Mathletics
New South Wales Curriculum

Skill Quests & Activities

Stage 2

August 2023

Mathletics

Contents

Stage 2

1 Number and Algebra

Representing numbers using place value (A): MA2-RN-01	
Applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands	
Skill Quests	**Skills**
Represent 4-digit numbers	Reading & representing numbers to 1000
	Counting by tens & hundreds to 1000
	Comparing & ordering numbers up to 10 000
	Partitioning numbers to 4 digits
Course Topic	**Activities Title**
A. Whole numbers	Place Value - Thousands
	Expanding Numbers
	Put in Order 1
	Ascending Order
	Descending Order
	Which is Bigger?
	Which is Smaller?
	Greater Than or Less Than 1
	Greater or Less to 100
	Place Value 3
	Partition and Rename 2
	Nearest 1000?
	Missing Numbers 1

Representing numbers using place value (B): MA2-RN-01	
Applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands	
Skill Quests	**Skills**
Represent 5-digit numbers	Reading, representing & ordering numbers to 10 000
	Rounding numbers to 10 000
	Partitioning 5-digit numbers
	Recognising numbers that are 10, 100, 1000 bigger
Course Topic	**Activities Title**
B. Moving on with whole numbers & decimals	Expanded Notation
	Numbers in Words
	Partition and Rename 3
	Rounding Numbers
	Numbers from Words to Digits 1
	Missing Numbers 2
	Decimals on the Number Line
	Decimals from Words to Digits 1
	Decimal Place Value
	Decimal Order 1

Representing numbers using place value (B): MA2-RN-02
Represents and compares decimals up to 2 decimal places using place value

Skill Quests	Skills
Represent decimals to hundredths	Introducing decimal tenths
	Introducing decimal hundredths
	Comparing & ordering decimals to hundredths
	Partitioning decimal hundredths
	Connecting decimals to common fractions
	Connecting decimals & fractions up to hundredths

Course Topic	Activities Title
B. Moving on with whole numbers & decimals	Expanded Notation
	Numbers in Words
	Partition and Rename 3
	Rounding Numbers
	Numbers from Words to Digits 1
	Expanded Notation
	Numbers in Words
	Partition and Rename 3
	Rounding Numbers
	Numbers from Words to Digits 1

Additive relations (A): MA2-AR-01
Selects and uses mental and written strategies for addition and subtraction involving 2- and 3-digit numbers

Skill Quests	Skills
Addition & subtraction to 3 digits	Adding & subtracting multiple single-digit numbers
	Bonds to 100
	Connecting addition & subtraction
	Estimating with addition & subtraction
	Add/subtract multiples of 10 to 3-digit numbers
Mental strategies to add or subtract	Adding using jump strategy to 3 digits
	Subtracting using jump strategy to 3 digits
	Add/subtract using jump strategy to 3 digits
	Adding using bridging to 10 up to 3 digits
	Subtracting using bridging to 10 up to 3 digits
	Add/subtract using bridging to 10 up to 3 digits
	Adding using split strategy to 3 digits
	Subtracting using split strategy to 3 digits
	Add/subtract using split strategy to 3 digits
	Adding using round & compensate to 3 digits
	Subtracting using round & compensate to 3 digits
	Add/subtract using round & compensate to 3 digits
Select strategies to add or subtract	Add/subtract using bar model to 3 digits
	Selecting strategies to add/subtract to 3 digits
	Using addition & subtraction with money

Course Topic	Activities Title
A. Add & subtract up to 3 digits	Add Two 2-Digit Numbers
	Adding to 2-digit numbers
	Magic Mental Addition
	Complements to 50 and 100
	Add 3 Numbers: Bonds to 100

	Compensation - Add
	Estimate Sums
	Subtract Tens
	Magic Mental Subtraction
	Column Subtraction
	2-Digit Differences: Regroup
	Repartition to Subtract
	Compensation - Subtract
	Estimate Differences
	Bump Add and Subtract
	Related Facts 1
	Bar Model Problems 1
	Bar Model Problems 2
	How much Change?
	Missing Values

Additive relations (B): MA2-AR-01
Selects and uses mental and written strategies for addition and subtraction involving 2- and 3-digit numbers

