KSPS Year 2 Math Scope and Sequence

STAGE 1

By the end of Stage 1, students ask questions and use known facts, objects, diagrams and technology to explore mathematical problems and develop mathematical fluency. They link mathematical ideas and use appropriate language and diagrams to explain strategies used.

Students count, order, read and write two- and three-digit numbers and use a range of strategies and recording methods. They use mental strategies and concrete materials to add, subtract, multiply and divide, and solve problems. Students model and describe objects and collections divided into halves, quarters and eighths. They associate collections of Australian coins with their value. They use place value to partition numbers. Students describe and continue a variety of number patterns and build number relationships. They relate addition and subtraction facts for sums to at least 20.

Students estimate, measure, compare and record using informal units for length, area, volume, capacity and mass. They recognise the need for formal units of length and use the metre and centimetre to measure length and distance. They use a calendar to identify the date and name and order the months and the seasons of the year. Students use informal units to compare and order the duration of events and tell the time on the half- and quarter-hour. They identify, describe, sort and model particular three-dimensional objects and two-dimensional shapes. Students represent and describe the position of objects and interpret simple maps.

Students collect, organise, display and interpret data using lists, tables and picture graphs. They recognise and describe the element of chance in everyday events.

From NSW mathematics syllabus

Overview

This scope and sequence has been developed to promote the **connectedness of mathematics as a whole subject**. Unit duration is up to the professional judgement of each teacher.

The focus of each unit is the Number and Algebra concept with the Measurement and Geometry and Statistics and probability integrated/connected into the Number and Algebra focus.

Connections highlighted in yellow are suggestions. Connections can also be made by simply following the sequence of the unit, starting with the Number and Algebra concept/s.

Working mathematically should be imbedded into all maths lesson/activities. Consider opened ended/inquiry based learning tasks when programming.

Mathematics should account for **40%** of your weekly teaching time

V. Cox & L. Englefield 2015

Kotara South Public School | Mathematics Scope and Sequence | Year Two **Term 1**

Unit	Working Mathematically Outcomes (embedded in each unit)	Outcomes The outcomes in each unit do not have to connect together at all times throughout the unit.	Number & Algebra Key Ideas	Measurement & Geometry Statistics & Probability Number & Algebra Other KLA *Concept/s that connect to number/algebra concept*
Unit 1 will be used at the beginning of Term 1 on its own and then it can be integrated into every unit throughout the term where there are connections.				
1	MA1-1WM: A student describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-2WM: A student uses objects, diagrams and technology to explore mathematical problems MA1-3WM: A student supports conclusions by explaining or demonstrating how answers were obtained	**Whole Number** MA1-4NA: A student applies place value, informally, to count, order, read and represent two- and three-digit numbers **Patterns and Algebra** MA1-8NA: A student creates, represents and continues a variety of patterns with numbers and objects **Time** MA1-13MG: A student describes, compares and orders durations of events, and reads half- and quarter-hour time **Position** MA1-16MG: A student represents and describes the positions of objects in everyday situations and on maps **Data** MA1-17SP: A student gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results	•Count forwards and backwards by twos, threes, fives and tens from any starting point •Partition numbers of up to three digits using place value •Read, write and order three-digit numbers •Describe patterns with numbers and identify missing elements e.g. of a connection – Order some simple (common) times that are 3 digits. Skip count from any point but miss numbers. Students I.D	•Use a calendar to determine duration in months, weeks and days •Use informal units to measure and compare the durations of events •Interpret simple maps of familiar locations •Pose questions and collect categorical data ***Science and HSIE unit***
2		**Addition and Subtraction** MA1-5NA: A student uses a range of strategies and informal recording methods for addition and subtraction involving one- and two-digit numbers **Length** MA1-9MG: A student measures, records, compares and estimates lengths and distances using uniform informal units, metres and centimetres **2D Space** MA1-15MG: A student manipulates, sorts, represents, describes and explores two-dimensional shapes, including quadrilaterals, pentagons, hexagons and octagons	•Make connections between addition and subtraction	•Record lengths by referring to the number and type of uniform informal unit used •Compare and order shapes/objects based on length measured using uniform informal units •Make and draw two-dimensional shapes in different orientations •Identify, perform and record the result of one-step ‘slides’ and ‘flips’ e.g. of a connection – Add “informal units” to informally find the perimeter of shapes.

