifying ratios
		Solving simple problems involving 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	Percentages in financial context	Profit & loss
		Calculating best buys
	Solve problems with rational numbers	Solving problems with rational numbers

2 Algebra

Outcome	Quests	Content
Recognise and use variables to represent everyday formulas algebraically and substitute values into formulas to determine an unknown	Algebraic expressions & equations	Forming expressions & equations
	Substitution	Substituting into algebraic expressions & equations
Formulate algebraic expressions using constants, variables, operations and brackets	Language of algebra	Understanding the language of algebra
	Simplify algebraic expressions	Simplifying: addition & subtraction
		Simplifying: multiplication & division
		Simplifying: commutative law
Solve one-variable linear equations with natural number solutions; verify the solution by substitution	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
Describe relationships between variables represented in graphs of functions from authentic data	Read graphs in real-life contexts	Understanding distance/time graphs
		Using distance/time graphs
Generate tables of values from visually growing patterns or the rule of a function; describe and plot these relationships on the Cartesian plane	Algebraic patterns	Algebraic patterns
	Linear relationships	Table of values
		Graphing linear equations
Manipulate formulas involving several variables using digital tools, and describe the effect of systematic variation in the values of the variables	Rearrange a formula	Rearranging a formula

3 Measurement

Outcome	Quests	Content
Solve problems involving the area of triangles and parallelograms using established formulas and appropriate units	Area: triangles & parallelograms	Calculating area: triangles
		Calculating area: parallelograms
Solve problems involving the volume of right prisms including rectangular and triangular prisms, using established formulas and appropriate units	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
Describe the relationship between π and the features of circles including the circumference, radius and diameter	Work with circles	Identifying parts of circles
		Calculating circumference
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	Angle relationships parallel lines	Parallel & perpendicular line conventions
	Parallel lines & geometric reasoning	Angle relationships on parallel lines
		Proving 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	Interior angles of a triangle	Calculating sum of interior angles: triangle
		Calculating sum of interior angles: polygons

4 Shape

Outcome	Quests	Content
Represent objects in 2 dimensions; discuss and reason about the advantages and disadvantages of different representations	Explore different views of solids	Exploring different views of prisms and solids
		Prisms & cross-sections
		Prisms & cross-sections
Classify triangles, quadrilaterals and other polygons according to their side and angle properties; identify and reason about relationships	Triangles & quadrilaterals	Labelling & naming conventions
		Properties of triangles
		Convex & non-convex quadrilaterals
		Properties of quadrilaterals
		Reasoning: triangles & 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	Transformations	Describing transformations
		Plotting transformations
	Reflection	Performing reflections
	Rotation	Performing rotations
	Symmetry	Line & rotational symmetry
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	Use transformations to identify measures	Using transformations to identify measures
	Create algorithms to classify shapes	Creating algorithms to classify shapes

5 Statistics

Outcome	Quests	Content
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	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
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	Represent numerical data	Tallies & frequency tables
		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
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	Shape, centre & spread	Describing shape, centre & spread
	Clusters, gaps & outliers in data	Clusters, gaps & outliers in data
	Conduct an investigation	Conducting an investigation
	Write conclusions	Writing conclusions

6 Probability

Outcome	Quests	Content
Identify the sample space for single-stage events; assign probabilities to the outcomes of these events and predict relative frequencies for related events	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
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	Experimental & theoretical probabilities	Chance experiments
		Using experimental & theoretical probabilities

Year 7 – Activities

1 Number

Outcome	Topic	Activity Title
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	Number properties	Square Roots
Represent natural numbers as products of powers of prime numbers using exponent notation		Square Roots 1
Represent natural numbers in expanded notation using place value and powers of 10		Estimating Square Roots
		Product of Prime Factors
		Prime Factorisation with Indices
		Prime Factorisation with Indices
Expanded Notation		
Find equivalent representations of rational numbers and represent rational numbers on a number line	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
Round decimals to a given accuracy appropriate to the context and use appropriate rounding and estimation to check the reasonableness of solutions	Rounding decimals	Rounding Decimals
		Rounding Decimals 2
		Rounding Numbers for Division/Compatible Numbers
		Estimate Differences

