Mathletics
Australian Curriculum
Skill Quests

Years 3 – 6

May, 2022

Mathletics

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Skill Quests
May 2022

Year 3

1 Number and Algebra

1.1 Number and place value

Outcome	Quests	Content
51. Investigate the conditions required for a number to be odd or even and identify odd and even numbers	Odd and even numbers	Identifying odd and even numbers
52. Recognise, model, represent and order numbers to at least 10 000	Numbers to 10 000	Identifying and counting numbers up to 4 digits
		Reading and representing numbers up to 4 digits
		Comparing and ordering numbers to 10 000
53. Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems	Place value and partitioning	Place value up to 4-digits
		Rounding numbers: 4 digits
54. Recognise and explain the connection between addition and subtraction	Addition and subtraction	Relationship between addition and subtraction
55. Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation	Addition & subtraction facts/strategies	Add/subtract: 2 and 3 numbers 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
		Add/subtract: bridging with unknowns
		Add/subtract: 3-digits using partitioning
		Add/subtract: 3-digits using place value
		Add/subtract: 2- & 3-digit using split strategy
		Add/subtract: rounding & compensation
		Add/subtract: to and from 100
		Add/subtract: multiples of 100, 1000 & 10 000
		Add/subtract: using non-standard partitioning
		Add/subtract: choosing efficient strategies
		Add/subtract: estimating

Outcome	Quests	Content
56. Recall multiplication facts of two, three, five and ten and related division facts	Skip counting	Skip counting by 10 to 1000
		Skip counting by 2 to 1000
		Skip counting by 5 to 1000
		Skip counting 0 to 30
		Skip counting multiples of 30
		Skip counting by 4 to 40
	Multiplication & division facts	Multiplication/division facts for 2
		Multiplication/division facts for 10
		Multiplication/division facts for 5
		Multiplication/division facts for 2, 5, 10
		Multiplication/division facts for 3
57. Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies	Multiplication word problems	Writing & solving multiplication word problems
		Word problems and missing numbers

1.2 Fractions and decimals

Outcome	Quests	Content
58. Model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole	Fractions	Using fractions: halves, quarters & eighths
		Numerator and denominator
		Using fractions: halves, thirds & quarters
		Using fractions: thirds & sixths
		Using fractions: fifths

1.3 Money and financial mathematics

Outcome	Quests	Content
59. Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents	Money	Making purchases and calculating change

1.4 Patterns and algebra

Outcome	Quests	Content
60. Describe, continue, and create number patterns resulting from performing addition or subtraction	Number patterns	Identifying and creating number patterns

2 Measurement and Geometry

2.1 Using units of measurement

Outcome	Quests	Content
61. Measure, order and compare objects using familiar metric units of length, mass and capacity	Length, mass and capacity	Comparing, ordering and measuring length
		Measure & compare units of volume & capacity
		Using the kilogram to measure mass
62. Tell time to the minute and investigate the relationship between units of time	Telling time	Telling time to the minute
	Relationship between units of time	Understanding relationship between units of time

2.2 Shape

Outcome	Quests	Content
63. Make models of three-dimensional objects and describe key features	3D objects	Exploring prisms and nets
		Rectangular prism nets

2.3 Geometric reasoning

Outcome	Quests	Content
64. Identify angles as measures of turn and compare angle sizes in everyday situations	Identifying and comparing angles	Identifying and comparing angles
		Introducing angles

2.4 Location and transformation

Outcome	Quests	Content
65. Create and interpret simple grid maps to show position and pathways	Grid referenced maps	Interpreting and creating grid referenced maps
66. Identify symmetry in the environment	Lines of symmetry	Recognising and drawing lines of symmetry

3 Statistics and Probability

3.1 Chance

Outcome	Quests	Content
67. Conduct chance experiments, identify and describe possible outcomes and recognise variation in results	Conducting chance experiments	Conducting chance experiments

3.2 Data representation and interpretation

Outcome	Quests	Content
68. Identify questions or issues for categorical variables. Identify data sources and plan methods of data collection and recording	Data sources and collection	Introducing the statistical investigation process
		Category data
69. Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies	Collecting and organising data	Statistical investigations
		Representing and interpreting data displays
70. Interpret and compare data displays	Data displays	Comparing data displays