Unit	Working Mathematically Outcomes (embedded in each unit)	Outcomes The outcomes in each unit do not have to connect together at all times throughout the unit.	Number & Algebra Key Ideas	Measurement & Geometry Statistics & Probability Number & Algebra Other KLA *Concept/s that connect to number/algebra concept*
3	MA1-1WM: A student describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-2WM: A student uses objects, diagrams and technology to explore mathematical problems MA1-3WM: A student supports conclusions by explaining or demonstrating how answers were obtained	**Multiplication and Division** MA1-6NA: A student uses a range of mental strategies and concrete materials for multiplication and division **Fractions and Decimals** MA1-7NA: A student represents and models halves, quarters and eighths **Area** MA1-10MG: A student measures, records, compares and estimates areas using uniform informal units **2D Space** MA1-15MG: A student manipulates, sorts, represents, describes and explores two-dimensional shapes, including quadrilaterals, pentagons, hexagons and octagons	•Model and use repeated addition as a strategy for multiplication •Model and use arrays described in terms of 'rows' and 'columns' as a strategy for multiplication •Recognise, describe and represent halves, quarters and eighths of whole objects, shapes and collections e.g. of a connection – Use arrays to introduce groups of and sharing organised in rows and columns. Link this to finding area.	•Compare and order surfaces based on area measured using uniform informal units •Make and draw two-dimensional shapes in different orientations •Identify, perform and record the result of one-step 'slides' and 'flips' e.g. of a connection – use arrays to informally order shapes based on their area. use pattern blocks to model fractions (2 triangles makes 1 rhombus = ½ , 6 triangles makes 1 hexagon = 1/6. Let students explore. Ask the question "How many _____ would it take to make a _____? Prove it.

Assessment Strategies

Ongoing	Formative	Summative
• Observation • Work samples • Photographs • Anecdotal Records • Video • PLAN	• Pre tasks • Open-ended tasks • CTJ • Sena 1 & 2	• Post tasks • Open-ended tasks • CTJ • Sena 1 & 2

Kotara South Public School | Mathematics Scope and Sequence | Year Two **Term 2**

Unit	Working Mathematically Outcomes (embedded in each unit)	Outcomes The outcomes in each unit do not have to connect together at all times throughout the unit.	Number & Algebra Key Ideas	Measurement & Geometry Statistics & Probability Number & Algebra Other KLA *Concept/s that connect to number/algebra concept*
Unit 1 will be used at the beginning of Term 2 on its own and then it can be integrated into every unit throughout the term where there are connections. *(Revision of key ideas from previous term is in italics and new key ideas are in bold.)*				
1	MA1-1WM: A student describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-2WM: A student uses objects, diagrams and technology to explore mathematical problems MA1-3WM: A student supports conclusions by explaining or demonstrating how answers were obtained	**Whole Number** MA1-4NA: A student applies place value, informally, to count, order, read and represent two- and three-digit numbers **Patterns and Algebra** MA1-8NA: A student creates, represents and continues a variety of patterns with numbers and objects **Time** MA1-13MG: A student describes, compares and orders durations of events, and reads half- and quarter-hour time **Position** MA1-16MG: A student represents and describes the positions of objects in everyday situations and on maps **Data** MA1-17SP: A student gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results **Chance** MA1-18SP: A student recognises and describes the element of chance in everyday events	• *Count forwards and backwards by twos, threes, fives and tens from any starting point* • *Partition numbers of up to three digits using place value* • *Read, write and order three-digit numbers* • *Describe patterns with numbers and identify missing elements* • **Find missing numbers in number sentences involving one operation of addition or subtraction** e.g. of a connection –	• *Use a calendar to determine duration in months, weeks and days* • *Use informal units to measure and compare the durations of events* • **Experiences activities with duration of one hour, half/quarter of an hour, one minute and a few seconds** • **Tell time to the quarter-hour, using the language of 'past' and 'to'** • *Interpret simple maps of familiar locations* • **Represent the position of objects in models, photographs and drawings** • *Pose questions and collect categorical data* • **Create data displays using lists, tables and picture graphs (one-to-one correspondence) and interpret them** ***Science and HSIE unit*** • **Identify practical activities and everyday events that involve chance**
2		**Addition and Subtraction** MA1-5NA: A student uses a range of strategies and informal recording methods for addition and subtraction involving one- and two-digit numbers **Length** MA1-9MG: A student measures, records, compares and estimates lengths and distances using uniform informal units, metres and centimetres **2D Space** MA1-15MG: A student manipulates, sorts, represents, describes and explores two-dimensional shapes, including quadrilaterals, pentagons, hexagons and octagons	• *Make connections between addition and subtraction* • **Use and record a range of mental strategies for addition and subtraction of two-digit numbers**	• *Record lengths by referring to the number and type of uniform informal unit used* • *Compare and order shapes/objects based on length measured using uniform informal units* • **Recognises the need for formal units to measure length** • **Uses metres and centimetres to measure and estimate lengths and distances** • *Make and draw two-dimensional shapes in different orientations* • *Identify, perform and record the result of one-step 'slides' and 'flips'* • **Make symmetrical designs with a variety of materials**

