Mathletics
NSW Curriculum

Understanding Practice and Fluency (UPF)

Stage 1

November, 2021

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1 Number and Algebra

1.1 Applies place value, informally, to count, order, read and represent two- and three-digit numbers

Outcome	Quests	Content
Develop confidence with number sequences to 100 by ones from any starting point (ACMNA012)	Whole number – counting (1)	Count forwards and backwards to 100
		Find numbers before and after to 100
		Identify ordinal numbers up to 31st
Count collections to 100 by partitioning numbers using place value (ACMNA014)		Count collections 0 to 100
		Use groups of 10 to count large collections
		Identify place value up to 2 digits
		Solve problems using place value up to 2 digits
		Partition 2-digit numbers (standard)
		Partition 2-digit numbers (non-standard)
		Compare and order numbers to 100
		Round numbers up to 100
		Solve problems with 2-digit numbers on number lines
Develop confidence with number sequences from 100 by ones from any starting point (ACMNA012)	Whole number – counting (2)	Count in ones up to 1000
		Identify numbers before and after up to 1000
Recognise, model, represent and order numbers to at least 1000 (ACMNA027)	Whole number – place value (2)	Read and represent 3-digit numbers
		Compare and order numbers to 1000
Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and tens from any starting point, then moving to other sequences (ACMNA026)	Whole number – sequences (2)	Identify, describe and continue number sequences
		Count in tens with 2- and 3-digit numbers
		Find numbers 10 before and 10 after up to 1000
Group, partition and rearrange collections of up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA028)	Whole number – partition and group (2)	Identify place value in 3-digit numbers
		Count in hundreds, tens and ones
		Partition 3-digit numbers (standard)

Outcome	Quests	Content
	4	Partition 3-digit numbers (non-standard)
		Round numbers up to 1000 to the nearest 100
Count and order small collections of Australian coins and notes according to their value (ACMNA034)	Whole number – money (2)	Count and order Australian notes and coins

1.2 Uses a range of strategies and informal recording methods for addition and subtraction involving one- and two-digit numbers

Outcome	Quests	Content
Represent and solve simple addition and subtraction problems using a range of strategies, including counting on, partitioning and rearranging parts (ACMNA015)	Addition and subtraction (1)	Model and record combinations that make 5 – 9
		Model and record combinations that make 11 – 20
		Recognise and recall bonds to 10
		Add zero to a number (up to 20)
		Add and subtract by counting on/back up to 100
		Add doubles up to 20
		Add and subtract near doubles
		Find the difference between 2 numbers (to 20)
		Add and subtract using bridging to 10 up to 100
		Add using place value up to 100
		Solve addition and subtraction word problems
		Explore equality and inequality up to 10 and 20
Solve simple addition and subtraction problems using a range of efficient mental and written strategies (ACMNA030)		Use mental strategies to add and subtract (to 100)
		Add and subtract tens from a 2-digit number
		Introduce place value to add and subtract (to 200)
		Use place value to add and subtract (to 200)
		Use place value (no models) to add and subtract
		Use place value to add (crossing a 10)
		Subtract using addition

		Solve word problems with start or change unknown
	5	Add and subtract using rounding and compensating

1.3 Uses a range of mental strategies and concrete materials for multiplication and division

Outcome	Quests	Content
Skip count by twos, fives and tens starting from zero (ACMNA012)	Mult/div – skip counting (1)	Skip count by 2s
		Skip count by 5s
		Skip count by 10s
		Skip count by 2s, 5s and 10s
Recognise and represent division as grouping into equal sets (ACMNA032)		Share objects to divide
		Group objects to divide
Recognise and represent multiplication as repeated addition, groups and arrays (ACMNA031)	Mult/div – models, repeated addition (2)	Use repeated addition to multiply
		Explore arrays (no x symbol)
		Use the commutative property of multiplication
Represent division as grouping into equal sets and solve simple problems using these representations (ACMNA032)	Mult-div – equal groups (2)	Divide by sharing and grouping
		Use repeated subtraction to divide
		Solve simple multiplication problems (2, 5, 10x)

1.4 Represents and models halves, quarters and eighths

Outcome	Quests	Content
Recognise and describe one-half as one of two equal parts of a whole (ACMNA016)	Fractions and decimals (1)	Find half of a set or quantity (no symbols)
		Find half of a set or quantity (symbols)
Recognise and interpret common uses of halves, quarters and eighths of shapes and collections (ACMNA033)	Fractions and decimals (2)	Explore the meaning of fraction symbols
		Find quarters of sets or shapes (no symbols)
		Find quarters of sets or shapes (symbols)
		Find halves and quarters (no symbols)
		Find halves and quarters (symbols)
		Find eighths of objects or shapes