Year 4

1 Number and Algebra

1.1 Number and place value

Outcome	Quests	Content
71. Investigate and use the properties of odd and even numbers	Properties of odd and even numbers	Odd and even numbers
72. Recognise, represent and order numbers to at least tens of thousands	Numbers up to 5 digits	Comparing and ordering numbers up to 5 digits
		Place value up to 5 digits
		Using place value to partition: up to 5 digits
		Rounding numbers: 5 digits
73. Apply place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems	Addition and subtraction strategies	Representing problems using a bar model
		Add/subtract: efficient strategies
		Addition algorithms (without regrouping)
		Addition algorithms (with regrouping)
		Addition algorithms (with/without regrouping)
		Subtraction algorithms (without decomposing)
		Subtraction algorithms (with decomposing)
		Add/subtract: word problems
74. Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9	Investigating sequences with multiples	Investigating sequences with multiples
75. Recall multiplication facts up to 10 × 10 and related division facts	Multiplication and division facts	Multiplication/division facts for 4
		Multiplication/division facts up to 5
		Multiplication/division facts and properties
		Exploring multiplication/division for 6 up to 60
		Exploring multiplication/division for 7 up to 70
		Exploring multiplication/division for 8 up to 80

Outcome	Quests	Content
		Exploring multiplication/division for 9 up to 90
76. Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder	Mult and div strategies, no remainder	Multiplying 2-digit numbers by multiples of 100
		Dividing 3-digit numbers by 10
		Multiplication strategies: 1-digit numbers
		Using the conventions of multiplication
		Multiples and factors up to 100
		Inverse facts: multiplication and 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
		Comparisons using the language of multiplication
		Dividing a 2-digit number by a 1-digit number

1.2 Fractions and decimals

Outcome	Quests	Content
77. Investigate equivalent fractions used in contexts	Equivalent fractions	Investigating equivalent fractions
78. Count by quarters halves and thirds, including with mixed numerals. Locate and represent these fractions on a number line	Counting by fractions and mixed numerals	Counting in halves and quarters
		Counting in thirds
		Mixed numerals on the number line
79. Recognise that the place value system can be extended to tenths and hundredths. Make connections between fractions and decimal notation	Place value to hundredths	Using decimal tenths
		Using decimal hundredths
		Partitioning decimal hundredths
		Connecting fractions and decimal notation

1.3 Money and financial mathematics

Outcome	Quests	Content
80. Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies	Solving money problems	Addition and subtraction money problems

1.4 Patterns and algebra

Outcome	Quests	Content
81. Explore and describe number patterns resulting from performing multiplication	Exploring number patterns	Exploring number patterns
82. Solve word problems by using number sentences involving multiplication or division where there is no remainder	Multiplication & division word problems	Expressing equations as word problems
		Mult/div: solving word problems
83. Find unknown quantities in number sentences involving addition and subtraction and identify equivalent number sentences involving addition and subtraction	Addition & subtraction number sentences	Using number sentences to find unknown quantities

2 Measurement and Geometry

2.1 Using units of measurement

Outcome	Quests	Content
84. Use scaled instruments to measure and compare lengths, masses, capacities and temperatures	Length, mass, capacity and temperature	Metric units of length
		Length and 3D objects
		Introducing perimeter
		Temperature
		Measuring capacity in millilitres
		Measuring mass in grams and kilograms
90. Compare objects using familiar metric units of area and volume	Area and volume	Comparing area using metric units
		Using cubic cm to measure volume
85. Convert between units of time	Converting units of time	Converting units of time
86. Use 'am' and 'pm' notation and solve simple time problems	AM/PM and elapsed time	AM/PM and elapsed time problems

2.2 Shape

Outcome	Quests	Content
87. Compare the areas of regular and irregular shapes by informal means	Area of regular and irregular shapes	Measuring & comparing regular and irregular shapes
88. Compare and describe two dimensional shapes that result from combining and splitting common shapes, with and without the use of digital technologies	Composing and decomposing 2D shapes	Composing and decomposing 2D shapes

2.3 Location and transformation

Outcome	Quests	Content
90. Use simple scales, legends and directions to interpret information contained in basic maps	Scales, legends and directions	Using legends and cardinal compass directions
		Solving measurement problems
91. Create symmetrical patterns, pictures and shapes with and without digital technologies	Symmetrical patterns, pictures & shapes	Introducing transformations
		Creating and drawing summertical designs
		Recognising tessellations

2.4 Geometric reasoning

Outcome	Quests	Content
89. Compare angles and classify them as equal to, greater than, or less than, a right angle	Classifying angles	Classifying angles