Unit	Working Mathematically Outcomes (embedded in each unit)	Outcomes The outcomes in each unit do not have to connect together at all times throughout the unit.	Number & Algebra Key Ideas	Measurement & Geometry Statistics & Probability Number & Algebra Other KLA *Concept/s that connect to number/algebra concept*
3	MA1-1WM: A student describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-2WM: A student uses objects, diagrams and technology to explore mathematical problems MA1-3WM: A student supports conclusions by explaining or demonstrating how answers were obtained	**Multiplication and Division** MA1-6NA: A student uses a range of mental strategies and concrete materials for multiplication and division **Fractions and Decimals** MA1-7NA: A student represents and models halves, quarters and eighths **Volume and Capacity** MA1-11MG: A student measures, records, compares and estimates volumes and capacities using uniform informal units **Mass** MA1-12MG: A student measures, records, compares and estimates the masses of objects using uniform informal units **3D Space** MA1-14MG: A student sorts, describes, represents and recognises familiar three-dimensional objects, including cones, cubes, cylinders, spheres and prisms	• *Model and use repeated addition as a strategy for multiplication* • *Model and use arrays described in terms of 'rows' and 'columns' as a strategy for multiplication* • **Model and use groups, arrays and repeated subtraction as strategies for division** • *Recognise, describe and represent halves, quarters and eighths of whole objects, shapes and collections* • **Use fraction notation ¼ and ⅛** e.g. of a connection –	• **Compare and order objects based on capacity and volume measured using uniform informal units** • **Uses uniform informal units to measure, compare and estimate the masses of objects** • **Use the terms 'flat surface', 'curved surface', 'face', 'edge' and 'vertex' appropriately to describe three-dimensional objects** • **Recognise faces of three-dimensional objects as two-dimensional shapes** e.g. of a connection -

Assessment Strategies

Ongoing	Formative	Summative
• Observation • Work samples • Photographs • Anecdotal Records • Video • PLAN	• Pre tasks • Open-ended tasks • CTJ • Sena 1 & 2	• Post tasks • Open-ended tasks • CTJ • Sena 1 & 2

Kotara South Public School | Mathematics Scope and Sequence | Year Two **Term 3**

