

Mathletics NSW Syllabus

Scope & Sequence



Stage 2, Year 4

Mathletics

Learning sequence	Term one	Term two	Term three	Term four
LS 1	Number and Algebra Big idea: The number system extends infinitely to very large and very small numbers Numbers to 1 million <ul style="list-style-type: none"> Apply place value to hundreds-of-thousands Read, represent and order numbers to 1 000 000 Partition 6-digit numbers Round to nearest 1 000, 10 000, and 100 000 	Number and Algebra Big idea: The number system extends infinitely to very large and very small numbers Introducing decimals <ul style="list-style-type: none"> Express decimals as tenths and hundredths Locate, compare & order tenths and hundredths Make connections between fractions and decimal notation 	Number and Algebra Big idea: The number system extends infinitely to very large and very small numbers Patterns <ul style="list-style-type: none"> Place value review of Base 10 system Patterns Algebra 	Number and Algebra Big idea: The number system extends infinitely to very large and very small numbers Number review Review: <ul style="list-style-type: none"> Term 1, Learning Sequence 1 Term 2, Learning Sequence 1 Term 3, Learning Sequence 1
	Number and Algebra Big idea: Addition and subtraction problems can be solved by using a variety of strategies Addition and subtraction <ul style="list-style-type: none"> Use quantity values and non-standard partitioning Use algorithms with and without regrouping Choose appropriate strategies Estimate to check solutions 	Number and Algebra Big idea: Multiplicative thinking involves flexible use of multiplication and division concepts, strategies and representations Multiplication and division <ul style="list-style-type: none"> Identify and continue number patterns with multiples Apply commutative and associative properties of multiplication Use flexible partitioning Recall multiplication facts to 10x10 	Measurement and Space Big idea: Understanding relationships between the properties of 2D shapes helps visualise and organise spaces in the world 2D shape properties <ul style="list-style-type: none"> Review properties of 2D shapes Combine common 2D shapes to form other shapes Split other shapes into two or more common shapes 	Number and Algebra Big idea: Fractions represent multiple ideas and can be represented in different ways Fractions applications <ul style="list-style-type: none"> Add and subtract fractions with the same or related denominators Solve word problems involving fractions
LS 3	Measurement and Space Big idea: What needs to be measured determines the unit of measurement Time <ul style="list-style-type: none"> Read and set time on digital devices Determine time remaining Use am and pm notation Relate analogue and digital time 	Measurement and Space Big idea: Visual representations help to understand aspects of the world Position <ul style="list-style-type: none"> Create and interpret grid maps Use compass directions (N, S, E, W) Describe journeys using directional language 	Measurement and Space Number and Algebra Big idea: Multiplicative thinking involves flexible use of multiplication and division concepts, strategies, and representations Linking multiplication to area and volume <ul style="list-style-type: none"> Connect grouping to arrays and area models Estimate, measure & record area in cm² (using grid overlays) and m² Sketch prisms on isometric grids Create models using connecting cubes 	Statistics and Probability Big idea: Questions can be asked and answered by collecting and interpreting data Chance <ul style="list-style-type: none"> Use the terms equally likely, likely and unlikely Compare the likelihood of obtaining outcomes Identify when events are affected by previous events
	Number and Algebra Big idea: Fractions represent multiple ideas and can be represented in different ways Fractions <ul style="list-style-type: none"> Represent equivalence Concrete materials, diagrams and number lines Compare partitioned fractions with same-size whole Regroup fractional parts beyond one 	Measurement and Space Number and Algebra Big idea: What needs to be measured determines the unit of measurement 3D objects and capacity <ul style="list-style-type: none"> Identify features of prisms, pyramids and cylinders: faces, edges, vertices, curved surfaces Sketch 3D objects from different views Measure and record capacity using mL and L Estimate the capacity of containers 	Measurement and Space Number and Algebra Big idea: What needs to be measured determines the unit of measurement Length and mass <ul style="list-style-type: none"> Estimate, measure and compare lengths Identify and measure perimeter Convert between cm and m, and m and cm Record lengths using decimals to 2 places Record and compare mass using g and Kg 	Number and Algebra Big idea: Multiplicative thinking involves flexible use of multiplication and division concepts, strategies, and representations Multiplication and division problems <ul style="list-style-type: none"> Use flexible strategies to solve word problems involving multiplication and division
LS 5	Statistics and Probability Big idea: Questions can be asked and answered by collecting and interpreting data Data <ul style="list-style-type: none"> Create, refine and conduct surveys to collect categorical or numerical data Use many-to-one scales Create column graphs Interpret and evaluate effectiveness of various data displays 	Measurement and Space Number and Algebra Big idea: Angles are the primary structural component of many shapes Angles <ul style="list-style-type: none"> Compare angles to a right angle Describe angles in comparison to quarter-turns 	Number and Algebra Big idea: Addition and subtraction problems can be solved by using a variety of strategies Addition and subtraction problems <ul style="list-style-type: none"> Use flexible strategies to solve word problems involving addition and subtraction Use addition and subtraction to solve problems involving money and budgeting 	Measurement and Space Big idea: Shapes encountered in daily life can be classified by their attributes Transformations of 2D shapes <ul style="list-style-type: none"> Create and record tessellating designs using triangles or quadrilaterals: reflecting, translating and rotating Apply and describe amounts of rotation: half, quarter and three-quarter-turns

