Mathletics

Australian Curriculum v9

Activities (Courses) and Skill Quests

Years 3 – 6

January, 2025

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Year 3

1 Number

AC9M3N01 recognise, represent and order natural numbers using naming and writing conventions for numerals beyond 10 000	
Course Topics	**Activities**
Numbers beyond 10 000 with 5 digits	Place Value 3
	Place Value to Thousands
	Partition and Rename 2
	Partition and Rename 3
	Ascending Order
	Descending Order
	Smallest and largest numbers
	Numbers from Words to Digits 1
	Rounding Numbers
Topics	**Skill Quests**
Numbers to 10 000	Identifying & counting numbers to 4 digits
	Reading & representing numbers to 4 digits
	Comparing & ordering numbers to 4 digits
	Place value to 4 digits
	Partitioning numbers to 4 digits
	Rounding numbers to 4 digits
Numbers to 100 000	Comparing & ordering numbers to 5 digits
	Place value to 5 digits
	Partitioning numbers to 5 digits
	Rounding numbers to 5 digits

AC9M3N02 recognise and represent unit fractions including 1/2, 1/3, 1/4, 1/5, 1/10 and their multiples in different ways; combine fractions with the same denominator to complete the whole	
Course Topics	**Activities**
Unit fractions	Shade fractions
	Identifying Fractions on a Number Line
	Fractions of a Collection 1
	Fraction Length Models 1
	Unit Fractions
Topics	**Skill Quests**
Fraction symbols	Exploring the meaning of fraction symbols
	Introducing terms numerator & denominator
Find & count in halves & quarters	Finding half of a set or quantity (symbols)
	Finding quarters of sets or shapes (symbols)
	Finding halves & quarters (symbols)
	Counting in halves & quarters to 1
Introduce eighths	Introducing eighths
	Using fractions: halves, quarters & eighths
Introduce thirds	Introducing thirds

	Using fractions: halves, thirds & quarters
Introduce sixths	Introducing sixths
Introduce fifths	Introducing fifths
Introduce tenths	Introducing tenths

AC9M3N03 add and subtract two- and three-digit numbers using place value to partition, rearrange and regroup numbers to assist in calculations without a calculator	
Course Topics	**Activities**
Up to 3 digit add & subtract	Add 3 Numbers: Bonds to 100
	Partition Puzzles 2
	Repartition to Subtract
Topics	**Skill Quests**
Addition & subtraction using place value	Add & subtract using number facts within 1000
	Add & subtract 2- & 3-digit using jump strategy
	Add & subtract 2- & 3-digit using place value
	Add & subtract 2- & 3-digit using bridging to 10
	Adding & subtracting - bridging with unknowns
	Adding & subtracting 3-digits using partitioning
	Adding & subtracting 3-digits using place value
	Add & subtract 2- & 3-digit using split strategy
	Add & subtract 2-digit rounding & compensation
	Add & subtract 3-digit rounding & compensation
	Adding & subtracting to make 100
	Add & subtract multiples of 100, 1000 & 10 000
	Add & subtract using non-standard partitioning
	Add & subtract: choosing efficient strategies

AC9M3N04 multiply and divide one- and two-digit numbers, representing problems using number sentences, diagrams and arrays, and using a variety of calculation strategies	
Course Topics	**Activities**
Multiply & Divide	Related Facts 2
	Frog Jump Multiplication
	Frog Jump Division
	Equivalent Facts: Multiply
	Divide Into Equal Groups
Topics	**Skill Quests**
Multiplication & division	Using repeated addition to multiply
	Using repeated subtraction to divide
	Relating multiplication & division
	Interpreting & solving mult/div word problems
	Multiplication strategies: 1-digit numbers
	Multiplying 2-digit numbers by a 1-digit number

AC9M3N05 estimate the quantity of objects in collections and make estimates when solving problems to determine the reasonableness of calculations	
Course Topics	**Activities**
Up to 3 digit add & subtract	Estimate Differences
	Estimate Sums
	Bar Model Problems 1
	Bar Model Problems 2
Topics	**Skill Quests**
Estimation strategies	Estimating additions
	Estimating subtractions
	Judging the reasonableness of answers

AC9M3N06 use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate problems using number sentences and choose calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Solve practical problems	Solving addition & subtraction practical problems
	Solve multiplication & division practical problems
	Missing number problems using all four operations

AC9M3N07 follow and create algorithms involving a sequence of steps and decisions to investigate numbers; describe any emerging patterns	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Create algorithms to investigate numbers	Identifying & creating number patterns
	Working with code to create algorithms

2 Algebra

AC9M3A01 recognise and explain the connection between addition and subtraction as inverse operations, apply to partition numbers and find unknown values in number sentences	
Course Topics	**Activities**
Patterns & missing numbers	Odd and Even Numbers 1
	Pick the Next Number
	Describing Patterns
	Find the Missing Number 1
	Missing Values
	Counting by Twos

	Counting by Fives
	Counting by Tens
	Count by 2s, 5s and 10s
Topics	**Skill Quests**
Addition & subtraction relationship	Relationship between addition & subtraction
	Equivalent number sentences
	Word problems for finding unknown quantities
	Representing add & subtract using a bar model

AC9M3A02 extend and apply knowledge of addition and subtraction facts to 20 to develop efficient mental strategies for computation with larger numbers without a calculator	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Apply knowledge of facts to 20	Finding fact families
	Numbers bonds to 20
	Applying facts to 20 to larger numbers

AC9M3A03 recall and demonstrate proficiency with multiplication facts for 3, 4, 5 and 10; extend and apply facts to develop the related division facts	
Course Topics	**Activities**
Patterns & missing numbers	Dividing Twos
	Dividing Fives
	Dividing Tens
	Grouping in Fours
	Dividing Fours
	Grouping in Threes
	Dividing Threes
Topics	**Skill Quests**
Multiplication & division facts for 2	Recalling multiplication & division facts for 2
Multiplication & division facts for 10	Exploring multiplication by 10
	Recalling multiplication & division facts for 10
Multiplication & division facts for 5	Exploring multiplication by 5
	Recalling multiplication & division facts for 5
Mult/div facts for 2, 5 & 10	Multiplication & division facts for 2, 5, 10
Multiplication & division facts for 3	Exploring multiplication by 3
	Recalling multiplication & division facts for 3
Multiplication & division facts for 4	Exploring multiplication by 4
	Recalling multiplication & division facts for 4