Unit	Working Mathematically Outcomes (embedded in each unit)	Outcomes The outcomes in each unit do not have to connect together at all times throughout the unit.	Number & Algebra Key Ideas	Measurement & Geometry Statistics & Probability Number & Algebra Other KLA *Concept/s that connect to number/algebra concept*
Unit 1 will be used at the beginning of Term 3 on its own and then it can be integrated into every unit throughout the term where there are connections. *(Revision of key ideas from previous term is in italics and new key ideas are in bold.)*				
1	MA1-1WM: A student describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-2WM: A student uses objects, diagrams and technology to explore mathematical problems MA1-3WM: A student supports conclusions by explaining or demonstrating how answers were obtained	**Whole Number** MA1-4NA: A student applies place value, informally, to count, order, read and represent two- and three-digit numbers **Patterns and Algebra** MA1-8NA: A student creates, represents and continues a variety of patterns with numbers and objects **Time** MA1-13MG: A student describes, compares and orders durations of events, and reads half- and quarter-hour time **Position** MA1-16MG: A student represents and describes the positions of objects in everyday situations and on maps **Data** MA1-17SP: A student gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results **Chance** MA1-18SP: A student recognises and describes the element of chance in everyday events	• *Count forwards and backwards by twos, threes, fives and tens from any starting point* • *Partition numbers of up to three digits using place value* • *Read, write and order three-digit numbers* • **Recognise, count and order Australian coins and notes according to their value** • *Describe patterns with numbers and identify missing elements* • *Find missing numbers in number sentences involving one operation of addition or subtraction* e.g. of a connection –	• *Use a calendar to determine duration in months, weeks and days* • *Use informal units to measure and compare the durations of events* • *Experiences activities with duration of one hour, half/quarter of an hour, one minute and a few seconds* • *Tell time to the quarter-hour, using the language of 'past' and 'to'* • *Interpret simple maps of familiar locations* • *Represent the position of objects in models, photographs and drawings* • *Pose questions and collect categorical data* • *Create data displays using lists, tables and picture graphs (one-to-one correspondence) and interpret them* ***Science and HSIE unit*** • *Identify practical activities and everyday events that involve chance* • **Describe events as 'likely' or 'unlikely'**
2		**Addition and Subtraction** MA1-5NA: A student uses a range of strategies and informal recording methods for addition and subtraction involving one- and two-digit numbers **Length** MA1-9MG: A student measures, records, compares and estimates lengths and distances using uniform informal units, metres and centimetres **2D Space** MA1-15MG: A student manipulates, sorts, represents, describes and explores two-dimensional shapes, including quadrilaterals, pentagons, hexagons and octagons	• *Make connections between addition and subtraction* • *Use and record a range of mental strategies for addition and subtraction of two-digit numbers* • **Solve word problems involving addition and subtraction**	• *Record lengths by referring to the number and type of uniform informal unit used* • *Compare and order shapes/objects based on length measured using uniform informal units* • *Recognises the need for formal units to measure length* • *Uses metres and centimetres to measure and estimate lengths and distances* • **Record lengths using the abbreviations m and cm** • *Make and draw two-dimensional shapes in different orientations* • *Identify, perform and record the result of one-step 'slides' and 'flips'* • *Make symmetrical designs with a variety of materials*

Unit	Working Mathematically Outcomes (embedded in each unit)	Outcomes The outcomes in each unit do not have to connect together at all times throughout the unit.	Number & Algebra Key Ideas	Measurement & Geometry Statistics & Probability Number & Algebra Other KLA *Concept/s that connect to number/algebra concept*
3	MA1-1WM: A student describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-2WM: A student uses objects, diagrams and technology to explore mathematical problems MA1-3WM: A student supports conclusions by explaining or demonstrating how answers were obtained	**Multiplication and Division** MA1-6NA: A student uses a range of mental strategies and concrete materials for multiplication and division **Fractions and Decimals** MA1-7NA: A student represents and models halves, quarters and eighths **Area** MA1-10MG: A student measures, records, compares and estimates areas using uniform informal units **2D Space** MA1-15MG: A student manipulates, sorts, represents, describes and explores two-dimensional shapes, including quadrilaterals, pentagons, hexagons and octagons	• *Model and use repeated addition as a strategy for multiplication* • *Model and use arrays described in terms of 'rows' and 'columns' as a strategy for multiplication* • *Model and use groups, arrays and repeated subtraction as strategies for division* • **Record using drawings, words and numerals** • *Recognise, describe and represent halves, quarters and eighths of whole objects, shapes and collections* • *Use fraction notation ¼ and ⅛* e.g. of a connection –	• *Compare and order surfaces based on area measured using uniform informal units* • *Make and draw two-dimensional shapes in different orientations* • *Identify, perform and record the result of one-step 'slides' and 'flips'* • *Make symmetrical designs with a variety of materials* • **Identify, perform, describe and record the result of full, half and quarter 'turns'** e.g. of a connection -

Assessment Strategies

Ongoing	Formative	Summative
• Observation • Work samples • Photographs • Anecdotal Records • Video • PLAN	• Pre tasks • Open-ended tasks • CTJ • Sena 1 & 2	• Post tasks • Open-ended tasks • CTJ • Sena 1 & 2