		Estimate Decimal Differences 1
		Estimate Decimal Sums 1
		Estimate Decimal Differences 2
		Estimate Decimal Sums 2
		Estimate Decimal Operations
Use the 4 operations with positive rational numbers including fractions, decimals and percentages to solve problems using efficient calculation strategies	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 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
		Decimal by Whole Number
		Decimal by Decimal
		Percentage of a Quantity
		Percentage Change: Increase and Decrease
		Percentages of a quantity (>100%)
Compare, order and solve problems involving addition and subtraction of integers	Integers	Ordering Integers (Number Line)
		Comparing Integers
		Integers: Add and Subtract
		Subtract Integers
		Integers: Subtraction
Recognise, represent and solve problems involving ratios	Ratio problems	More with Integers
		Simplify Ratios: 2 Whole Numbers
		Simplify Ratios: 3 Whole Numbers
		Simplify Ratios: Decimals
		Simplify Ratios: Fractions
		Simplify Ratios: Mixed Numbers
Use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts;	Number Applications	Dividing a Quantity in a Ratio
		Percentage of an amount using fractions (<100%)
		Quantities to Percentages (no units)

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		Quantities to Percentages (with units)
		Percentage Composition
		Percentage Word Problems

2 Algebra

Outcome	Topic	Activity Title
Recognise and use variables to represent everyday formulas algebraically and substitute values into formulas to determine an unknown	Substitution	Simple Substitution
		Simple Substitution 2
		Simple Substitution 3
		Complex Substitution
		Substitution in Formulae
		More Substitution in Formulae
		Real Formulae
Formulate algebraic expressions using constants, variables, operations and brackets	Algebraic expressions	Writing Algebraic Expressions
		Recognising Like Terms
		Like Terms: Add and Subtract
		Algebraic Multiplication
		Dividing Expressions
		Algebraic Division
Solve one-variable linear equations with natural number solutions; verify the solution by substitution	Solving equations	Surd Form to Index Form
		Solve Equations: Add, Subtract 1
		Solve Equations: Add, Subtract 2
		Solve Equations: Multiply, Divide 1
		Solve Equations: Multiply, Divide 2
		Solving Simple Equations
		Solve Two-Step Equations
		Equations with Fractions
Describe relationships between variables represented in graphs of functions from authentic data	Rates	Write an Equation: Word Problems
		Rates Word Problems
		Rates Calculations
		Average Speed
		Time Taken
		Distance Travelled
Generate tables of values from visually growing patterns or the rule of a function; describe and plot these relationships on the Cartesian plane	Patterns and rules	Travel Graphs
		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

3 Measurement

Outcome	Topic	Activity Title
Solve problems involving the area of triangles and parallelograms using established formulas and appropriate units	Perimeter, Area & Volume	Area: Triangles
Solve problems involving the volume of right prisms including rectangular and triangular prisms, using established formulas and appropriate units		Area: Right Angled Triangles
Describe the relationship between π and the features of circles including the circumference, radius and diameter		Area: Parallelograms (Metric)
		Volume: Rectangular Prisms 1
		Volume: Rectangular Prisms 2
		Labelling Circles
		Circle Terms
		Calculate 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	Geometry	Introduction to Angles on Parallel Lines 1
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		Parallel Lines
		Angles and Parallel Lines
		Are the Lines Parallel?
		Angle Sum of a Triangle
		Quadrilaterals: Angle Sum with Equations
		Interior angles
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		Ratio of Intercepts