Outcomes	Focus	Content	Located
MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands	Representing numbers using place value B	Whole numbers: Order numbers in the thousands	Term 1 LS 1 Term 2 LS 4 Term 4 LS 1
		Whole numbers: Apply place value to partition, regroup and rename numbers up to 6 digits	Term 1 LS 1, 2 Term 2 LS 2 Term 3 LS 1, 5 Term 4 LS 1, 4
		Whole numbers: Recognise and represent numbers that are 10, 100 or 1000 times as large	Term 1 LS 1, 2 Term 2 LS 1, 2 Term 3 LS 1, 5 Term 4 LS 1, 4
MA2-RN-02 represents and compares decimals up to 2 decimal places using place value		Decimals: Extend the application of the place value system from whole numbers to tenths and hundredths	Term 1 LS 4 Term 2 LS 1 Term 3 LS 1, 4 Term 4 LS 1
		Decimals: Make connections between fractions and decimal notation	Term 1 LS 4 Term 2 LS 1 Term 3 LS 1 Term 4 LS 1, 2
MA2-AR-01 selects and uses mental and written strategies for addition and subtraction involving 2- and 3-digit numbers	Additive relations B	Partition, rearrange and regroup numbers to at least 1000 to solve additive problems	Term 1 LS 2 Term 2 LS 1 Term 3 LS 5 Term 4 LS 1
		Apply addition and subtraction to familiar contexts, including money and budgeting	Term 3 LS 5
MA2-AR-02 completes number sentences involving addition and subtraction by finding missing values		Complete number sentences involving additive relations to find unknown quantities	Term 3 LS 5
MA2-MR-01 represents and uses the structure of multiplicative relations to 10×10 to solve problems	Multiplicative relations B	Investigate number sequences involving related multiples	Term 1 LS 1 Term 2 LS 2 Term 3 LS 1 Term 4 LS 4
		Use known number facts and strategies	Term 1 LS 1 Term 2 LS 2 Term 3 LS 1 Term 4 LS 4
		Use the structure of the area model to represent multiplication and division	Term 2 LS 2 Term 3 LS 3 Term 4 LS 4
		Use number properties to find related multiplication facts	Term 2 LS 2 Term 3 LS 3 Term 4 LS 4
		Operate with multiples of 10	Term 1 LS 1 Term 2 LS 2 Term 3 LS 3 Term 4 LS 4
MA2-MR-02 completes number sentences involving multiplication and division by finding missing values	Multiplicative relations B	Represent and solve word problems with number sentences involving multiplication or division	Term 2 LS 2 Term 3 LS 3 Term 4 LS 4

Outcomes	Focus	Content	Located
MA2-PF-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)	Partitioned fractions B	Model equivalent fractions as lengths	Term 1 LS 4 Term 4 LS 2
		Represent fractional quantities equal to and greater than one	Term 1 LS 4 Term 2 LS 5 Term 4 LS 2
MA2-GM-01 uses grid maps and directional language to locate positions and follow routes	Geometric measure B	Position: Create and interpret grid maps	Term 2 LS 3
		Position: Use directional language and describe routes with grid maps	Term 2 LS 3
MA2-GM-02 measures and estimates lengths in metres, centimetres and millimetres		Length: Use scaled instruments to measure and compare lengths	Term 1 LS 4 Term 3 LS 4 Term 4 LS 2
MA2-GM-03 identifies angles and classifies them by comparing to a right angle	Geometric measure B	Angles: Compare angles to a right angle	Term 2 LS 5 Term 4 LS 5
MA2-2DS-01 compares two-dimensional shapes and describes their features	Two-dimensional spatial structure B	2D shapes: Create two-dimensional shapes that result from combining and splitting common shapes	Term 1 LS 3 Term 3 LS 2 Term 4 LS 5
		2D shapes: Create symmetrical patterns and shapes	Term 3 LS 2 Term 4 LS 5
MA2-2DS-02 performs transformations by combining and splitting two-dimensional shapes	Two-dimensional spatial structure B	Area: Measure the areas of shapes using the grid structure	Term 3 LS 2, 3 Term 4 LS 5
		Area: Compare surfaces using familiar metric units of area	Term 3 LS 2, 3 Term 4 LS 5
MA2-3DS-01 makes and sketches models and nets of three-dimensional objects including prisms and pyramids	Three-dimensional spatial structure B	3D objects: Connect three-dimensional objects and two-dimensional representations	Term 2 LS 3, 4 Term 3 LS 3
		Volume: Use scaled instruments to measure and compare capacities (internal volumes)	Term 2 LS 4
MA2-3DS-02 estimates, measures and compares capacities (internal volumes) using litres, millilitres and volumes using cubic centimetres			
MA2-NSM-01 estimates, measures and compares the masses of objects using kilograms and grams	Non-spatial measure B	Mass: Use scaled instruments to measure and compare masses	Term 3 LS 4
		Time: Represent and interpret digital time displays	Term 1 LS 3
MA2-NSM-02 represents and interprets analog and digital time in hours, minutes and second		Time: Use am and pm notation	Term 1 LS 3
MA2-DATA-01 collects discrete data and constructs graphs using a given scale	Data B	Select and trial methods for data collection	Term 1 LS 5 Term 4 LS 3
		Construct and interpret data displays with many-to-one scales	Term 1 LS 5 Term 4 LS 3
MA2-DATA-02 interprets data in tables, dot plots and column graphs			
MA2-CHAN-01 records and compares the results of chance experiments	Chance B	Describe the likelihood of outcomes of chance events	Term 4 LS 3
		Identify when events are affected by previous events	Term 4 LS 3

