Mathletics NSW Curriculum

Understanding Practice and Fluency (UPF)







November, 2021

Mathletics

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Stage 2

1 Number and Algebra

Outcome	Quests	Content
MA2-4NA applies place value to	Numbers up to 5 digits	Identifying and counting
order, read and represent numbers	(3)	numbers up to 4 digits
of up to five digits		Reading and representing
		numbers: up to 4 digits
		Comparing and ordering
		numbers to 10 000
		Using place value to partition: up to 4 digits
		Rounding numbers: 4 digits
	Numbers up to 5 digits (4)	Comparing and ordering numbers up to 5 digits
		Reading and representing numbers: up to 5 digits
		Using place value to partition: up to 5 digits
		Rounding numbers: 5 digits
MA2-5NA uses mental and written	Add/sub up to 5 digits	Add/subtract: single digit
strategies for addition and	(3)	numbers
subtraction involving two-, three-,		Add/subtract: 2 & 3-digit using
four- and five-digit numbers		jump strategy
		Add/subtract: place value partitioning 2 & 3 digit
		Add/subtract: bridging up to 10 using 2 & 3 digit
		Add/subtract: bridging
		Add/subtract: partitioning 3- digits
		Adding and subtracting 3-digit numbers
		Add/subtract: using place value (split model)
		Add/subtract: rounding &
		compensation 2-digit
		Add/subtract: to and from 100
		Add/subtract: 1-digit numbers,
		100, 1000 & 10 000
		Add/subtract: Non-
		standard/place value
		Add/cubtractuchassing
		Aud/subtract: choosing
		Add/subtract: estimating
		Relationship between addition
		and subtraction
		Representing money values

	Add/sub up to 5 digits	Representing problems using
	(4)	a bar model
		Add/subtract: efficient
		strategies & word problems
		Addition: algorithm (without
		regrouping)
		Addition: algorithm (with
		regrouping)
		Addition: algorithm
		(with/without regrouping)
		Subtraction: algorithm
		(without decomposing)
		Subtraction: algorithm (with
		decomposing)
		Add/subtract: word problems
		Add/subtract: money
MA2 6NA uses mental and	Mult/div mental	Skip counting by 10 to 1000
informal written strategies for	strategies (3)	Skip counting by 10 to 1000
multiplication and division	strutegies (5)	Skip counting by 2 to 1000
		Skip counting by 5 to 1000
		Skip counting by 3 to 1000
		Skip counting by 4
		Multiplication/alvision facts for
		Z
		Multiplication/alvision facts for
		5
		Multiplication/division facts for 2, 5, 10
		Multiplication/division facts for 3
		Multiplication word problems
		Word problems and missing
		numbers
	Mult/div mental strategies (4)	Multiplication/division facts for 4
	5	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
		Exploring
		multiplication/division for 9 up
		to 90
		Using facts to multiply using
		2-digits

		Using facts to divide 3-digit
		numbers by 10
		Multiplication strategies using
		1 digit
		Using the conventions of
		multiplication
		Multiples and factors up to
		100
		Inverse facts
		Practising multiplication
		strategies
		Multiplying 2-digit numbers by
		a 1-digit number
		Multiplying 2-digits using
		repeated addition
		Multiplying 2-digits using
		factorising
		Selecting effective
		multiplication strategies
		Develop strategies for division
		with no remainder
		Dividing a 2-digit number by a
		1-digit number
		Remainders in division
MA2 7NA represents models and	Common fractions &	propierins
compares commonly used fractions	desimals (3)	oughters
and decimals		Numerator and denominator
		Using fractions: balves thirds
		and quarters
		Using fractions: thirds and
		sixths
		Using fractions: fifths
		Counting in thirds
		Using mixed numbers on a
		number line
	Common fractions &	Investigating fractions
	decimals (4)	Using decimal tenths
		Using decimal hundredths
		Partitioning decimal
		hundredths
		Connecting decimal fractions
		and common fractions
MA2-8NA generalises properties of	Patterns & missing	Describing, continuing &
odd and even numbers, generates	values (3)	creating number patterns
number patterns, and completes		Exploring odd and even
simple number sentences by		numbers
calculating missing values	Patterns & missing	Using number sentences to
	values (4)	find unknown quantities
		Udd and even numbers
		Investigating multiple
		sequences
		Exploring number patterns

Expressing equations as word problems
Solving word problems
involving mult and div