3 Measurement

AC9M3M01 identify which metric units are used to measure everyday items; use measurements of familiar items and known units to make estimates	
Course Topics	**Activities**
Measurements	Which Unit of Measurement?
	Which Measuring Tool?
	Using a Litre
Topics	**Skill Quests**
Identify metric units of measure	Introducing centimetres
	Introducing millimetres
	Selecting appropriate units to measure length
	Introducing litres
	Introducing millilitres
	Selecting appropriate units to measure capacity
	Introducing kilograms
	Introducing grams
	Selecting appropriate units to measure mass
	Identifying correct units of measurement

AC9M3M02 measure and compare objects using familiar metric units of length, mass and capacity, and instruments with labelled markings	
Course Topics	**Activities**
Measurements	How Long is That?
	Measure to the Nearest Half Centimetre
	How Heavy?
	Ordering Mass (g)
Topics	**Skill Quests**
Length, mass & capacity	Comparing, ordering & measuring length
	Comparing, ordering & measuring capacity
	Comparing, ordering & measuring mass

AC9M3M03 recognise and use the relationship between formal units of time including days, hours, minutes and seconds to estimate and compare the duration of events	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Introduce units of time	Introducing hours
	Introducing minutes
	Introducing seconds
Duration & units of time	Understanding relationship between units of time
	Understanding duration

AC9M3M04 describe the relationship between the hours and minutes on analog and digital clocks, and read the time to the nearest minute	
Course Topics	**Activities**
Measurements	Five Minute Times
	What is the Time?
Topics	**Skill Quests**
Tell time	Telling time to five minutes
	Telling time to the minute

AC9M3M05 identify angles as measures of turn and compare angles with right angles in everyday situations	
Course Topics	**Activities**
Shape & space	Comparing Angles
	Equal Angles
Topics	**Skill Quests**
Identify & compare angles	Introducing angles
	Introducing right angles

AC9M3M06 recognise the relationships between dollars and cents and represent money values in different ways	
Course Topics	**Activities**
Money, Dollars & Cents	Money
	Who's got the Money?
	How much Change?
Topics	**Skill Quests**
Money	Recognising Australian notes & coins
	Counting Australian dollars & cents
	Using money to make purchases

4 Space

AC9M3SP01 make, compare and classify objects, identifying key features and explaining why these features make them suited to their uses	
Course Topics	**Activities**
Shape & space	How Many Faces?
	How many Edges?
	Count the Corners
	Relate Shapes and Solids
	Collect the Objects
	Symmetry

Topics	Skill Quests
3D objects	Exploring prisms & pyramids
	Introducing nets
	Recognising & comparing 3D objects
	Describing & sorting 3D objects
	Comparing 2D shapes & 3D objects

AC9M3SP02 interpret and create two-dimensional representations of familiar environments, locating key landmarks and objects relative to each other	
Course Topics	**Activities**
Shape & space	Following Directions
	Coordinate Meeting Place
	Map Coordinates
	Where is it?
Topics	**Skill Quests**
Interpret & create maps	Interpreting simple maps

5 Statistics

AC9M3ST01 acquire data for categorical and discrete numerical variables to address a question of interest or purpose by observing, collecting and accessing data sets; record the data using appropriate methods including frequency tables and spreadsheets	
Course Topics	**Activities**
Record sort read & interpret data	Tallies
	Sorting Data
Topics	**Skill Quests**
Collect & record data	Collecting & recording category data
	Using tables

AC9M3ST02 create and compare different graphical representations of data sets including using software where appropriate; interpret the data in terms of the context	
Course Topics	**Activities**
Record sort read & interpret data	Pictographs
	Interpreting Tables
	Reading from a Column Graph
	Column Graphs
Topics	**Skill Quests**
Create & compare data representations	Representing & interpreting data displays
	Comparing data displays

AC9M3ST03 conduct guided statistical investigations involving the collection, representation and interpretation of data for categorical and discrete numerical variables with respect to questions of interest	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Understand statistical investigations	Introducing the statistical investigation process
	Conducting a statistical investigation

6 Probability

AC9M3P01 identify practical activities and everyday events that involve chance; describe possible outcomes and events as 'likely' or 'unlikely' and identify some events as 'certain' or 'impossible' explaining reasoning	
Course Topics	**Activities**
Probability and chance	Will it Happen?
	Most Likely and Least Likely
	Introductory probability
	What are the Chances?
	How many Combinations?
Topics	**Skill Quests**
Language of chance	Using basic probability language

AC9M3P02 conduct repeated chance experiments; identify and describe possible outcomes, record the results, recognise and discuss the variation	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Chance experiments	Conducting chance experiments

Year 4

1 Number

AC9M4N01 recognise and extend the application of place value to tenths and hundredths and use the conventions of decimal notation to name and represent decimals	
Course Topics	**Activities**
Introducing Decimals	Decimals from Words to Digits 1
	Decimals on the Number Line
	Decimal Place Value
	Who's got the Money?
	Money
	Grams and Kilograms
	Millilitres and Litres
	Centimetres and Metres
Topics	**Skill Quests**
Numbers to 1 000 000	Reading & representing numbers to 6 digits
	Comparing & ordering numbers to 6 digits
	Place value to 6 digits
	Partitioning numbers to 6 digits
	Counting by ones, tens & hundreds
Numbers of any size	Reading & representing numbers of any size
	Comparing & ordering numbers of any size
	Place value of numbers of any size
	Partitioning numbers of any size
Place value to hundredths	Introducing decimal notation
	Understanding decimal tenths
	Understanding decimal hundredths
	Partitioning decimal hundredths
Connect decimals & fraction	Connecting fractions & decimal notation
Round decimal tenths & hundredths	Rounding decimal tenths & hundredths
Decimals used in money	Understanding decimals used in money