LS & Topic	Outcomes	Focus	Content	New Courses	Activities (courses)	Skill Quests	Challenges	Ebooks
<p>LS 1</p> <p>Big idea The number system extends infinitely to very large and very small numbers</p> <p>Topic Numbers to 1 million</p>	<p>MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands</p> <p>MA2-MR-01 represents and uses the structure of multiplicative relations to 10×10 to solve problems</p>	<p>Representing numbers using place value B</p> <p>Multiplicative relations B</p>	<ul style="list-style-type: none"> Whole numbers: Order numbers in the thousands Whole numbers: Apply place value to partition, regroup and rename numbers up to 6 digits Whole numbers: Recognise and represent numbers that are 10, 100 or 1000 times as large Investigate number sequences involving related multiples Use known number facts and strategies Operate with multiples of 10 	<p>Y4 Representing numbers using place value</p> <ul style="list-style-type: none"> Numbers to at least 100 000s Place value Partitioning Using number lines Rounding Compare numbers Order numbers 	<p>Represent numbers using place value (B)</p> <ul style="list-style-type: none"> Expanded Notation Numbers in Words Partition and Rename 3 Rounding Numbers Numbers from Words to Digits 1 Missing Numbers 2 	<p>Numbers to 100 000</p> <ul style="list-style-type: none"> Reading, representing & ordering numbers to 10 000 Rounding numbers to 10 000 Partitioning 5-digit numbers 	<p>Number & Algebra, Whole Number 2-4</p> <ul style="list-style-type: none"> Swap the digits (DOK 2) <p>Number & Algebra, Whole Number 3-5</p> <ul style="list-style-type: none"> Exploring a 5-digit number (DOK 2) Target numbers! (DOK 3) Too much information (DOK 3) <p>Number & Algebra, Whole Number 4-6</p> <ul style="list-style-type: none"> Mysterious numbers (DOK 2) Clued in (DOK 2) Big number split (DOK 3) 	<p>(Y5-E) Reading and Understanding Whole Numbers</p> <ul style="list-style-type: none"> Looking at whole numbers – read and write numbers to 999 999 pp 1–2 Looking at whole numbers – order numbers to 999 999 pp 3–4 Place value of whole numbers – place value to 6 digits pp 13–14
<p>LS 2</p> <p>Big idea Addition and subtraction problems can be solved by using a variety of strategies</p> <p>Topic Addition and subtraction</p>	<p>MA2-AR-01 selects and uses mental and written strategies for addition and subtraction involving 2- and 3-digit numbers</p> <p>MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands</p>	<p>Additive relations B</p> <p>Representing numbers using place value B</p>	<ul style="list-style-type: none"> Partition, rearrange and regroup numbers to at least 1000 to solve additive problems Whole numbers: Apply place value to partition, regroup and rename numbers up to 6 digits Whole numbers: Recognise and represent numbers that are 10, 100 or 1000 times as large 		<p>Additive relations (B)</p> <ul style="list-style-type: none"> Magic Mental Addition Magic Mental Subtraction Compensation – Add Compensation – Subtract Split Add and Subtract Partition Puzzles 1 Partition Puzzles 2 Addition Properties Strategies for Column Addition Columns that Add Column Addition 1 	<p>Addition & subtraction to 4 digits</p> <ul style="list-style-type: none"> 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 <p>Solve number sentences with add/subtract</p> <ul style="list-style-type: none"> Solving addition & subtraction number sentences 	<p>Number & Algebra, Addition & Subtraction 2-4</p> <ul style="list-style-type: none"> Choosing chores (DOK 4) <p>Number & Algebra, Addition & Subtraction 3-5</p> <ul style="list-style-type: none"> Missing numbers! (DOK 3) All boxed up (DOK 2) Navigate the number maze (DOK 3) Shuffle those numbers! (DOK 3) Explore an addition game (DOK 3) 	<p>(Y5-E) Addition and Subtraction</p> <ul style="list-style-type: none"> Addition mental strategies – jump strategy pp 1–2 Addition mental strategies – split strategy pp 3–4 Addition mental strategies – compensation strategy pp 5–8 Subtraction mental strategies – jump strategy pp 9–10 Subtraction mental strategies – split strategy pp 11–12 Subtraction mental strategies – compensation strategy pp 13–17