2 Measurement and Geometry

Outcome	Quests	Content
MA2-9MG measures, records,	Measuring length and	Comparing, ordering and
compares and estimates lengths,	temperature (3)	measuring length
distances and perimeters in metres,	Measuring length and	Using metric units to measure
centimetres and millimetres, and	temperature (4)	length
measures, compares and records		Length and 3D objects
temperatures		Introducing perimeter
		Reading temperature
MA2-10MG measures, records,	Area: square cm and m	Using formal units for area
using square centimetres and	(3)	Colving word problems
square metres	(Δ)	involving mult and div
square metres	(")	Comparing objects using
		familiar metric units
MA2-11MG measures, records,	Volume/capacity: L, mL,	Measure, order and compare
compares and estimates volumes	cubic cm (3)	units of volume
and capacities using litres, millilitres		Measuring volume
and cubic centimetres	Volume/capacity: L, mL,	Measuring capacity in
	cubic cm (4)	millilitres
MA2-12MG measures, records,	Mass: kg and g (3)	Using the kilogram to measure
compares and estimates the		mass
masses of objects using kilograms	Mass: kg and g (4)	Measuring in grams and
and grams		kilograms
MA2-13MG reads and records time	Time: minutes, hours,	Telling the time to the minute
in one-minute intervals and	Time: minutes, hours	Converting time and colving
and seconds	seconds (1)	time problems
		Using AM and PM
		Bead and interpret timetables
		Writing dates
MA2-14MG makes, compares,	Features of 3D objects	Exploring prisms and nets
sketches and names three-	(3)	Rectangular prism nets
dimensional objects, including	Features of 3D objects	Identifying prisms
prisms, pyramids, cylinders, cones	(4)	Identifying pyramids
and spheres, and describes their		Prisms and pyramids
features		Identifying cylinders
		Identifying spheres
MA2-15MG manipulates, identifies	Features of 2D shapes	Comparing and identifying
and sketches two-dimensional	(3)	two-dimensional shapes
shapes, including special		Comparing features of two-
quadrilaterals, and describes their		dimensional shapes
features		Recognising lines of symmetry
	Features of 2D shapes	Composing and decomposing
	(4)	2D shapes
		Introducing transformations
		Creating and drawing
		symmetrical designs
		Recognising tessellations
MA2-16MG identifies, describes,	Angle introduction (3)	Identifying and comparing
compares and classifies angles		angles

		Introducing angles
	Angle introduction (4)	Classifying angles
MA2-17MG uses simple maps and	Simple maps & grids (3)	Interpreting and creating
grids to represent position and		referenced maps
follow routes, including using	Simple maps & grids (4)	Using legends and reading
compass directions		maps
		Solving measurement
		problems

3 Statistics and Probability

Outcome	Quests	Content
MA2-18SP selects appropriate	Display & interpret	Introducing the statistical
methods to collect data, and	data (3)	investigation process
constructs, compares, interprets		Category data
and evaluates data displays,		Statistical investigations
including tables, picture graphs and		Representing and interpreting
column graphs		information
		Comparing data displays
	Display & interpret	Select and trial methods for
	data (4)	data collection
		Column graphs using many-
		to-one correspondence
		Picture graphs with many-to-
		one correspondence
		Evaluating and comparing
		data displays
MA2-19SP describes and compares	Explore chance events	Conducting chance
chance events in social and	(3)	experiments
experimental contexts	Explore chance events	Describing the chance of
	(4)	events occurring
		Exploring everyday events
		occurring
		Identifying the chance of
		events occurring

Stage 3

1 Number and Algebra

Outcome	Quests	Content
MA3-4NA orders, reads and	Number properties &	Recognise, represent and
represents integers of any size and	integers (5)	order numbers
describes properties of whole		Multiples and factors
numbers	Number properties &	Square and triangular
	integers (6)	numbers
		Investigating integers
		Prime and composite numbers
MA3-5NA selects and applies	Add/sub numbers of	Adding numbers of any size
appropriate strategies for addition	any size (5)	Subtracting numbers of any
and subtraction with counting		size
numbers of any size		Adding and subtracting
		numbers of any size
		Checking with estimation and
		rounding
	Add/sub numbers of	Addition and subtraction word
	any size (6)	problems
MA3-7NA compares, orders and	Mult/div & order of	Multiplication using multiples
calculates with fractions, decimals	operations (5)	of 10
and percentages		Mult: rounding, compensating
		and partitioning
		Mult: doubling, haiving and
		Multiplying using the colit
		method
		Multiplying by factorising
		Multiplying using an area
		model
		Multiplying using formal
		algorithms
		Multiplication word problems
		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 -
		remainders
		Contracted division - with and
		without remainders
		Division word problems
		Rounding to estimate products
		and quotients