AC9M4N02 explain and use the properties of odd and even numbers	
Course Topics	**Activities**
Patterns & missing numbers	Odd and Even Numbers 1
Topics	**Skill Quests**
Odd & even numbers	Odd & even number patterns (up to 20)
	Identifying odd & even numbers & patterns
	Properties of odd & even numbers

AC9M4N03 find equivalent representations of fractions using related denominators and make connections between fractions and decimal notation	
Course Topics	**Activities**
Fractions & equivalents	Thirds and Sixths
	What Fraction is Shaded?
	What fraction is Shaded 1
	What Mixed Number Is Shaded?
	Equivalent Fraction Wall 1
	Equivalent Fraction Wall 2
Topics	**Skill Quests**
Equivalent fractions	Investigating equivalent fractions less than 1
	Investigating equivalent fractions greater than 1
	Patterns in equivalent fractions
	Using multiplication to find equivalent fractions

AC9M4N04 count by fractions including mixed numerals; locate and represent these fractions as numbers on number lines	
Course Topics	**Activities**
Fractions & equivalents	Identifying Fractions on a Number Line
	Identifying Fractions Beyond 1
	Counting with Fractions on a Number Line
	Mixed and Improper Fractions on a Number Line
Topics	**Skill Quests**
Count by fractions & mixed numerals	Counting in halves & quarters
	Counting in halves, quarters & eighths
	Counting in thirds
	Counting in tenths
	Counting in simple fractions on a number line
Convert fraction types using models	Converting mixed numerals to improper fractions

AC9M4N05 solve problems involving multiplying or dividing natural numbers by multiples and powers of 10 without a calculator, using the multiplicative relationship between the place value of digits	
Course Topics	**Activities**
Multiplication & division	Multiplying by 10, 100, 1000
	Dividing by 10, 100, 1000
Topics	**Skill Quests**
Mult/div by multiples of 10, 100 & 1000	Using place value to multiply by 10
	Multiplying by multiples of 100
	Multiplying by 1000
	Dividing by multiples of 10
	Dividing by multiples of 100
	Dividing by 1000

AC9M4N06 develop efficient strategies and use appropriate digital tools for solving problems involving addition and subtraction, and multiplication and division where there is no remainder	
Course Topics	**Activities**
Efficient strategies with operations	Bump Add and Subtract
	Jump Add and Subtract
	Complements to 10, 20, 50
	Split Add and Subtract
	Compensation – Add
	Column Addition 1
	Columns that Subtract
	Subtract Numbers
	Magic Symbols 1
	Double and Halve to Multiply
	Fact Families: Multiply and Divide
	Multiplication Arrays
	Arrays 1
	Arrays 2
	Related Facts 2
	Model multiplication to 5 × 5
	Grid Methods 1
	Problems: Times and Divide
Topics	**Skill Quests**
Addition & subtraction using algorithms	Addition algorithms (without regrouping)
	Addition algorithms (with regrouping)
	Addition algorithms (with & without regrouping)
	Subtraction algorithms (without decomposing)
	Subtraction algorithms (with decomposing)
Addition & subtraction strategies	Add & subtract using efficient strategies
	Add & subtract using a bar model
	Add & subtract using place value portioning
	Add & subtract using jump strategies
	Add & subtract using split strategies
	Add & subtract using round & compensate strategies
Mult & div strategies, no remainder	Multiplication strategies: 1-digit numbers
	Using the conventions of multiplication
	Inverse facts: multiplication & division
	Practising multiplication strategies
	Multiplying 2-digit numbers by a 1-digit number
	Multiplying 2-digit numbers using doubling
	Multiplying 2-digit numbers using factorising
	Selecting effective multiplication strategies
	Selecting effective division strategies
	Comparisons using the language of multiplication
	Dividing a 2-digit number by a 1-digit number

AC9M4N07 choose and use estimation and rounding to check and explain the reasonableness of calculations including the results of financial transactions	
Course Topics	**Activities**
Efficient strategies with operations	Estimate Sums
	Estimate Differences
Topics	**Skill Quests**
Use estimation & rounding	Rounding & estimating with addition
	Rounding & estimating with subtraction
	Checking accuracy of addition & subtraction
	Estimating with multiplication & division
	Using estimating with money

AC9M4N08 use mathematical modelling to solve practical problems that involve additive and multiplicative situations including financial contexts; formulate the problems using number sentences and choose efficient calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation	
Course Topics	**Activities**
Problem solving with models	Bar Model Problems 1
	Bar Model Problems 2
	Fractions of a Collection 1
	Fractions of a Collection 2
Topics	**Skill Quests**
Addition & subtraction word problems	Addition & subtraction word problems
	Posing addition & subtraction problems
	Expressing word problems as equations
Multiplication & division word problems	Expressing equations as word problems
	Solving multiplication & division word problems.
Addition & subtraction money problems	Solving addition & subtraction money problems

AC9M4N09 follow and create algorithms involving a sequence of steps and decisions that use addition or multiplication to generate sets of numbers; identify and describe any emerging patterns	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Sequences & patterns	Investigating sequences with multiples
	Exploring number patterns
	Finding & generating shape patterns from a rule
	Generating add/sub patterns from a rule
	Generating multiplication patterns from a rule
	Using a function machine to apply rules to numbers
	Working with code to create algorithms

2 Algebra

AC9M4A01 find unknown values in numerical equations involving addition and subtraction, using the properties of numbers and operations	
Course Topics	**Activities**
Patterns & missing numbers	Describing Patterns
	Missing Values
	I am Thinking of a Number!
	Balance Numbers to 20
Topics	**Skill Quests**
Addition & subtraction number sentences	Using inverse operations for add/sub equations
	Relationship between addition & subtraction
	Equivalent number sentences
	Word problems for finding unknown quantities