		Find halves, quarters and eighths of shapes

1.5 Creates, represents and continues a variety of patterns with numbers and objects

Outcome	Quests	Content
Investigate and describe number patterns formed by skip counting and patterns with objects (ACMNA018)	Patterns and algebra (1)	Explore repeating numeric patterns
		Explore repeating patterns with objects
		Relate number and object patterns
		Explore number patterns (1, 2, 5, 10)
		Additive and subtractive patterns (within 5)
		Odd and even number patterns (up to 20)
Describe patterns with numbers and identify missing elements (ACMNA035)	Patterns and algebra (2)	Number patterns (1, 2, 5, 10, 25 up to 100)
		Add or subtract patterns (within 10) up to 100
Solve problems by using number sentences for addition or subtraction (ACMNA036)		Write simple number sentences

2 Measurement and Geometry

2.1 Measures, records, compares and estimates lengths and distances using uniform informal units, metres and centimetres

Outcome	Quests	Content
Measure and compare the lengths of pairs of objects using uniform informal units (ACMMG019)	Length (1)	Explore informal units of length and distance
		Compare and order lengths using informal units

2.2 Measures, records, compares and estimates areas using uniform informal units

Outcome	Quests	Content
Measure and compare areas using uniform informal units	Area (1)	Explore, measure, compare area (informal units)
Compare and order several shapes and objects based on area using appropriate uniform informal units (ACMMG037)	Area (2)	Compare and order areas (informal units)
		Measure and estimate area using square units
		Compare and order volume/capacity (informal units)
		Compare and order volume using blocks

2.3 Measures, records, compares and estimates the masses of objects using uniform informal units

Outcome	Quests	Content
Investigate mass using a pan balance	Mass (1)	Compare and order mass using a pan balance
		Know the seasons
Use a calendar to identify the date and determine the number of days in each month (ACMMG041)		Use a calendar to identify the date
Tell time to the half-hour (ACMMG020)	Time – telling the time (1)	Tell time to the hour and half hour (analogue)
		Tell time to the hour and half hour (digital)
		Choose appropriate units of time
		Use hours to measure time
		Use minutes to measure time

Outcome	Quests	Content
		Compare hours, minutes and seconds
Tell time to the quarter-hour using the language of 'past' and 'to' (ACMMG039)		Tell time to the half and quarter hour
Use a calendar to identify the date and determine the number of days in each month (ACMMG041)	Time – using calendars (2)	Use calendars to solve simple problems

2.4 Sorts, describes, represents and recognises familiar three-dimensional objects, including cones, cubes, cylinders, spheres and prisms

Outcome	Quests	Content
Recognise and classify familiar three-dimensional objects using obvious features (ACMMG022)	Three-dimensional space (1)	Explore surfaces and faces
		Recognise and describe spheres
		Recognise and describe cones
		Recognise and describe cubes
		Recognise and describe cylinders
		Recognise, sort and name 3D objects
		Recognise and describe prisms (no formal names)
		Faces, edges, vertices and surfaces of 3D objects

2.5 Manipulates, sorts, represents, describes and explores two-dimensional shapes, including quadrilaterals, pentagons, hexagons and octagons

Outcome	Quests	Content
Recognise and classify familiar two-dimensional shapes using obvious features (ACMMG022)	Two-dimensional space (1)	Sort quadrilaterals from other 2D shapes
		Identify, sort and name octagons
		Identify, sort and name pentagons
		Identify, sort and name hexagons
		Identify and name simple 2D shapes
		Compare, describe and sort simple 2D shapes
		Identify vertical and horizontal lines
		Identify parallel lines

2.6 Represents and describes the positions of objects in everyday situations and on maps

Outcome	Quests	Content
Give and follow directions to familiar locations (ACMMG023)	Position (1)	Position using left, right and ordinal numbers
Interpret simple maps of familiar locations and identify the relative positions of key features (ACMMG044)	Position (2)	Read simple maps

3 Statistics and Probability

3.1 Gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results

Outcome	Quests	Content
Choose simple questions and gather responses (ACMSP262)	Data (1)	Ask suitable questions for data collection
		Complete tally charts
Represent data with objects and drawings where one object or drawing represents one data value and describe the displays (ACMSP263)		Represent data in a simple display
		Read simple data displays using objects
Create displays of data using lists, tables and picture graphs and interpret them (ACMSP050)		Read and interpret simple picture graphs
		Represent and read data in tables or lists
Identify practical activities and everyday events that involve chance (ACMSP047)	Chance (2)	Use basic probability language
Describe outcomes as 'likely' or 'unlikely' and identify some events as 'certain' or 'impossible' (ACMSP047)		

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