NSW New Syllabus (2023) S2 Year 4

LS & Topic	Outcomes	Focus	Content	New Courses	Activities (courses)	Skill Quests	Challenges	Ebooks
LS 3 Big idea What needs to be measured determines the unit of measurement Topic Time	MA2-NSM-02 represents and interprets analog and digital time in hours, minutes and second MA2-2DS-01 compares two-dimensional shapes and describes their features	Non-spatial measure B Two-dimensional spatial structure B	<ul style="list-style-type: none"> Time: Represent and interpret digital time displays Time: Use am and pm notation 2D shapes: Create two-dimensional shapes that result from combining and splitting common shapes 		Non-spatial measure: mass & time (B) <ul style="list-style-type: none"> Quarter To and Quarter Past What is the Time? 	Represent time using digital displays <ul style="list-style-type: none"> Representing & reading digital time displays Using AM and PM notation 	Measurement Time 2-4 <ul style="list-style-type: none"> Time for T.V. (DOK 3) Mystery birthdate (DOK 3) Measurement, Time 3-5 <ul style="list-style-type: none"> Comparing different measures of time (DOK 2) The mysteries of time (DOK 2) 	(Y4-D) Time <ul style="list-style-type: none"> Telling time – digital pp 3–6 Measuring time – am and pm p 7
LS 4 Big idea Fractions represent multiple ideas and can be represented in different ways Topic Fractions	MA2-PF-01 represents and compares halves, quarters, thirds and fifths as lengths on a number line and their related fractions ... MA2-RN-02 represents and compares decimals up to 2 decimal places using place value MA2-GM-02 measures and estimates lengths in metres, centimetres and millimetres	Partitioned fractions B Representing numbers using place value B Geometric measure B	<ul style="list-style-type: none"> Model equivalent fractions as lengths Represent fractional quantities equal to and greater than one Decimals: Make connections between fractions and decimal notation Length: Use scaled instruments to measure and compare lengths 	Y4 Partitioned Fractions <ul style="list-style-type: none"> Unit fractions Proper fractions Equivalence Mixed numbers and improper fractions 	Partitioned fractions (B) <ul style="list-style-type: none"> Compare Fractions 1a Compare Fractions 1b Comparing Fractions 1 Equivalent Fraction Wall 1 	Unit fractions <ul style="list-style-type: none"> Working with unit fractions Understand equivalent fractions <ul style="list-style-type: none"> Modelling equivalent fractions 	Number & Algebra, Fractions 2-4 <ul style="list-style-type: none"> Decorate using fractions (DOK 2) Number & Algebra, Fractions 3-5 <ul style="list-style-type: none"> Running a fraction of the race (DOK 2) 	(Y4-D) Fractions <ul style="list-style-type: none"> Types of fractions – equivalent fractions pp 12–14
LS 5 Big idea Questions can be asked and answered by collecting and interpreting data Topic Data	MA2-DATA-01 collects discrete data and constructs graphs using a given scale MA2-DATA-02 interprets data in tables, dot plots and column graphs	Data B	<ul style="list-style-type: none"> Select and trial methods for data collection Construct and interpret data displays with many-to-one scales 		Data (B) <ul style="list-style-type: none"> Picture Graphs: with scale & half symbols Reading from a Column Graph Making Picture Graphs: With Scale 	Data collection & display <ul style="list-style-type: none"> Organising & displaying discrete data using graphs Interpret data with many-to-one scales <ul style="list-style-type: none"> Interpreting displays with many-to-one scales 	Statistics & data 2-4 <ul style="list-style-type: none"> Fruitful investigation (DOK 3) Statistics & data 3-5 <ul style="list-style-type: none"> Watch out! (DOK 2) Create a picture graph (DOK 3) 	(Y4-D) Chance and Data <ul style="list-style-type: none"> Data – asking questions and collecting data pp 12–13 Data – tallies p 14 Data – column graphs pp 15–16 Data – picture graphs pp 17–18

LS & Topic	Outcomes	Focus	Content	New Courses	Activities (courses)	Skill Quests	Challenges	Ebooks
<p>LS 1</p> <p>Big idea The number system extends infinitely to very large and very small numbers</p> <p>Topic Introducing decimals</p>	<p>MA2-RN-02 represents and compares decimals up to 2 decimal places using place value</p> <p>MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands</p> <p>MA2-AR-01 selects and uses mental and written strategies for addition and subtraction involving 2- and 3-digit numbers</p>	<p>Representing numbers using place value B</p> <p>Additive relations B</p>	<ul style="list-style-type: none"> Decimals: Extend the application of the place value system from whole numbers to tenths and hundredths Decimals: Make connections between fractions and decimal notation Whole numbers: Recognise and represent numbers that are 10, 100 or 1000 times as large Partition, rearrange and regroup numbers to at least 1000 to solve additive problems 	<p>Y4 Decimals: Representing numbers</p> <ul style="list-style-type: none"> Decimal tenths Decimal hundredths Place value to hundredths 10 or 100 times larger or smaller Partitioning decimals Tenths on the number line Hundredths on the number line The nearest whole number Fractions and decimals 	<p>Represent numbers using place value (B)</p> <ul style="list-style-type: none"> Decimals on the Number Line Decimals from Words to Digits 1 Decimal Place Value Decimal Order 1 	<p>Represent decimals to hundredths</p> <ul style="list-style-type: none"> 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 		<p>(Y5-E) Fractions, Decimals, and Percentages</p> <ul style="list-style-type: none"> Fractions, decimals and percentages – tenths p 17 Fractions, decimals and percentages – tenths and hundredths pp 18–19
<p>LS 2</p> <p>Big idea Multiplicative thinking involves flexible use of multiplication and division concepts, strategies and representations</p> <p>Topic Multiplication and division</p>	<p>MA2-MR-01 represents and uses the structure of multiplicative relations to 10×10 to solve problems</p> <p>MA2-MR-02 completes number sentences involving multiplication and division by finding missing values</p> <p>MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands</p>	<p>Multiplicative relations B</p> <p>Representing numbers using place value B</p>	<ul style="list-style-type: none"> Investigate number sequences involving related multiples Use known number facts and strategies Use the structure of the area model to represent multiplication and division Use number properties to find related multiplication facts Operate with multiples of 10 Represent and solve word problems with number sentences involving multiplication or division Whole numbers: Apply place value to partition, regroup and rename numbers up to 6 digits Whole numbers: Recognise and represent numbers that are 10, 100 or 1000 times as large 		<p>Multiplicative relations: multiply (B)</p> <ul style="list-style-type: none"> Multiples of Increasing Patterns Decreasing Patterns Grouping in Threes Grouping in Sixes Grouping in Sevens Grouping in Nines Multiplication Turn-Abouts Related Facts 2 Times Tables Bar model $\times \div$ Grid Methods 1 Find the Missing Number 2 Missing Numbers: \times and \div facts <p>Multiplicative relations: divide (B)</p> <ul style="list-style-type: none"> Dividing Threes Dividing Sixes Dividing Nines Dividing Sevens Dividing Eights Mental Methods Division 	<p>Number sequences</p> <ul style="list-style-type: none"> Investigating number sequences with multiplication <p>Use doubling to multiply</p> <ul style="list-style-type: none"> Use doubling to multiply by 8 <p>Multiplication facts: 3, 6, 7, 8, 9</p> <ul style="list-style-type: none"> 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 10×10 	<p>Number & Algebra, Multiplication & Division 4–6</p> <ul style="list-style-type: none"> Multiple relationships (DOK 2) Steps to success (DOK 2) <p>Number & Algebra, Patterns 4–6</p> <ul style="list-style-type: none"> Multiple patterns (DOK 3) 	<p>(Y4-D) Multiplication and Division</p> <ul style="list-style-type: none"> Multiplication facts – 8 times table p 5 Multiplication facts – 3 and 6 times tables pp 6–7 Using known facts – 9 times table p 8 Using known facts – 7 times table p 9 Mental multiplication strategies – multiplying by 10 and 100 - pp 13–14 Mental division strategies – dividing by 10 and 100 p 29