	Mult/div & order of	Multiplying and dividing by
	operations (6)	multiples of 10
		Selecting efficient mult/div
		strategies
		Selecting effective strategies
		for divison
		Multiplication and division word problems
		Order of operations - no
		brackets
		Order of operations using brackets
MA3-7NA compares, orders and calculates with fractions, decimals and percentages	Fractions, decimals, percentages (5)	Compare and order common unit fractions
		Adding and subtracting proper fractions
		Add & subtract fractions -
		common denominators
		Place value using thousandths
		Compare and order decimals
	Fractions, decimals, percentages (6)	Working with fractions
		Add & subtract proper
		fractions - related denoms
		Add & subtract mixed
		numerals - related denoms
		Finding a fraction of a
		quanitity
		Adding decimals
		Subtracting decimals
		Multiplying decimals
		Dividing decimals
		Multiplying and dividing
		decimals by powers of 10
		Representing fractions,
		decimals and percentages
		Fraction, decimal and
		percentage equivalence
		Calculating percentages
MA3-8NA analyses and creates geometric and number patterns,	Number patterns (5)	Number patterns - addition and subtraction
constructs and completes number		Number sentences -
sentences, and locates points on		multiplication and division
the Cartesian plane	Number patterns (6)	Continuing and creating
		number sequences
		The Cartesian plane

2 Measurement and Geometry

Outcome	Quests	Content
MA3-9MG selects and uses the	Length, distance,	Comparing and ordering
appropriate unit and device to	perimeter (5)	metric lengths
measure lengths and distances,		Calculating perimeter of
calculates perimeters, and converts		rectangles
between units of length	Length, distance,	Decimal notation and the
	perimeter (6)	Converting standard motric
		units of length
		Length problems
MA3-10MG selects and uses the	Calculating area (5)	Selecting appropriate units for
appropriate unit to calculate greas.		measuring
including areas of squares,		Calculating the area of
rectangles and triangles		rectangles
	Calculating area (6)	Calculating the area of
	-	triangles
MA3-11MG selects and uses the	Calculating volume &	Measuring volume
measure and calculate volumes and	Calculating volume &	Volume and capacity
capacities, and converts between	capacity (6)	Decimal representation in
units of capacity		capacity
		Converting common units of
		capacity
		Volume of rectangular prisms
MA3-12MG selects and uses the appropriate unit and device to	Measure & convert mass (5)	Working with mass
measure the masses of objects, and	Measure & convert	Decimal representation in
converts between units of mass	mass (6)	mass
		Converting units of mass
MA3-13MG uses 24-hour time and	24-hour time &	Using 24-hour time
am and pm notation in real-life	timelines (5)	Understanding elapsed time
situations, and constructs timelines	24-hour time &	Using timetables
MAD 14MC identifies three	timelines (6)	Driege and a manife
dimensional objects including	objects (5)	Note
prisms and pyramids on the basis	Properties of 3D	Constructing prisms and
of their properties, and visualises.	objects (6)	pyramids
sketches and constructs them given		pyramias
drawings of different views		
MA3-15MG manipulates, classifies	Properties of 2D	Classifying 2D shapes
and draws two-dimensional	shapes (5)	Drawing 2D shapes
shapes, including equilateral,		Rigid transformations
isosceles and scalene triangles, and		Symmetry
describes their properties		Enlarging 2D shapes
	Properties of 2D	Diagonals of 2D shapes
	shapes (6)	Circles
		Rigid transformations

MA3-16MG measures and	Angles & angle	Identifying and measuring
constructs angles, and applies	relationships (5)	angles
angle relationships to find unknown		Constructing and classifying
angles		angles
	Angles & angle	Adjacent and vertically
	relationships (6)	opposite angles
MA3-17MG locates and describes	Maps & grid references	Grid-referenced maps
position on maps using a grid-	(5)	Using landmarks and
reference system		directional language

3 Statistics and Probability

Outcome	Quests	Content
MA3-18SP uses appropriate methods to collect data and constructs, interprets and evaluates data displays, including dot plots, line graphs and two-way tables	Data investigations (5)	Categorical and numerical
		data
		Constructing data displays
		Describing and interpreting
		data sets
	Data investigations (6)	Two-way tables
		Side-by-side column graphs
		Comparing & selecting
		bivariate data displays
		Interpreting and evaluating
		secondary data
MA3-19SP conducts chance experiments and assigns probabilities as values between 0 and 1 to describe their outcomes	Probability values (5)	Outcomes of chance
		experiments
		Probabilities from 0 to 1
	Probability values (6)	Frequency and fairness in
		chance experiments
		Probability as a fraction,
		decimal or percent
		Chance experiments with
		trials and sampling



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