Skill Quests	Skills
Addition & subtraction to 4 digits	Add/subtract using non-standard partitioning
	Add/subtract multiples of 100, 1000 & 10 000
	Using algorithms to add (without regrouping)
	Using algorithms to add (with regrouping)
	Using algorithms to add (with & without regrouping)
	Using algorithms to subtract (without regrouping)
	Using algorithms to subtract (with regrouping)
	Rounding to estimate answers
	Choosing efficient strategies for addition
	Choosing efficient strategies for subtraction
	Adding & subtracting money

Course Topic	Activities Title
B. Moving forward with addition & subtraction	Split Add and Subtract
	Pyramid Puzzles 1
	Pyramid Puzzles 2
	Partition Puzzles 1
	Partition Puzzles 2
	Addition Properties
	Strategies for Column Addition
	Columns that Add
	Column Addition 1
	Missing Numbers

Additive relations (B): MA2-AR-02 R
Completes number sentences involving addition and subtraction by finding missing values

Skill Quests	Skills
Solve number sentences with add/subtract	Solving addition & subtraction number sentences

Course Topic	Activities Title
Teacher directed	Teacher directed

Multiplicative relations (A): MA2-MR-01
Represents and uses the structure of multiplicative relations to 10 × 10 to solve problems

Skill Quests	Skills
Number patterns	Generating/describing patterns (1, 2, 5, 10, 25)
	Generating/describing patterns (3, 4, 6, 7, 8, 9)
	Identifying number patterns
	Investigating odd & even numbers
	Understand the property of 0 & 1 in multiplication
Multiplicative facts for 2, 4, 5 & 10	Recalling multiplication & division facts of 2
	Recalling multiplication & division facts of 4
	Recalling multiplication & division facts of 5
	Recalling multiplication & division facts of 10
	Solving problems using multiplication facts

Course Topic	Activities Title
A. Multiplication & division	Counting by Tens
	Count by Fives
	Counting by Fives
	Counting by Twos
	Count by 2s, 5s and 10s
	Skip Counting
	Counting up in 4s
	Skip Counting with Coins
	Grouping in Twos
	Grouping in Fours
	Grouping in Fives
	Grouping in Tens
	Grouping in Sevens
	Grouping in Eights
	Arrays 1
	Arrays 2
	Model multiplication to 5 × 5
	Fact Families: Multiply and Divide
	Multiplication Turnarounds
	Halve it!

Multiplicative relations (B): MA2-MR-01
Represents and uses the structure of multiplicative relations to 10 × 10 to solve problems

Skill Quests	Skills
Number sequences	Investigating number sequences with multiplication
Use doubling to multiply	Use doubling to multiply by 8
Multiplication facts: 3, 6, 7, 8, 9	Multiplication & division facts for 3
	Multiplication & division facts for 6
	Multiplication & division facts for 7
	Multiplication & division facts for 8
	Multiplication & division facts for 9
	Multiplication fact families up to 10 x 10
Multiply by multiples of 10	Multiplying by a multiple of 10

Course Topic	Activities Title
	Multiples of

B. More multiplication & division	Increasing Patterns
	Decreasing Patterns
	Grouping in Threes
	Grouping in Sixes
	Grouping in Nines
	Dividing Threes
	Dividing Sixes
	Dividing Nines
	Dividing Sevens
	Dividing Eights
	Multiplication Turn-Abouts
	Related Facts 2
	Times Tables
	Mental Methods Division
	Bar model × ÷
	Grid Methods 1
	Problems: Times and Divide
	Find the Missing Number 2
	Missing Numbers: × and ÷ facts
	Multiplying by 10, 100, 1000

Multiplicative relations (B): MA2-MR-02
Completes number sentences involving multiplication and division by finding missing values

Skill Quests	Skills
Solve multiplication & division problems	Find the missing number in mult/division problems
	Multiplication & division word problems
	Multiplication & division strategies

Course Topic	Activities Title
B. More multiplication & division	Multiples of
	Increasing Patterns
	Decreasing Patterns
	Grouping in Threes
	Grouping in Sixes
	Grouping in Nines
	Dividing Threes
	Dividing Sixes
	Dividing Nines
	Dividing Sevens
	Dividing Eights
	Multiplication Turn-Abouts
	Related Facts 2
	Times Tables
	Mental Methods Division
	Bar model × ÷
	Grid Methods 1
	Problems: Times and Divide
	Find the Missing Number 2
	Missing Numbers: × and ÷ facts
	Multiplying by 10, 100, 1000