NSW New Syllabus (2023) S2 Year 4

LS & Topic	Outcomes	Focus	Content	New Courses	Activities (courses)	Skill Quests	Challenges	Ebooks
LS 3 Big idea Visual representations help to understand aspects of the world Topic Position	MA2-GM-01 uses grid maps and directional language to locate positions and follow routes MA2-3DS-01 makes and sketches models and nets of three-dimensional objects including prisms and pyramids	Geometric measure B Three-dimensional spatial structure B	<ul style="list-style-type: none"> Position: Create and interpret grid maps Position: Use directional language and describe routes with grid maps 3D objects: Connect three-dimensional objects and two-dimensional representations 		Geometric measure: position (B) <ul style="list-style-type: none"> Following Directions Coordinate Meeting Place What Direction was That? Using a key 	Use maps & compass directions <ul style="list-style-type: none"> Creating & interpreting grid maps Using directional language (cardinal compass) 	Geometry, Symmetry, Transformation & Location 3-5 <ul style="list-style-type: none"> Map the way (DOK 2) Routes on a map (DOK 3) Program the robot (DOK 3) Geometry, Symmetry, Transformation & Location 4-6 <ul style="list-style-type: none"> A journey back in time (DOK 2) Island towns (DOK 3) Which way? (DOK 3) 	(Y4-D) Space, Shape and Position <ul style="list-style-type: none"> Position – grids and coordinates p 21 Position – using a map p 22 Position – compass directions pp 23–24 Year 5 Series E Position Directions – using a compass pp 13–14 Directions – maps pp 15–16
LS 4 Big idea What needs to be measured determines the unit of measurement Topic 3D objects and capacity	MA2-3DS-01 makes and sketches models and nets of three-dimensional objects including prisms and pyramids MA2-3DS-02 estimates, measures and compares capacities (internal volumes) using litres, millilitres and volumes using cubic centimetres MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands	Three-dimensional spatial structure B Representing numbers using place value B	<ul style="list-style-type: none"> 3D objects: Connect three-dimensional objects and two-dimensional representations Volume: Use scaled instruments to measure and compare capacities (internal volumes) Whole numbers: Order numbers in the thousands 		3D spatial structure: 3D objects (B) <ul style="list-style-type: none"> 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 3D spatial structure: capacity (B) <ul style="list-style-type: none"> Using a Litre Millilitres and Litres Litre Conversions 	Connect 3D objects with nets <ul style="list-style-type: none"> Representing & drawing 3D objects Read scaled instruments in L & mL <ul style="list-style-type: none"> Using scaled instruments for capacities (L & mL) Select appropriate measures for capacity (L & mL) 	Geometry, 3D Shapes 2-4 <ul style="list-style-type: none"> Faces, edges and vertices (DOK 3) Geometry, 3D Shapes 3-5 <ul style="list-style-type: none"> Net animals (DOK 2) 	(Y4-D) Space, Shape and Position <ul style="list-style-type: none"> Investigating 3D shapes – properties of shapes p 10 Investigating 3D shapes – drawing 3D shapes pp 11–12 Investigating 3D shapes – different viewpoints p 13 Investigating 3D shapes – nets pp 15–17 (Y4-D) Volume, Capacity and Mass <ul style="list-style-type: none"> Volume and capacity – litres pp 1–2 Volume and capacity – millilitres pp 3–4 Volume and capacity – measuring volume with cubic centimetres pp 5–8
LS 5 Big idea Angles are the primary structural component of many shapes Topic Angles	MA2-GM-03 identifies angles and classifies them by comparing to a right angle MA2-PF-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)	Geometric measure B Partitioned fractions B	<ul style="list-style-type: none"> Angles: Compare angles to a right angle Represent fractional quantities equal to and greater than one 		Geometric measure: angle (B) <ul style="list-style-type: none"> Equal Angles Comparing Angles Right Angle Relation What Type of Angle? Classifying Angles 	Classify angles <ul style="list-style-type: none"> Classifying angles 	Geometry, Angles 2-4 <ul style="list-style-type: none"> Right angle sort (DOK 3) Flag flying (DOK 4) 	(Y5-E) Geometry <ul style="list-style-type: none"> Lines and angles – lines p 2 Lines and angles – introducing angles p 3 Lines and angles – measuring angles pp 4–5