4 Space

Outcome	Topic	Activity Title
Represent objects in 2 dimensions; discuss and reason about the advantages and disadvantages of different representations	Shape and Space	Nets
Classify triangles, quadrilaterals and other polygons according to their side and angle properties; identify and reason about relationships		Triangle Tasters
		Properties of Quadrilaterals
		Plane Figure Theorems
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		Rotational Symmetry
		Horizontal and Vertical Change
		Transformations: Coordinate Plane
		Rotations: Coordinate Plane

5 Statistics

Outcome	Topic	Activity Title
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	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?
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	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

6 Probability

Outcome	Topic	Activity Title
Identify the sample space for single-stage events; assign probabilities to the outcomes of these events and predict relative frequencies for related events	Probability	What are the Chances?
		Find the Probability
		Simple Probability
		Relative Frequency

Year 8 – Skill Quests

1 Number

Outcome	Quests	Content
Recognise irrational numbers in applied contexts, including square roots and π	Irrational numbers	Understanding irrational numbers
		Approximating irrational numbers
Establish and apply the exponent laws with positive integer exponents and the zero-exponent, using exponent notation with numbers	Exponent laws	Investigating index laws
		Using index laws
Recognise terminating and recurring decimals, using digital tools as appropriate	Terminating & recurring decimals	Investigating terminating & recurring decimals
Use the 4 operations with integers and with rational numbers, choosing and using efficient strategies and digital tools where appropriate	Integers	Adding & subtracting integers
		Multiplying & dividing integers
		4 operations of integers
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	Percentages in financial context	Increasing & decreasing amounts
	Percentages in financial context	Solving problems involving percentages
	Percentages in financial context	Calculations with discounts
	Percentages in financial context	Simple interest
	Percentages in financial context	Hire purchase agreements
	Percentages in financial context	GST: Goods and Services Tax

2 Algebra

Outcome	Quests	Content
Create, expand, factorise, rearrange and simplify linear expressions, applying the associative, commutative, identity, distributive and inverse properties	Simplify algebraic expressions	Simplifying algebraic expressions
	Expand algebraic expressions	Expanding basic algebraic expressions
	Factorise algebraic expressions	Factorising 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	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
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	Linear equations in context	Modelling linear equations in context
Experiment with linear functions and relations using digital tools, making and testing conjectures and generalising emerging patterns	Compare linear graphs	Comparing linear graphs

3 Measurement

Outcome	Quests	Content
Solve problems involving the area and perimeter of irregular and composite shapes using appropriate units	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
Solve problems involving the volume and capacity of right prisms using appropriate units	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
Solve problems involving the circumference and area of a circle using formulas and appropriate units	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
Solve problems involving duration, including using 12- and 24-hour time across multiple time zones	Solve problems involving time	Time elapsed
		Rounding & converting time
		Solving problems with time zones
Recognise and use rates to solve problems involving the comparison of 2 related quantities of different units of measure	Use rates to solve problems	Understanding rates
		Comparing rates
		Rates in context
Use Pythagoras' theorem to solve problems involving the side lengths of right-angled triangles	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
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,	Solve problems involving ratios	Pythagoras' Theorem: using exact values
		Solving problems involving ratios
		Ratios involving more than two parts
		Converting ratios

reviewing the appropriateness of the model		
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4 Shape

Outcome	Quests	Content
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	Define & work with congruence	Defining & working with congruence
	Determine congruence in triangles	Determining congruence in triangles
	Similar triangles	Introducing similarity
		Similar triangles
Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related problems explaining reasoning	Use properties of congruent triangles	Using properties of congruent triangles
	Solve problems involving quadrilaterals	Solving problems involving quadrilaterals
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	Create algorithms for congruent shapes	Creating algorithms for congruent shapes

5 Statistics

Outcome	Quests	Content
Investigate techniques for data collection including census, sampling, experiment and observation, and explain the practicalities and implications of obtaining data through these techniques	Collect data	Collecting 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	Data sampling & populations	Exploring data sampling