Partitioned fractions (A): MA2-PR-01

Represents and compares halves, quarters, thirds and fifths as lengths on a number line and their related fractions formed by halving (eighths, sixths and tenths)

Skill Quests	Skills
Halves, quarters, thirds & fifths	Halves, quarters & eighths
	Thirds & fifths
	Working with unit fractions

Course Topic	Activities Title
B. Moving forward with partitioned fractions	Compare Fractions 1a
	Compare Fractions 1b
	Comparing Fractions 1

Partitioned fractions (B): MA2-PR-01

Represents and compares halves, quarters, thirds and fifths as lengths on a number line and their related fractions formed by halving (eighths, sixths and tenths)

Skill Quests	Skills
Understand equivalent fractions	Modelling equivalent fractions

Course Topic	Activities Title
B. Moving forward with partitioned fractions	Compare Fractions 1a
	Compare Fractions 1b
	Comparing Fractions 1

2 Measurement & Space

<table>
<tr><td colspan="2">Geometric measure (A): MA2-GM-01
Uses grid maps and directional language to locate positions and follow routes</td></tr>
<tr><td>Skill Quests</td><td>Skills</td></tr>
<tr><td rowspan="2">Use grid maps to describe position</td><td>Interpreting maps to describe position</td></tr>
<tr><td>Locating positions on a map</td></tr>
<tr><td>Course Topic</td><td>Activities Title</td></tr>
<tr><td rowspan="4">A/B Position</td><td>Following Directions</td></tr>
<tr><td>Coordinate Meeting Place</td></tr>
<tr><td>What Direction was That?</td></tr>
<tr><td>Using a key</td></tr>
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<table>
<tr><td colspan="2">Geometric measure (B): MA2-GM-01
Uses grid maps and directional language to locate positions and follow routes</td></tr>
<tr><td>Skill Quests</td><td>Skills</td></tr>
<tr><td rowspan="2">Use maps & compass directions</td><td>Creating & interpreting grid maps</td></tr>
<tr><td>Using directional language (cardinal compass)</td></tr>
<tr><td>Course Topic</td><td>Activities Title</td></tr>
<tr><td rowspan="4">A/B Position</td><td>Following Directions</td></tr>
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<tr><td colspan="2">Geometric measure (A): MA2-GM-02
Measures and estimates lengths in metres, centimetres and millimetres</td></tr>
<tr><td>Skill Quests</td><td>Skills</td></tr>
<tr><td rowspan="4">Use metric measurements for lengths</td><td>Measuring in m, cm, mm</td></tr>
<tr><td>Selecting measures for length (m, cm, mm)</td></tr>
<tr><td>Comparing length measurements</td></tr>
<tr><td>Ordering length measurements</td></tr>
<tr><td>Course Topic</td><td>Activities Title</td></tr>
<tr><td rowspan="5">A/B Length</td><td>How Long is That?</td></tr>
<tr><td>Measuring Length</td></tr>
<tr><td>Perimeter of Shapes</td></tr>
<tr><td>Converting cm and mm</td></tr>
<tr><td>Centimetres and Metres</td></tr>
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<table>
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Measures and estimates lengths in metres, centimetres and millimetres</td></tr>
<tr><td>Skill Quests</td><td>Skills</td></tr>
<tr><td rowspan="2">Convert lengths & calculate perimeters</td><td>Converting between metric lengths</td></tr>
<tr><td>Calculating the perimeter of quadrilaterals</td></tr>
<tr><td>Course Topic</td><td>Activities Title</td></tr>
<tr><td rowspan="3">A/B Length</td><td>How Long is That?</td></tr>
<tr><td>Measuring Length</td></tr>
<tr><td>Perimeter of Shapes</td></tr>
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	Converting cm and mm
	Centimetres and Metres

Geometric measure (A): MA2-GM-03	
Identifies angles and classifies them by comparing to a right angle	
Skill Quests	**Skills**
Identify & compare angles	Identifying angles as measures of turn
Course Topic	**Activities Title**
A/B Angles	Equal Angles
	Comparing Angles
	Right Angle Relation
	What Type of Angle?
	Classifying Angles