3 Statistics and Probability

3.1 Chance

Outcome	Quests	Content
92. Describe possible everyday events and order their chances of occurring	Chance events	Describing the chance of events occurring
93. Identify everyday events where one cannot happen if the other happens	Non-simultaneous everyday events	Exploring non-simultaneous everyday events
94. Identify events where the chance of one will not be affected by the occurrence of the other	Independent and dependent events	Independent and dependent events

3.2 Data representation and interpretation

Outcome	Quests	Content
95. Select and trial methods for data collection, including survey questions and recording sheets	Methods of data collection	Surveys and sorting data
96. Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values	Constructing suitable data displays	Column graphs using many-to-one correspondence
		Picture graphs with many-to-one correspondence
97. Evaluate the effectiveness of different displays in illustrating data features including variability	Evaluating and comparing data displays	Evaluating and comparing data displays

Year 5

1 Number and Algebra

1.1 Number and place value

Outcome	Quests	Content
98. Identify and describe factors and multiples of whole numbers and use them to solve problems	Multiples, factors and divisibility test	Multiples and factors
		Divisibility tests
99. Use estimation and rounding to check the reasonableness of answers to calculations	Estimating and rounding	Checking with estimation and rounding
		Rounding to estimate products and quotients
100. Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies	Multiplication	Multiplication using multiples of 10
		Mult: rounding, compensating and partitioning
		Mult: doubling, halving and thirding
		Multiplying using the split method
		Multiplying by factorising
		Multiplying using an area model
		Multiplying using formal algorithms
		Multiplication word problems
101. Solve problems involving division by a one digit number, including those that result in a remainder	Division	Division using partitioning
		Extended division - no remainders or zeros
		Extended division - remainders
		Extended division - with and without remainders
		Contracted division - no remainders or zeros
		Contracted division - no remainders
		Contracted division - with and without remainders
		Division word problems
291. Use efficient mental and written strategies and apply appropriate digital technologies to solve problems	Addition and subtraction	Adding numbers of any size
		Subtracting numbers of any size
		Adding and subtracting numbers of any size

1.2 Fractions and decimals

Outcome	Quests	Content
102. Compare and order common unit fractions and locate and represent them on a number line	Comparing/ordering common unit fractions	Compare and order common unit fractions
103. Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator	Addition and subtraction: fractions	Adding and subtracting proper fractions
		Add & subtract fractions - common denominators
104. Recognise that the place value system can be extended beyond hundredths	Place value to thousandths	Place value to thousandths
105. Compare, order and represent decimals	Compare and order decimals	Compare and order decimals

1.3 Patterns and algebra

Outcome	Quests	Content
107. Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction	Number patterns - addition and subtraction	Number patterns - addition and subtraction
121. Find unknown quantities in number sentences involving multiplication and division and identify equivalent number sentences involving multiplication and division	Number sentences- mult and div	Number sentences - mult and div

2 Measurement and Geometry

2.1 Using units of measurement

Outcome	Quests	Content
108. Choose appropriate units of measurement for length, area, volume, capacity and mass	Length, area, volume, capacity and mass	Comparing and ordering metric lengths
		Selecting appropriate units for measuring
109. Calculate perimeter and area of rectangles using familiar metric units	Perimeter and area	Calculating perimeter of rectangles
		Calculating the area of rectangles
110. Compare 12- and 24-hour time systems and convert between them	24-hour time	Using 24-hour time

2.2 Shape

Outcome	Quests	Content
111. Connect three-dimensional objects with their nets and other two-dimensional representations	Nets	Nets

2.3 Location and transformation

Outcome	Quests	Content
113. Use a grid reference system to describe locations. Describe routes using landmarks and directional language	Grid reference and directional language	Grid-referenced maps
		Using landmarks and directional language
114. Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries	Transformations and symmetry	One-step transformations
		Symmetry
115. Apply the enlargement transformation to familiar two dimensional shapes and explore the properties of the resulting image compared with the original	Enlarging 2D shapes	Enlarging 2D shapes

2.4 Geometric reasoning

Outcome	Quests	Content
112. Estimate, measure and compare angles using degrees. Construct angles using a protractor	Angles	Identifying and measuring angles
		Classifying and constructing angles