6 Probability

Outcome	Quests	Content
Recognise that complementary events have a combined probability of one; use this relationship to calculate probabilities in applied contexts	Complementary events	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	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
Conduct repeated chance experiments and simulations, using digital tools to determine probabilities for compound events, and describe results	Chance events	Two-way tables & Venn diagrams
		Repeated chance events

Year 8 – Activities

1 Number

Outcome	Topic	Activity Title
AC9M8N01 - recognise irrational numbers in applied contexts, including square roots and π	N- Number properties	Irrational Numbers
AC9M8N02 - establish and apply the exponent laws with positive integer exponents and the zero-exponent, using exponent notation with numbers		Index Form to Numbers
AC9M8N03 - recognise terminating and recurring decimals, using digital tools as appropriate		Index Notation
		Properties of Exponents
		Simplifying with Index Laws 1
		The Zero Index
		Recurring Decimals
	Recurring Decimals and Series	
AC9M8N04 - use the 4 operations with integers and with rational numbers, choosing and using efficient strategies and digital tools where appropriate	N-Integers	Adding Integers: Positive, Negative or Zero
		Integers: Multiply and Divide
		Integers: Order of Operations (BEDMAS)
		Multiplying and Dividing Integers
		Powers 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	N- Number applications & operations	Percentage of an amount using Decimals (calculator)
		Percent Increase and Decrease
		Solve Percent Equations
		GST
		Profit and Loss
AC9M8M05 - recognise and use rates to solve problems involving the comparison of 2 related quantities of different units of measure		Rates
AC9M8M07 - use mathematical modelling to solve practical problems involving ratios and rates, including financial contexts; formulate problems; interpret and communicate solutions in terms of		Ratio Word Problems

the situation, reviewing the appropriateness of the model		
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2 Algebra

Outcome	Topic	Activity Title
Create, expand, factorise, rearrange and simplify linear expressions, applying the associative, commutative, identity, distributive and inverse properties	Algebraic expressions	Expanding Brackets
		Expand then Simplify
		Expanding with Negatives
		Factorising Expressions
		Factorising with Negatives
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	Linear equations & inequalities	Which Straight Line?
		Identifying Graphs
Intercepts		
Equation of a Line 1		
General Form of a Line		
Horizontal and Vertical Lines		
Equation from Point and Gradient		
Direct Linear Variation/ $y=ax$		
Modelling Linear Relationships		
Linear Modelling		
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		Breakeven Point

3 Measurement

Outcome	Topic	Activity Title
Solve problems involving the area and perimeter of irregular and composite shapes using appropriate units	Perimeter, Area & Volume	Perimeter: Composite Shapes
Solve problems involving the volume and capacity of right prisms using appropriate units		Area: Composite Shapes
Solve problems involving the circumference and area of a circle using formulas and appropriate units		Capacity Word Problems
		Volume of Triangular Prisms
		Volume: Prisms
		Arc Length
		Perimeter and Circles
		Area: Circles 1
		Area: Sectors (Degrees)
		Area: Annulus
Solve problems involving duration, including using 12- and 24-hour time across multiple time zones	Time	Elapsed Time
		What Time Will it Be?
		Using Timetables
		Australian Time Zones
		Time Zones
		Time Differences
Use Pythagoras’ theorem to solve problems involving the side lengths of right-angled triangles	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)

4 Shape

Outcome	Topic	Activity Title
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	Shapes and angles	Congruent Triangles
Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related problems explaining reasoning		Similar Triangles
		Similarity Proofs
		Exterior Angles of a Triangle
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	Position and transformation	True and Compass Bearings
		Latitude and Longitude

5 Statistics

Outcome	Topic	Activity Title
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	Statistical investigations	Methods of Data Sampling
		Data sampling

6 Probability

Outcome	Topic	Activity Title
Recognise that complementary events have a combined probability of one; use this relationship to calculate probabilities in applied contexts	Probability	Complementary Events
		Dice and Coins
		Venn Diagram 1
		Venn Diagrams
		Probability Tables
		Tree Diagrams



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