Geometric measure (B): MA2-GM-03	
Identifies angles and classifies them by comparing to a right angle	
Skill Quests	**Skills**
Classify angles	Classifying angles
Course Topic	**Activities Title**
A/B Angles	Equal Angles
	Comparing Angles
	Right Angle Relation
	What Type of Angle?
	Classifying Angles

Two-dimensional spatial structure (A): MA2-2DS-01	
Compares two-dimensional shapes and describes their features	
Skill Quests	**Skills**
Identify features of 2D shapes	Comparing & describing features of quadrilaterals
	Identifying, classifying & sorting 2D shapes
Course Topic	**Activities Title**
A/B 2D shape & area	What Line am I?
	Shapes
	Collect the Shapes
	Collect More Shapes
	Collect the Shapes 2
	Area of Shapes
	Equal Areas

Two-dimensional spatial structure (B): MA2-2DS-01	
Compares two-dimensional shapes and describes their features	
Skill Quests	**Skills**
Identify shapes in composite polygons	Creating shapes from combining & splitting shapes
Course Topic	**Activities Title**
Teacher directed	Teacher directed

Two-dimensional spatial structure (A): MA2-2DS-02
Performs transformations by combining and splitting two-dimensional shapes

Skill Quests	Skills
Perform transformations	Transforming shapes by translation & reflections
	Recognising line symmetry
	Transforming shapes by rotation

Course Topic	Activities Title
A/B Transformations	Symmetry
	Symmetry or Not?
	Flip, Slide, Turn
	Transformations
	Rotational Symmetry

Two-dimensional spatial structure (B): MA2-2DS-02
Performs transformations by combining and splitting two-dimensional shapes

Skill Quests	Skills
Tessellations	Creating symmetrical patterns & shapes

Course Topic	Activities Title
A/B Transformations	Symmetry
	Symmetry or Not?
	Flip, Slide, Turn
	Transformations
	Rotational Symmetry

Two-dimensional spatial structure (A): MA2-2DS-03
Estimates, measures and compares areas using square centimetres and square metres

Skill Quests	Skills
Calculate area of a rectangle	Using cm^2 to measure areas of rectangles
	Using m^2 to measure areas of rectangles

Course Topic	Activities Title
A/B 2D shape & area	What Line am I?
	Shapes
	Collect the Shapes
	Collect More Shapes
	Collect the Shapes 2
	Area of Shapes
	Equal Areas

Two-dimensional spatial structure (B): MA2-2DS-03
Estimates, measures and compares areas using square centimetres and square metres

Skill Quests	Skills
Calculate area using grid structure	Measuring area of shapes using the grid structure
	Comparing surfaces using metric units of area

Course Topic	Activities Title
A/B 2D shape & area	What Line am I?
	Shapes
	Collect the Shapes
	Collect More Shapes
	Collect the Shapes 2

Area of Shapes	
Equal Areas	

Three-dimensional spatial structure (A): MA2-3DS-01
Makes and sketches models and nets of three-dimensional objects including prisms and pyramids

Skill Quests	Skills
Identify prisms, pyramids & cylinders	Identifying prisms
	Identifying pyramids & cylinders
	Describing key features of prisms & pyramids
	Making models of prisms & pyramids
	Introducing nets of prisms
Course Topic	**Activities Title**
A. 3D objects	Prisms and Pyramids
	Collect the Objects
	Match the Object

Three-dimensional spatial structure (B): MA2-3DS-01
Makes and sketches models and nets of three-dimensional objects including prisms and pyramids

Skill Quests	Skills
Connect 3D objects with nets	Representing & drawing 3D objects
Course Topic	**Activities Title**
B. Moving forward with 3d objects	Relate Shapes and Solids
	Faces, Edges, and Vertices 1
	How Many Faces?
	How many Edges?
	How many Vertices?
	Faces, Edges and Vertices
	Naming 3D Objects

Three-dimensional spatial structure (A): MA2-3DS-02
Estimates, measures and compares capacities (internal volumes) using litres, millilitres and volumes using cubic centimetres

Skill Quests	Skills
Measure capacity & volume	Introducing a formal measure of capacity (litres)
	Measuring & comparing volumes using cubic blocks
Course Topic	**Activities Title**
A. Capacity	How Full?
	Which Holds More?
	Filling Fast!
	Comparing Volume