3 Statistics and Probability

3.1 Chance

Outcome	Quests	Content
116. List outcomes of chance experiments involving equally likely outcomes and represent probabilities of those outcomes using fractions	Outcomes of chance experiments	Outcomes of chance experiments
117. Recognise that probabilities range from 0 to 1	Probability	Probabilities from 0 to 1

3.2 Data representation and interpretation

Outcome	Quests	Content
118. Pose questions and collect categorical or numerical data by observation or survey	Categorical and numerical data	Categorical and numerical data
119. Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies	Constructing data displays	Constructing data displays
120. Describe and interpret different data sets in context	Describing and interpreting data sets	Describing and interpreting data sets

Year 6

1 Number and Algebra

1.1 Number and place value

Outcome	Quests	Content
122. Identify and describe properties of prime, composite, square and triangular numbers	Properties of numbers	Square and triangular numbers
		Prime and composite numbers
123. Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers	Operations with whole numbers	Addition and subtraction word problems
		Multiplying and dividing by multiples of 10
		Selecting efficient mult/div strategies
		Division problems
		Multiplication and division word problems
124. Investigate everyday situations that use integers. Locate and represent these numbers on a number line	Integers	Investigating and interpreting integers

1.2 Fractions and decimals

Outcome	Quests	Content
125. Compare fractions with related denominators and locate and represent them on a number line	Fractions with related denominators	Working with fractions
126. Solve problems involving addition and subtraction of fractions with the same or related denominators	Adding and subtracting fractions	Add & subtract fractions-related denominators
		Add and subtract fractions and mixed numerals
127. Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies	Finding a fraction of a quantity	Finding a fraction of a quantity
128. Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers	Adding and subtracting decimals	Adding decimals
		Subtracting decimals
129. Multiply decimals by whole numbers and perform divisions by non-zero whole numbers where the results are terminating decimals,	Multiplying and dividing decimals	Multiplying decimals
		Dividing decimals

Outcome	Quests	Content
with and without digital technologies		
130. Multiply and divide decimals by powers of 10	Mult/div decimals by powers of 10	Mult/div decimals by powers of 10
131. Make connections between equivalent fractions, decimals and percentages	Fractions, decimals, and percentages	Representing fractions, decimals and percentages
		Fraction, decimal and percentage equivalence

1.3 Money and financial mathematics

Outcome	Quests	Content
132. Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies	Calculating percentages	Calculating percentages

1.4 Patterns and algebra

Outcome	Quests	Content
133. Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence	Number sequences	Continuing and creating number sequences
134. Explore the use of brackets and order of operations to write number sentences	Order of operations	Order of operations - no grouping symbols
		Order of operations using grouping symbols

2 Measurement and Geometry

2.1 Using units of measurement

Outcome	Quests	Content
135. Connect decimal representations to the metric system	Connecting decimals to the metric system	Decimal notation and the metric system
		Decimal representation in capacity
		Decimal representation in mass
136. Convert between common metric units of length, mass and capacity	Converting units of length/capacity/mass	Converting metric units of length
		Converting metric units of capacity
		Converting metric units of mass
137. Solve problems involving the comparison of lengths and areas using appropriate units	Length and area	Length problems
		Calculating the area of triangles
139. Interpret and use timetables	Using timetables	Using timetables

2.2 Geometric reasoning

Outcome	Quests	Content
141. Investigate, with and without digital technologies, angles on a straight line, angles at a point and vertically opposite angles. Use results to find unknown angles	Angle properties	Adjacent and vertically opposite angles

2.3 Location and transformation

Outcome	Quests	Content
142. Investigate combinations of translations, reflections and rotations, with and without the use of digital technologies	Rigid transformations	Rigid transformations
143. Introduce the Cartesian coordinate system using all four quadrants	The Cartesian plane	Locating points on the Cartesian plane

3 Statistics and Probability

3.1 Chance

Outcome	Quests	Content
144. Describe probabilities using fractions, decimals and percentages	Probability: fraction, decimal or percent	Probability as a fraction, decimal or percent
145. Conduct chance experiments with both small and large numbers of trials using appropriate digital technologies	Chance experiments	Chance experiments
146. Compare observed frequencies across experiments with expected frequencies	Frequency/fairness in chance experiments	Frequency/fairness in chance experiments
147. Interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables	Interpreting/representing/comparing data	Two-way tables
		Side-by-side column graphs
		Comparing & selecting bivariate data displays
148. Interpret secondary data presented in digital media and elsewhere	Interpreting & evaluating secondary data	Interpreting & evaluating secondary data

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