NSW New Syllabus (2023) S2 Year 4

LS & Topic	Outcomes	Focus	Content	New Courses	Activities (courses)	Skill Quests	Challenges	Ebooks
LS 1 Big idea The number system extends infinitely to very large and very small numbers Topic Patterns	MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers ... MA2-RN-02 represents and compares decimals up to 2 decimal places using place value MA2-MR-01 represents and uses the structure of multiplicative relations to 10×10 to solve problems	Representing numbers using place value B Multiplicative relations B	<ul style="list-style-type: none"> Whole numbers: Apply place value to partition, regroup and rename numbers up to 6 digits Whole numbers: Recognise and represent numbers that are 10, 100 or 1000 times as large Decimals: Extend the application of the place value system from whole numbers to tenths and hundredths Decimals: Make connections between fractions and decimal notation Investigate number sequences involving related multiples Use known number facts and strategies Operate with multiples of 10 	Coming soon	Multiplicative relations: multiply (B) <ul style="list-style-type: none"> Multiplying by 10, 100, 1000 	Represent 5-digit numbers <ul style="list-style-type: none"> Recognising numbers that are 10, 100, 1000 bigger Multiply by multiples of 10 <ul style="list-style-type: none"> Multiplying by a multiple of 10 		(Y4-D) Multiplication and Division <ul style="list-style-type: none"> Mental multiplication strategies – multiplying by 10 and 100 pp 13–14 Mental division strategies – dividing by 10 and 100 p 29 (Y4-D) Patterns and Algebra <ul style="list-style-type: none"> Patterns and functions pp 1–12 Equations and equivalence pp 13–21
LS 2 Big idea Understanding relationships between the properties of 2D shapes helps visualise and organise spaces in the world Topic 2D shape properties	MA2-2DS-01 compares two-dimensional shapes ... MA2-2DS-02 performs transformations by combining and splitting ... MA2-2DS-03 estimates, measures and compares areas ...	Two-dimensional spatial structure B	<ul style="list-style-type: none"> 2D shapes: Create two-dimensional shapes that result from combining and splitting common shapes 2D shapes: Create symmetrical patterns and shapes Area: Measure the areas of shapes using the grid structure Area: Compare surfaces using familiar metric units of area 		2D spatial structure: shape & area (B) <ul style="list-style-type: none"> What Line am I? Shapes Collect the Shapes Collect More Shapes Collect the Shapes 2 	Identify shapes in composite polygons <ul style="list-style-type: none"> Creating shapes from combining & splitting shapes Identify features of 2D shapes <ul style="list-style-type: none"> Identifying, classifying & sorting 2D shapes 	Geometry, 2D Shapes 2-4 <ul style="list-style-type: none"> Shape cutter (DOK 2) Transformer shapes (DOK 3) Triangle tiles (DOK 3) 	
LS 3 Big idea Multiplicative thinking involves flexible use of multiplication and division concepts, strategies, and representations Topic Linking multiplication to area and volume	MA2-2DS-03 estimates, measures and compares areas ... MA2-3DS-01 makes and sketches models and nets of three-dimensional objects ... MA2-MR-01 represents and uses the structure of multiplicative relations to 10×10 ... MA2-MR-02 completes number sentences involving multiplication and division ...	Two-dimensional spatial structure B Three-dimensional spatial structure B Multiplicative relations B	<ul style="list-style-type: none"> Area: Measure the areas of shapes using the grid structure Area: Compare surfaces using familiar metric units of area 3D objects: Connect three-dimensional objects and two-dimensional representations Use the structure of the area model to represent multiplication and division Use number properties to find related multiplication facts Operate with multiples of 10 Represent and solve word problems with number sentences involving multiplication or division 		2D spatial structure: shape & area (B) <ul style="list-style-type: none"> Area of Shapes Equal Areas 3D spatial structure: capacity (B) <ul style="list-style-type: none"> How many Blocks? Volume of Solids and Prisms - 1 cm³ blocks 	Calculate area using grid structure <ul style="list-style-type: none"> Measuring area of shapes using the grid structure 	Measurement, Area 2-4 <ul style="list-style-type: none"> Planning that pool (DOK 3) Measurement, Volume & Capacity 3-5 <ul style="list-style-type: none"> Face stickers (DOK 3) Measurement, Volume & Capacity 5-7 <ul style="list-style-type: none"> Constructing cubes (DOK 2) 	(Y4-D) Length, Perimeter and Area <ul style="list-style-type: none"> Area – square centimetres pp 15–16 Area – square metres pp 17–18 (Y5-E) Length, Perimeter and Area <ul style="list-style-type: none"> Area – introducing area pp 25–26 Area puzzles p 31 (Y4-D) Volume, Capacity and Mass <ul style="list-style-type: none"> Volume and capacity – measuring volume with cubic centimetres p 5