AC9M4A02 recall and demonstrate proficiency with multiplication facts up to 10 x 10 and related division facts; extend and apply facts to develop efficient mental strategies for computation with larger numbers without a calculator	
Course Topics	**Activities**
Multiplication & division	Grouping in Threes
	Grouping in Fours
	Grouping in Sixes
	Grouping in Sevens
	Grouping in Eights
	Grouping in Nines
	Dividing Threes
	Dividing Fours
	Dividing Sixes
	Dividing Sevens
	Dividing Eights
	Dividing Nines
	Multiplication Turnarounds
	Missing Numbers: × and ÷ facts
	Times Tables
	Multiply 3 single-digit numbers
Topics	**Skill Quests**
Multiplication & division facts	Multiplication & division facts up to 5
	Multiplying & dividing by 6 up to 60
	Multiplying & dividing by 7 up to 70
	Multiplying & dividing by 8 up to 80
	Multiplying & dividing by 9 up to 90
	Multiplying & dividing to 10 x 10

3 Measurement

AC9M4M01 interpret unmarked and partial units when measuring and comparing attributes of length, mass, capacity, duration and temperature, using scaled and digital instruments and appropriate units	
Course Topics	**Activities**
Measuring converting & comparing	How Heavy?
	How Long is That?
	Measuring Length
	Measure to the Nearest Half Centimetre
	How many Blocks?
	Comparing Volume
	Volume of Solids and Prisms - 1cm³ blocks
	What's the Temperature (Celsius)?
Topics	**Skill Quests**
Length, mass, capacity & temperature	Metric units of length
	Length & 3D objects
	Measuring temperature
	Measuring capacity in millilitres
	Measuring mass in grams & kilograms
	Reading scales with metric units

AC9M4M02 recognise ways of measuring and approximating the perimeter and area of shapes and enclosed spaces, using appropriate formal and informal units	
Course Topics	**Activities**
Measuring converting & comparing	Biggest Shape
	Equal Areas
	Area of Shapes
	Perimeter of Shapes
Topics	**Skill Quests**
Measure perimeter	Introducing perimeter
	Measuring perimeter
Measure area	Measuring & estimating area using square units
	Introducing area using formal units
	Measuring & comparing regular & irregular shapes
	Measuring area using formal units

AC9M4M03 solve problems involving the duration of time including situations involving “am” and “pm” and conversions between units of time	
Course Topics	**Activities**
Measuring converting & comparing	What is the Time?
	Time Conversions: Whole Numbers 1
	Time Conversions: Whole Numbers 2
	Time Conversions: Simple Fractions
	Time Conversions: Simple Decimals (0.25, 0.5, 0.75)

Topics	Skill Quests
Convert units of time	Converting units of time
Solve duration of time problems	Understanding am & pm notation
	Solving duration of time problems

AC9M4M04 estimate and compare angles using angle names including acute, obtuse, straight angle, reflex and revolution, and recognise their relationship to a right angle	
Course Topics	**Activities**
Space shape & angle	Equal Angles
	Comparing Angles
	Right Angle Relation
	What Type of Angle?
	Relate Shapes and Solids
	Collect the Objects 2
Topics	**Skill Quests**
Classify angles	Classifying angles

4 Space

AC9M4SP01 represent and approximate composite shapes and objects in the environment, using combinations of familiar shapes and objects	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Identify composite shapes & objects	Composing & decomposing 2D shapes

AC9M4SP02 create and interpret grid reference systems using grid references and directions to locate and describe positions and pathways	
Course Topics	**Activities**
Space shape & angle	Coordinate Meeting Place
	Map Coordinates
	Using a key
	What Direction was That?
	More Directions!
Topics	**Skill Quests**
Create & interpret grid references	Working with grid reference systems

AC9M4SP03 recognise line and rotational symmetry of shapes and create symmetrical patterns and pictures, using dynamic geometric software where appropriate	
Course Topics	**Activities**
Space shape & angle	Symmetry
	Symmetry or Not?
	Rotational Symmetry
Topics	**Skill Quests**
Line & rotational symmetry	Recognising & drawing line symmetry
	Rotational symmetry
Symmetrical patterns, pictures & shapes	Creating & drawing symmetrical designs
	Recognising tessellations

5 Statistics

AC9M4ST01 acquire data for categorical and discrete numerical variables to address a question of interest or purpose using digital tools; represent data using many-to-one pictographs, column graphs and other displays or visualisations; interpret and discuss the information that has been created	
Course Topics	**Activities**
Graphs with scales &/or axis	Picture Graphs: with scale & half symbols
	Making Picture Graphs: With Scale
	Column Graphs
	Reading from a Column Graph
Topics	**Skill Quests**
Represent data with many-to-one graphs	Column graphs using many-to-one correspondence
	Picture graphs with many-to-one correspondence

AC9M4ST02 analyse the effectiveness of different displays or visualisations in illustrating and comparing data distributions, then discuss the shape of distributions and the variation in the data	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Evaluate & compare data displays	Evaluating & comparing data displays
	Evaluating the shape of data sets

AC9M4ST03 conduct statistical investigations, collecting data through survey responses and other methods; record and display data using digital tools; interpret the data and communicate the results	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Methods of data collection	Surveys & sorting data

6 Probability

AC9M4P01 describe possible everyday events and the possible outcomes of chance experiments and order outcomes or events based on their likelihood of occurring; identify independent or dependent events	
Course Topics	**Activities**
Chance	Chance Gauge
	What are the Chances?
	Counting Techniques 1
Topics	**Skill Quests**
Chance events	Describing the chance of events occurring
Non-simultaneous everyday events	Exploring non-simultaneous everyday events
Independent & dependent events	Independent & dependent events

AC9M4P02 conduct repeated chance experiments to observe relationships between outcomes; identify and describe the variation in results	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Conduct chance experiments	Conducting chance experiments
	Investigating equally likely outcomes of chance