Three-dimensional spatial structure (B): MA2-3DS-02	
Estimates, measures and compares capacities (internal volumes) using litres, millilitres and volumes using cubic centimetres	
Skill Quests	**Skills**
Read scaled instruments in L & mL	Using scaled instruments for capacities (L & mL)
	Select appropriate measures for capacity (L & mL)
Course Topic	**Activities Title**
B. Moving on with capacity	Using a Litre
	Millilitres and Litres
	Litre Conversions
	How many Blocks?
	Volume of Solids and Prisms - 1 cm3 blocks

Non spatial measure (A): MA2-NSM-01	
Estimates, measures and compares the masses of objects using kilograms and grams	
Skill Quests	**Skills**
Measure mass in kg & g	Introducing a formal measure for weight (kg)
Course Topic	**Activities Title**
A. Non spatial measure: Mass & Time	Everyday Mass
	Half Hour Times
	Five Minute Times
	What's the Temperature (Celsius)?

Non spatial measure (B): MA2-NSM-01	
Estimates, measures and compares the masses of objects using kilograms and grams	
Skill Quests	**Skills**
Read scaled instruments in kg & g	Measuring mass in grams
	Measuring & comparing mass in g & kg
Course Topic	**Activities Title**
B. More non spatial measure: Mass & Time	How Heavy?
	Ordering Mass (g)
	What is the Time?
	Quarter To and Quarter Past

Non spatial measure (A): MA2-NSM-02	
Represents and interprets analogue and digital time in hours, minutes and seconds	
Skill Quests	**Skills**
Represent time using analogue displays	Representing & reading analogue time displays
Course Topic	**Activities Title**
A. Non spatial measure: Mass & Time	Everyday Mass
	Half Hour Times
	Five Minute Times
	What's the Temperature (Celsius)?

Non spatial measure (B): MA2-NSM-02	
Represents and interprets analogue and digital time in hours, minutes and seconds	
Skill Quests	**Skills**
Represent time using digital displays	Representing & reading digital time displays
	Using AM and PM notation
Course Topic	**Activities Title**
B. More non spatial measure: Mass & Time	How Heavy?
	Ordering Mass (g)
	What is the Time?
	Quarter To and Quarter Past

3 Statistics & Probability

Data (A): MA2-DATA-01	
Collects discrete data and constructs graphs using a given scale	
Skill Quests	**Skills**
Collect & organise discrete data	Posing questions & collecting discrete data
	Organising & displaying discrete data using graphs
Course Topic	**Activities Title**
A. Data	Sorting Data
	Column Graphs
	Picture Graphs: Single-Unit Scale
	Pictographs
	Tallies

Data (B): MA2-DATA-01	
Select and trial methods for data collection	
Skill Quests	**Skills**
Teacher directed	Teacher directed
Course Topic	**Activities Title**
B. Moving forward with data	Picture Graphs: with scale & half symbols
	Reading from a Column Graph
	Making Picture Graphs: With Scale

Data (A): MA2-DATA-02	
Interprets data in tables, dot plots and column graphs	
Skill Quests	**Skills**
Read tables, dot plots & column graphs	Interpreting tables & column graphs
	Comparing data displays
Course Topic	**Activities Title**
A. Data	Sorting Data
	Column Graphs
	Picture Graphs: Single-Unit Scale
	Pictographs
	Tallies

Data (B): MA2-DATA-02	
Construct and interpret data displays with many-to-one scales	
Skill Quests	**Skills**
Interpret data with many-to-one scales	Interpreting displays with many-to-one scales
Course Topic	**Activities Title**
B. Moving forward with data	Picture Graphs: with scale & half symbols
	Reading from a Column Graph
	Making Picture Graphs: With Scale

Chance (A): MA2-CHAN-01	
Records and compares the results of chance experiments	
Skill Quests	**Skills**
Chance concepts	Identifying outcomes from chance experiments
Course Topic	**Activities Title**
A. Chance	Most Likely and Least Likely
	How many Combinations?
	Will it Happen?

Chance (B): MA2-CHAN-01	
Records and compares the results of chance experiments	
Skill Quests	**Skills**
Describe the likelihood of outcomes	Using the language of probability
	Identifying events affected by previous events
Course Topic	**Activities Title**
B. More chance	Introductory probability
	Chance Gauge
	What are the Chances?

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