LS & Topic	Outcomes	Focus	Content	New Courses	Activities (courses)	Skill Quests	Challenges	Ebooks
LS 4 Big idea What needs to be measured determines the unit of measurement Topic Length and mass	MA2-GM-02 measures and estimates lengths in metres, centimetres and millimetres MA2-NSM-01 estimates, measures and compares the masses of objects using kilograms and grams MA2-RN-02 represents and compares decimals up to 2 decimal places using place value	Geometric measure B Non-spatial measure B Representing numbers using place value B	<ul style="list-style-type: none"> Length: Use scaled instruments to measure and compare lengths Mass: Use scaled instruments to measure and compare masses Decimals: Extend the application of the place value system from whole numbers to tenths and hundredths 		Geometric measure: length (B) <ul style="list-style-type: none"> How Long is That? Measuring Length Perimeter of Shapes Converting cm and mm Centimetres and Metres Non-spatial measure: mass & time (B) <ul style="list-style-type: none"> How Heavy? Ordering Mass (g) 	Measure length & perimeter <ul style="list-style-type: none"> Measuring in m, cm, mm Comparing length measurements Ordering length measurements Converting between metric lengths Calculating the perimeter of quadrilaterals Read scaled instruments in kg & g <ul style="list-style-type: none"> Measuring mass in grams Measuring & comparing mass in g & kg 	Measurement, Length 2-4 <ul style="list-style-type: none"> Robot race (DOK 2) Parking problems (DOK 3) Metres or centimetres? (DOK 3) Measurement, Mass 2-4 <ul style="list-style-type: none"> Placing pumpkins (DOK 2) Beryl the St Bernard (DOK 3) 	(Y4-D) Length, Area and Perimeter <ul style="list-style-type: none"> Perimeter – measuring shapes pp 8–9 Perimeter – calculating perimeter pp 10–11 Perimeter – perimeter word problems pp 12–14 (Y5-E) Length, Perimeter and Area <ul style="list-style-type: none"> Units of length – m, cm, mm pp 1–2 Units of length – metres to kilometres pp 5–6 (Y4-D) Volume, Capacity and Mass <ul style="list-style-type: none"> Mass – kilograms and grams pp 10–13
LS 5 Big idea Addition and subtraction problems can be solved by using a variety of strategies Topic Addition and subtraction problems	MA2-AR-01 selects and uses mental and written strategies for addition and subtraction involving 2- and 3-digit numbers MA2-AR-02 completes number sentences involving addition and subtraction by finding missing values MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands	Additive relations B Representing numbers using place value B	<ul style="list-style-type: none"> Partition, rearrange and regroup numbers to at least 1000 to solve additive problems Apply addition and subtraction to familiar contexts, including money and budgeting Complete number sentences involving additive relations to find unknown quantities Whole numbers: Apply place value to partition, regroup and rename numbers up to 6 digits Whole numbers: Recognise and represent numbers that are 10, 100 or 1000 times as large 	Y4 Addition <ul style="list-style-type: none"> Additive relations + Problem-solving with + Y4 Subtraction <ul style="list-style-type: none"> Additive relations – Problem-solving with – 	Additive relations (B) <ul style="list-style-type: none"> Pyramid Puzzles 1 Pyramid Puzzles 2 Pyramid Puzzles 3 Pyramid Puzzles 4 Missing Numbers Missing Values 	Addition & subtraction to 4 digits <ul style="list-style-type: none"> Adding & subtracting money 	Number & Algebra, Money 2-4 <ul style="list-style-type: none"> Bike for sale (DOK 3) Fruit salad (DOK 3) 	(Y5-E) Fractions, Decimals and Percentages <ul style="list-style-type: none"> Calculating – adding decimal fractions p 31 (Y5-E) Adding and Subtracting <ul style="list-style-type: none"> Written methods – adding and subtracting decimals p 22 Written methods – word problems p 23