Year 5

1 Number

AC9M5N01 interpret, compare and order numbers with more than 2 decimal places, including numbers greater than one, using place value understanding; represent these on a number line	
Course Topics	**Activities**
REVIEW Whole Numbers & Place Value	Place Value to Millions
	Numbers from Words to Digits 1
	Numbers from Words to Digits 2
	Greater Than or Less Than?
	Partition and Rename 3
	Expanded Notation
	Rounding Numbers
	Decimals from Words to Digits 1
	Decimals on the Number Line
	Decimal Place Value
	Nearest Whole Number
Fractions decimals & percentages	Decimal Order
	Comparing Decimals
	Centimetres and Metres
Topics	**Skill Quests**
Understand decimals to thousandths	Introducing decimal thousandths
	Partitioning decimals of any size
	Comparing & ordering decimals
	Interpreting zeros at end of decimals
	Decimal & fraction equivalences
	Connecting decimals to the metric system

AC9M5N02 express natural numbers as products of their factors, recognise multiples and determine if one number is divisible by another	
Course Topics	**Activities**
Factors & Multiples	Multiples
	Lowest Common Multiple
	Factors
	Highest Common Factor
	Find the Factor
	Divisibility Tests (2, 5, 10)
	Divisibility Tests (3, 4, 9)
	Tests of Divisibility 1
Topics	**Skill Quests**
Multiples & factors	Finding multiples
	Finding factors
	Solving problems using factors & multiples
Divisibility tests	Divisibility tests for 2, 5 & 10
	Divisibility tests for 3, 4, 6, 8 & 9

AC9M5N03 compare and order fractions with the same and related denominators including mixed numerals, applying knowledge of factors and multiples; represent these fractions on a number line	
Course Topics	**Activities**
Compare & order fractions	Shading Equivalent Fractions
	Equivalent Fraction Wall 1
	Equivalent Fractions on a Number Line 1
	Equivalent Fractions
	Compare Fractions 1a
	Compare Fractions 1b
	Improper to Mixed
	Mixed to Improper
	Converting Mixed and Improper
	Identifying Fractions on a Number Line
	Mixed and Improper Fractions on a Number Line
Topics	**Skill Quests**
Compare & order fractions	Comparing & ordering fractions
	Comparing & ordering fractions & mixed numbers
	Using common factors to simplify proper fractions

AC9M5N04 recognise that 100% represents the complete whole and use percentages to describe, represent and compare relative size; connect familiar percentages to their decimal and fraction equivalents	
Course Topics	**Activities**
Fractions decimals & percentages	Modelling Percentages
	Fractions to Decimals
	Percents and Decimals
	Common Fractions as Percentages (AU)
Topics	**Skill Quests**
Fractions, decimals & percentages	Introducing percentages
	Connecting percentages & decimals
	Connecting percentages & fractions
	Relationship - percentages, decimals & fractions

AC9M5N05 solve problems involving addition and subtraction of fractions with the same or related denominators, using different strategies	
Course Topics	**Activities**
Add & Subtract related fractions	Add: Common Denominator
	Subtract: Common Denominator
	Common Denominator
	Add Like Mixed Numbers
	Subtract Like Mixed Numbers
Topics	**Skill Quests**
Add & subtract fractions	Add & subtract proper fractions - same denominator
	Add & subtract mixed numerals - same denominator
	Add & subtract fractions - related denominators
	Add & subtract mixed num - related denominators

AC9M5N06 solve problems involving multiplication of larger numbers by one- or two-digit numbers, choosing efficient calculation strategies and using digital tools where appropriate; check the reasonableness of answers	
Course Topics	**Activities**
More Multiplication & division	Multiply Multiples of 10
	Multiply More Multiples of 10
	Multiply 2 Digits Area Model
	Grid Methods 1
	Double and Halve to Multiply
	Mental Methods Multiplication 1
Topics	**Skill Quests**
Strategies to multiply by 1- or 2-digits	Multiplication using multiples of 10
	Multiplying: rounding, compensating & partitioning
	Multiplying: doubling, halving & thirding
	Multiplying using the split method
	Multiplying using an area model
	Multiplying by factorising
	Multiplying using expanded algorithm
	Multiplying using contracted algorithm
	Multiplying using extended form of algorithm

AC9M5N07 solve problems involving division, choosing efficient strategies and using digital tools where appropriate; interpret any remainder according to the context and express results as a whole number, decimal or fraction	
Course Topics	**Activities**
More Multiplication & division	Dividing by 10, 100, 1000
	Division Facts 1
	Remainders by Arrays
	Mental Methods Division 1
	Mental Methods Division
Topics	**Skill Quests**
Division strategies incl. remainders	Dividing by a 1-digit number using partitioning
	Dividing by a 2-digit number using partitioning
	Dividing by a 1-digit number using factorising
	Dividing by a 2-digit number using factorising
	Extended division - no remainders or zeros
	Extended division with remainders
	Extended division with & without remainders
	Contracted division - no remainders or zeros
	Contracted division - no remainders
	Contracted division - with & without remainders
	Dividing by 2-digit numbers - formal algorithms

AC9M5N08 check and explain the reasonableness of solutions to problems including financial contexts using estimation strategies appropriate to the context

Course Topics	Activities
Rounding & estimating	Rounding off Numbers
	Estimate Sums
	Estimate Differences
	Estimate Products
	Estimate Quotients
	Estimation: Multiply and Divide
	Estimate Decimal Sums 2
	Estimate Decimal Operations
Topics	**Skill Quests**
Estimation & rounding	Rounding to estimate addition & subtraction
	Rounding to estimate multiplication & division
	Estimating with money

AC9M5N09 use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate the problems, choosing operations and efficient calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation	
Course Topics	**Activities**
Solve problems	Columns that Add
	Add Two 2-Digit Numbers
	Add 3-Digit Numbers
	Columns that Subtract
	Subtract Numbers
	Multiply: 1-Digit Number
	Multiply: 2-Digit by 1-Digit
	Divide: 1-Digit Divisor 1
	Bar model × ÷
	Problems: Times and Divide
Topics	**Skill Quests**
Add & subtract practical problems	Addition & subtraction word problems
	Expressing word problems as equations add/sub
	Solving add & subtract money problems
Multiply & divide practical problems	Multiplication & division word problems
	Expressing word problems as equations mult/div
	Solving mult-step mult/div word problems
	Solving mult & div money problems
All operations practical problems	Express equations as word problems all operations

AC9M5N10 create and use algorithms involving a sequence of steps and decisions and digital tools to experiment with factors, multiples and divisibility; identify, interpret and describe emerging patterns

Course Topics	Activities
Teacher directed	
Topics	**Skill Quests**
Create & use algorithms	Manipulating numbers using a given rule
	Designing flowcharts to solve add/sub of fractions
	Factors & multiples

2 Algebra

AC9M5A01 recognise and explain the connection between multiplication and division as inverse operations and use this to develop families of number facts	
Course Topics	**Activities**
Fact families Mult/Div	Fact Families: Multiply and Divide
	Multiplication Turnarounds
	Missing Numbers: × and ÷ facts
	Times Tables
	Multiply 3 single-digit numbers
Topics	**Skill Quests**
Connect multiplication & division	Inverse relationship - multiplication & division

AC9M5A02 find unknown values in numerical equations involving multiplication and division using the properties of numbers and operations	
Course Topics	**Activities**
Missing Values	Equivalent Facts: Multiply
	Missing Values
	Missing Numbers: Variables
	Solve Equations: Multiply, Divide 1
	I am Thinking of a Number!
	Fit the Conditions 1
Topics	**Skill Quests**
Find unknown values in mult & div	Finding unknown values - multiplication & division

3 Number

AC9M5M01 choose appropriate metric units when measuring the length, mass and capacity of objects; use smaller units or a combination of units to obtain a more accurate measure	
Course Topics	**Activities**
Measurement	Kilometre Conversions
	Metres and Kilometres
	Millilitres and Litres
	Litre Conversions
	Kilogram Conversions
	Grams and Kilograms
Topics	**Skill Quests**
Choose appropriate metric units	Introducing kilometres
	Comparing & ordering units of length
	Selecting appropriate units – length
	Comparing & ordering units of mass
	Selecting appropriate units – mass
	Selecting appropriate units – capacity
	Recognising suitable metric units - all

AC9M5M02 solve practical problems involving the perimeter and area of regular and irregular shapes using appropriate metric units	
Course Topics	**Activities**
Measurement	Perimeter: Squares and Rectangles
	Area of Shapes
	Biggest Shape
	Equal Areas
	Area: Squares and Rectangles
Topics	**Skill Quests**
Perimeter & area - practical problems	Calculating perimeter practical problems
	Calculating area practical problems

AC9M5M03 compare 12- and 24-hour time systems and solve practical problems involving the conversion between them	
Course Topics	**Activities**
Time conversions & problems	Time Conversions: Simple Fractions
	Time Conversions: Simple Decimals (0.25, 0.5, 0.75)
	What Time Will it Be?
	Time Mentals
	Elapsed Time
	24 Hour Time
	Using Timetables
Topics	**Skill Quests**
Use 24-hour time	Using 24-hour notation
	Using 24-hour time in timetables

AC9M5M04 estimate, construct and measure angles in degrees, using appropriate tools including a protractor, and relate these measures to angle names	
Course Topics	**Activities**
Measurement	Classifying Angles
	Measuring Angles
	Estimating Angles
Topics	**Skill Quests**
Estimate, construct & measure angles	Identifying, estimating & measuring angles
	Classifying & constructing angles

4 Space

AC9M5SP01 connect objects to their nets and build objects from their nets using spatial and geometric reasoning	
Course Topics	**Activities**
Space & shape	What Pyramid am I?
	What Prism am I?
	Prisms and Pyramids
Topics	**Skill Quests**
Connect objects to nets	Connecting prisms & pyramids with their nets
	Connecting 3D objects with their nets

AC9M5SP02 construct a grid coordinate system that uses coordinates to locate positions within a space; use coordinates and directional language to describe position and movement	
Course Topics	**Activities**
Space & shape	Map Coordinates
	Coordinate Graphs: 1st Quadrant
	More Directions!
Topics	**Skill Quests**
Use coordinates in a grid system	Working with grid referenced maps
	Using Cartesian coordinate system - first quadrant
	Using landmarks & directional language

AC9M5SP03 describe and perform translations, reflections and rotations of shapes, using dynamic geometric software where appropriate; recognise what changes and what remains the same, and identify any symmetries	
Course Topics	**Activities**
Space & shape	Flip, Slide, Turn
	Transformations
	Rotational Symmetry

Topics	Skill Quests
Identify & describe transformations	Identifying & describing transformations

5 Statistics

AC9M5ST01 acquire, validate and represent data for nominal and ordinal categorical and discrete numerical variables to address a question of interest or purpose using software including spreadsheets; discuss and report on data distributions in terms of highest frequency (mode) and shape, in the context of the data	
Course Topics	**Activities**
Statistics	Tally Charts
	Mode
	Mode from Stem and Leaf Plot
	Mode from Frequency Table
	Grouping data and modal class
Topics	**Skill Quests**
Acquire, validate & represent data	Conducting surveys or statistical investigations
Understand data distributions	Understanding & calculating the mode
	Introducing the shape of data distribution

AC9M5ST02 interpret line graphs representing change over time; discuss the relationships that are represented and conclusions that can be made	
Course Topics	**Activities**
Statistics	Line Graphs: Interpretation
	Travel Graphs
Topics	**Skill Quests**
Interpret line graphs	Interpreting line graphs