NSW New Syllabus (2023) S2 Year 4

LS & Topic	Outcomes	Focus	Content	New Courses	Activities (courses)	Skill Quests	Challenges	Ebooks
LS 1 Big idea The number system extends infinitely to very large and very small numbers Topic Number review	MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers ... MA2-RN-02 represents and compares decimals up to 2 decimal places using place value MA2-AR-01 selects and uses mental and written strategies for addition and subtraction involving 2- and 3-digit numbers	Representing numbers using place value B Additive relations B	<ul style="list-style-type: none"> Whole numbers: Order numbers in the thousands Whole numbers: Apply place value to partition, regroup and rename numbers up to 6 digits Whole numbers: Recognise and represent numbers that are 10, 100 or 1000 times as large Decimals: Extend the application of the place value system from whole numbers to tenths and hundredths Decimals: Make connections between fractions and decimal notation Partition, rearrange and regroup numbers to at least 1000 to solve additive problems 		Refer to: <ul style="list-style-type: none"> Term 1, Learning Sequence 1 Term 2, Learning Sequence 1 Term 3, Learning Sequence 1 			
LS 2 Big idea Fractions represent multiple ideas and can be represented in different ways Topic Fractions applications	MA2-PF-01 represents and compares halves, quarters, thirds and fifths as lengths on a number line ... MA2-RN-02 represents and compares decimals up to 2 decimal places using place value MA2-GM-02 measures and estimates lengths in metres, centimetres and millimetres	Partitioned fractions B Representing numbers using place value B Geometric measure B	<ul style="list-style-type: none"> Model equivalent fractions as lengths Represent fractional quantities equal to and greater than one Decimals: Make connections between fractions and decimal notation Length: Use scaled instruments to measure and compare lengths 	Y4 Partitioned Fractions <ul style="list-style-type: none"> Counting by fractions Mixed numbers to improper fractions Improper fractions to mixed numbers 			Number & Algebra, Fractions 2-4 <ul style="list-style-type: none"> The grasshoppers who jumped a fraction (DOK 2) How many hats and socks (DOK 2) How many scarves and hats (DOK 2) 	(Y5-E) Fractions, Decimals and Percentages <ul style="list-style-type: none"> Calculating – adding and subtracting fractions with like denominators pp 26–29
LS 3 Big idea Questions can be asked and answered by collecting and interpreting data Topic Chance	MA2-CHAN-01 records and compares the results of chance experiments MA2-DATA-01 collects discrete data and constructs graphs using a given scale MA2-DATA-02 interprets data in tables, dot plots and column graphs	Chance B Data B	<ul style="list-style-type: none"> Describe the likelihood of outcomes of chance events Identify when events are affected by previous events Select and trial methods for data collection Construct and interpret data displays with many-to-one scales 		Chance (B) <ul style="list-style-type: none"> Introductory probability Chance Gauge What are the Chances? 	Describe the likelihood of outcomes <ul style="list-style-type: none"> Using the language of probability Identifying events affected by previous events 	Chance & Probability 3-5 <ul style="list-style-type: none"> Roll of the dice (DOK 4) 	(Y4-D) Chance and Data <ul style="list-style-type: none"> Chance – ordering events pp 1–2 Chance – probability pp 3–5 Chance – fair and unfair p 6 Chance – coin investigation p 7 Chance - two dice investigation pp 8–9

LS & Topic	Outcomes	Focus	Content	New Courses	Activities (courses)	Skill Quests	Challenges	Ebooks
<p>LS 4</p> <p>Big idea Multiplicative thinking involves flexible use of multiplication and division concepts, strategies and representations</p> <p>Topic Multiplication and division problems</p>	<p>MA2-MR-01 represents and uses the structure of multiplicative relations to 10 ...</p> <p>MA2-MR-02 completes number sentences involving multiplication and division by finding missing values</p> <p>MA2-RN-01 applies an understanding of place value and the role of zero to represent numbers to at least tens of thousands</p>	<p>Multiplicative relations B</p> <p>Representing numbers using place value B</p>	<ul style="list-style-type: none"> Whole numbers: Apply place value to partition, regroup and rename numbers up to 6 digits Whole numbers: Recognise and represent numbers that are 10, 100 or 1000 times as large Investigate number sequences involving related multiples Use known number facts and strategies Use the structure of the area model to represent multiplication and division Use number properties to find related multiplication facts Operate with multiples of 10 Represent and solve word problems with number sentences involving multiplication or division 	<p>Y4 Multiplication</p> <ul style="list-style-type: none"> Multiplicative relations \times Partition strategy \times Area model Problem solving with \times <p>Y4 Division</p> <ul style="list-style-type: none"> Multiplicative relations \div Partition strategy \div Area model Problem-solving with \div 	<p>Multiplicative relations : multiply (B)</p> <ul style="list-style-type: none"> Problems: Times and Divide 	<p>Solve multiplication & division problems</p> <ul style="list-style-type: none"> Find the missing number in mult/division problems Multiplication & division word problems Multiplication & division strategies 	<p>Number & Algebra, Multiplication & Division 3-5</p> <ul style="list-style-type: none"> Pair numbers to reach the product (DOK 2) Pick your numbers (DOK 2) 	<p>(Y5-E) Multiplication and Division</p> <ul style="list-style-type: none"> Written methods – solving problems pp 27–28
<p>LS 5</p> <p>Big idea Shapes encountered in daily life can be classified by their attributes</p> <p>Topic Transformation of 2D shapes</p>	<p>MA2-2DS-01 compares two-dimensional shapes and describes their features</p> <p>MA2-2DS-02 performs transformations by combining and splitting two-dimensional shapes</p> <p>MA2-2DS-03 estimates, measures and compares areas using square centimetres and square metres</p> <p>MA2-GM-03 identifies angles and classifies them by comparing to a right angle</p>	<p>Two-dimensional spatial structure B</p> <p>Geometric measure B</p>	<ul style="list-style-type: none"> 2D shapes: Create two-dimensional shapes that result from combining and splitting common shapes 2D shapes: Create symmetrical patterns and shapes Area: Measure the areas of shapes using the grid structure Area: Compare surfaces using familiar metric units of area Angles: Compare angles to a right angle 		<p>2D spatial structure: transformations (B)</p> <ul style="list-style-type: none"> Symmetry Symmetry or Not? Flip, Slide, Turn Transformations Rotational Symmetry 	<p>Perform transformations</p> <ul style="list-style-type: none"> Transforming shapes by translation & reflections Transforming shapes by rotation <p>Tessellations</p> <ul style="list-style-type: none"> Creating symmetrical patterns & shapes 	<p>Geometry, Symmetry, Transformation & Location 4-6</p> <ul style="list-style-type: none"> Tessellations (DOK 3) 	<p>(Y5-E) Geometry</p> <ul style="list-style-type: none"> Transformation, tessellation and symmetry – symmetry pp 16–18 Transformation, tessellation and symmetry – transformation pp 19–20 Transformation, tessellation and symmetry – tessellation pp 21–23

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