AC9M5ST03 plan and conduct statistical investigations by posing questions or identifying a problem and collecting relevant data; choose appropriate displays and interpret the data; communicate findings within the context of the investigation	
Course Topics	**Activities**
Statistics	Stem and Leaf Plots: Concept
	Dot Plots
	Divided Bar Graphs
	Sector Graphs
Topics	**Skill Quests**
Teacher directed	

6 Probability

AC9M5P01 list the possible outcomes of chance experiments involving equally likely outcomes and compare to those which are not equally likely	
Course Topics	**Activities**
Chance & Probability	What are the Chances?
	Chance Gauge
	Introductory probability
	Fair Games
Topics	**Skill Quests**
Outcomes of chance experiments	Investigating equally likely outcomes
	Exploring fair & unfair chance experiments

AC9M5P02 conduct repeated chance experiments including those with and without equally likely outcomes, observe and record the results; use frequency to compare outcomes and estimate their likelihoods	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

Year 6

1 Number

AC9M6N01 recognise situations, including financial contexts, that use integers; locate and represent integers on a number line and as coordinates on the Cartesian plane	
Course Topics	**Activities**
Introducing Integers	Integers on a Number Line
	Ordering Integers (Number Line)
	Comparing Integers (<, =, >)
	What's the Temperature (Celsius)?
Topics	**Skill Quests**
Understand integers	Recognising situations that use integers
	Locating & representing integers on a number line
	Introducing the Cartesian plane

AC9M6N02 identify and describe the properties of prime, composite and square numbers and use these properties to solve problems and simplify calculations	
Course Topics	**Activities**
Multiples, factors, primes & composites	Multiples
	Multiples of
	Highest Common Factor
	Lowest Common Multiple
	Prime or Composite?
Topics	**Skill Quests**
Prime, composite & square numbers	Introducing prime & composite numbers
	Introducing square numbers

AC9M6N03 apply knowledge of equivalence to compare, order and represent common fractions including halves, thirds and quarters on the same number line and justify their order	
Course Topics	**Activities**
Equivalent fractions	Shading Equivalent Fractions
	Identifying Fractions on a Number Line
	Mixed and Improper Fractions on a Number Line
	Equivalent Fractions
	Comparing Fractions 1
	Compare Fractions 1a
	Compare Fractions 1b
Topics	**Skill Quests**
Compare & order common fractions	Recognise, compare & represent common fractions
	Comparing common fractions on a number line

AC9M6N04 apply knowledge of place value to add and subtract decimals, using digital tools where appropriate; use estimation and rounding to check the reasonableness of answers	
Course Topics	**Activities**
Add/subtract decimal and fractions	Decimal Complements
	Adding Decimals
	Subtract Decimals 1
Topics	**Skill Quests**
Add/sub decimals - mental strategies	Adding decimals using mental strategies
	Subtracting decimals using mental strategies
Add/sub decimals - digital technologies	Adding decimals using digital technologies
	Subtracting decimals using digital technologies
Add/sub decimals - written method	Adding decimals using written method
	Subtracting decimals using written method
Add/sub decimals – estimating	Estimating sums & differences of decimals

AC9M6N05 solve problems involving addition and subtraction of fractions using knowledge of equivalent fractions	
Course Topics	**Activities**
Add/subtract decimal and fractions	Add Subtract Fractions 1
	Common Denominator
	Add: Common Denominator
	Subtract: Common Denominator
	One Take Fraction
	Add Like Mixed Numbers
	Subtract Like Mixed Numbers
Topics	**Skill Quests**
Add & subtract proper fractions	Adding fractions with related denominators
	Subtracting fractions with related denominators
	Add & subtract fractions - related denominators
Add & subtract mixed numerals	Adding fractions & mixed numerals
	Subtracting fractions & mixed numerals

AC9M6N06 multiply and divide decimals by multiples of powers of 10 without a calculator, applying knowledge of place value and proficiency with multiplication facts, using estimation and rounding to check the reasonableness of answers	
Course Topics	**Activities**
Fractions, decimals & percentages	Multiply Decimals: 10, 100, 1000
	Divide Decimals: 10, 100, 1000
Topics	**Skill Quests**
Multiply/divide decimals by powers of 10	Multiplying decimals by powers of 10
	Dividing decimals by powers of 10
	Using estimation

AC9M6N07 solve problems that require finding a familiar fraction, decimal or percentage of a quantity, including percentage discounts, choosing efficient calculation strategies and using digital tools where appropriate	
Course Topics	**Activities**
Fractions, decimals & percentages	Fractions to Decimals
	Decimals to Fractions 1
	Percentage to Fraction
	Decimals to percentages
	Common Fractions as Percentages (AU)
	Fractions to Percentages (Non-Calculator)
	Percents and Decimals
	Match Decimals and Percentages
	Calculating Percentages (Mental)
	Money Problems: Four Operations
	Time Conversions: Simple Fractions
	Time Conversions: Simple Decimals (0.25, 0.5, 0.75)
Topics	**Skill Quests**
Find a fraction of a quantity	Finding a fraction of a quantity
Calculate percentages	Calculating percentages

AC9M6N08 approximate numerical solutions to problems involving rational numbers and percentages, including financial contexts, using appropriate estimation strategies	
Course Topics	**Activities**
Add/subtract decimal and fractions	Estimate Decimal Sums 1
	Estimate Decimal Differences 1
	Estimate Decimal Sums 2
	Estimate Decimal Differences 2
Fractions, decimals & percentages	Estimate Decimal Operations
	Estimate Products with Fractions
Topics	**Skill Quests**
Rational numbers & percentages	Estimating solutions

AC9M6N09 use mathematical modelling to solve practical problems, involving rational numbers and percentages, including in financial contexts; formulate the problems, choosing operations and efficient calculation strategies, and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, justifying the choices made	
Course Topics	**Activities**
Fractions, decimals & percentages	Fraction Wall Labelling 2
	Fraction Word Problems
	Percentage Word Problems
	Model Fractions to Multiply
Topics	**Skill Quests**
Solve practical percentage problems	Solving practical percentage problems

2 Algebra

AC9M6A01 recognise and use rules that generate visually growing patterns and number patterns involving rational numbers	
Course Topics	**Activities**
Algebra patterns equations & rules	Increasing Patterns
	Describing Patterns
	Find the Pattern Rule
	Table of Values
	Pattern Rules and Tables
Topics	**Skill Quests**
Recognise & use rules for patterns	Continuing & creating number sequences

AC9M6A02 find unknown values in numerical equations involving brackets and combinations of arithmetic operations, using the properties of numbers and operations	
Course Topics	**Activities**
Algebra patterns equations & rules	Number Sequences Up to 1 Million
	Order of Operations 1 (BIDMAS)
	Writing Algebraic Expressions
	Missing Numbers: Variables
	Simple Substitution
	Solve Equations: Add, Subtract 1
	Solve Equations: Multiply, Divide 1
Topics	**Skill Quests**
Understand order of operations	Order of operations with no grouping symbols
	Order of operations using grouping symbols
	Order of operations practical situations

AC9M6A03 create and use algorithms involving a sequence of steps and decisions that use rules to generate sets of numbers; identify, interpret and explain emerging patterns	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Design flowcharts to solve problems	Designing flowcharts to solve problems
Use rules & algorithms	Manipulating numbers using a given rule
	Creating algorithms for sets

3 Measurement

AC9M6M01 convert between common metric units of length, mass and capacity; choose and use decimal representations of metric measurements relevant to the context of a problem	
Course Topics	**Activities**
Converting metric units	Grams and Kilograms Conversion
	Grams and Kilograms
	Grams and Milligrams
	Converting Units of Mass
	Centimetres and Metres
	Metres and Kilometres
	Millilitres and Litres
	Converting Volume
Topics	**Skill Quests**
Connect decimals to the metric system	Decimal notation & the metric system
	Decimal representation in capacity
	Decimal representation in mass
Convert metric units of measurement	Converting metric units of length
	Converting metric units of capacity
	Converting metric units of mass

AC9M6M02 establish the formula for the area of a rectangle and use it to solve practical problems	
Course Topics	**Activities**
Area and angle	Area of Shapes
	Area: Squares and Rectangles
Topics	**Skill Quests**
Use formula for area of a rectangle	Using a formula to calculate area of a rectangle

AC9M6M03 interpret and use timetables and itineraries to plan activities and determine the duration of events and journeys	
Course Topics	**Activities**
Time conversions & problems	Time Conversions: Simple Fractions
	Time Conversions: Simple Decimals
	Time Mentals
	Elapsed Time
	24 Hour Time
	Using Timetables
Topics	**Skill Quests**
Interpret & use timetables	Interpreting & using timetables

AC9M6M04 identify the relationships between angles on a straight line, angles at a point and vertically opposite angles; use these to determine unknown angles, communicating reasoning	
Course Topics	**Activities**
Area and angle	Measuring Angles
	Estimating Angles
	Angle Sum of a Triangle
	Quadrilaterals: Angle Sum with Equations
	Exterior Angles of a Triangle
	Angles of revolution: Unknown Values
	Vertically Opposite Angles: Unknown Values
Topics	**Skill Quests**
Understand angle properties	Understanding adjacent angles
	Exploring vertically opposite angles
	Calculating angles that total 360˚
	Investigating supplementary & complementary angles

4 Space

AC9M6SP01 compare the parallel cross-sections of objects and recognise their relationships to right prisms	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Investigate cross-sections	Investigating cross-sections

AC9M6SP02 locate points in the 4 quadrants of a Cartesian plane; describe changes to the coordinates when a point is moved to a different position in the plane	
Course Topics	**Activities**
Shape and space	Ordered Pairs
	Number Plane
	Graphing from a Table of Values
	Reading Values from a Line
Topics	**Skill Quests**
Points on the Cartesian plane	Locating points on the Cartesian plane

AC9M6SP03 recognise and use combinations of transformations to create tessellations and other geometric patterns, using dynamic geometric software where appropriate	
Course Topics	**Activities**
Shape and space	Transformations: Coordinate Plane
	Rotations: Coordinate Plane

Topics	Skill Quests
Use combinations of transformations	Recognising tessellations
	Identifying a sequence of 2 transformations

5 Statistics

AC9M6ST01 interpret and compare data sets for ordinal and nominal categorical, discrete and continuous numerical variables using comparative displays or visualisations and digital tools; compare distributions in terms of mode, range and shape	
Course Topics	**Activities**
Mode & range	Mode
	Mode from Stem and Leaf Plot
	Mode from Frequency Table
	Data Extremes and Range
	Stem and Leaf Plots with Range
	Double Stem and Leaf Plots
	Line Graphs: Interpretation
Topics	**Skill Quests**
Interpret, compare & describe data sets	Two-way tables
	Side-by-side column graphs
	Comparing & selecting bivariate data displays
	Describing & interpreting data sets
Compare mode, range & shape	Understanding mode, range & shape of distributions
	Comparing modes in sets of data

AC9M6ST02 identify statistically informed arguments presented in traditional and digital media; discuss and critique methods, data representations and conclusions	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Interpret & evaluate secondary data	Interpreting & evaluating secondary data

AC9M6ST03 plan and conduct statistical investigations by posing and refining questions or identifying a problem and collecting relevant data; analyse and interpret the data and communicate findings within the context of the investigation	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

6 Probability

AC9M6P01 recognise that probabilities lie on numerical scales of 0 – 1 or 0% – 100% and use estimation to assign probabilities that events occur in a given context, using common fractions, percentages and decimals	
Course Topics	**Activities**
Probability	Simple Probability
	Probability Scale
	Complementary Events
	Dice and Coins
Topics	**Skill Quests**
Assign probabilities	Probability as a fraction, decimal or percent
	Probabilities from 0 to 1

AC9M6P02 conduct repeated chance experiments and run simulations with an increasing number of trials using digital tools; compare observations with expected results and discuss the effect on variation of increasing the number of trials	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Conduct chance experiments	Conducting chance experiments

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