Kotara South Public School | Mathematics Scope and Sequence | Year Two **Term 4**

Unit	Working Mathematically Outcomes (embedded in each unit)	Outcomes The outcomes in each unit do not have to connect together at all times throughout the unit.	Number & Algebra Key Ideas	Measurement & Geometry Statistics & Probability Number & Algebra Other KLA *Concept/s that connect to number/algebra concept*
Unit 1 will be used at the beginning of Term 4 on its own and then it can be integrated into every unit throughout the term where there are connections. *(Revision of key ideas from previous term is in italics and new key ideas are in bold.)*				
1	MA1-1WM: A student describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-2WM: A student uses objects, diagrams and technology to explore mathematical problems MA1-3WM: A student supports conclusions by explaining or demonstrating how answers were obtained	**Whole Number** MA1-4NA: A student applies place value, informally, to count, order, read and represent two- and three-digit numbers **Patterns and Algebra** MA1-8NA: A student creates, represents and continues a variety of patterns with numbers and objects **Time** MA1-13MG: A student describes, compares and orders durations of events, and reads half- and quarter-hour time **Position** MA1-16MG: A student represents and describes the positions of objects in everyday situations and on maps **Data** MA1-17SP: A student gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results **Chance** MA1-18SP: A student recognises and describes the element of chance in everyday events **Addition and Subtraction** MA1-5NA: A student uses a range of strategies and informal recording methods for addition and subtraction involving one- and two-digit numbers	• *Count forwards and backwards by twos, threes, fives and tens from any starting point* • *Partition numbers of up to three digits using place value* • *Read, write and order three-digit numbers* • *Recognise, count and order Australian coins and notes according to their value* • *Describe patterns with numbers and identify missing elements* • *Find missing numbers in number sentences involving one operation of addition or subtraction* • *Make connections between addition and subtraction* • *Use and record a range of mental strategies for addition and subtraction of two-digit numbers* • *Solve word problems involving addition and subtraction* e.g. of a connection –	• *Use a calendar to determine duration in months, weeks and days* • *Use informal units to measure and compare the durations of events* • *Experiences activities with duration of one hour, half/quarter of an hour, one minute and a few seconds* • *Tell time to the quarter-hour, using the language of 'past' and 'to'* • *Interpret simple maps of familiar locations* • *Represent the position of objects in models, photographs and drawings* • *Pose questions and collect categorical data* • *Create data displays using lists, tables and picture graphs (one-to-one correspondence) and interpret them* ***Science and HSIE unit*** • *Identify practical activities and everyday events that involve chance* • *Describe events as 'likely' or 'unlikely'* • **Distinguish between 'possible' and 'impossible' events** • **Identify some events as 'certain' or 'impossible'**

Unit	Working Mathematically Outcomes (embedded in each unit)	Outcomes The outcomes in each unit do not have to connect together at all times throughout the unit.	Number & Algebra Key Ideas	Measurement & Geometry Statistics & Probability Number & Algebra Other KLA *Concept/s that connect to number/algebra concept*
2	MA1-1WM: A student describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-2WM: A student uses objects, diagrams and technology to explore mathematical problems MA1-3WM: A student supports conclusions by explaining or demonstrating how answers were obtained	**Multiplication and Division** MA1-6NA: A student uses a range of mental strategies and concrete materials for multiplication and division **Fractions and Decimals** MA1-7NA: A student represents and models halves, quarters and eighths **Volume and Capacity** MA1-11MG: A student measures, records, compares and estimates volumes and capacities using uniform informal units **Mass** MA1-12MG: A student measures, records, compares and estimates the masses of objects using uniform informal units **3D Space** MA1-14MG: A student sorts, describes, represents and recognises familiar three-dimensional objects, including cones, cubes, cylinders, spheres and prisms	• *Model and use repeated addition as a strategy for multiplication* • *Model and use arrays described in terms of 'rows' and 'columns' as a strategy for multiplication* • *Model and use groups, arrays and repeated subtraction as strategies for division* • *Record using drawings, words and numerals* • *Recognise, describe and represent halves, quarters and eighths of whole objects, shapes and collections* • *Use fraction notation ¼ and ⅛* e.g. of a connection –	• *Compare and order objects based on capacity and volume measured using uniform informal units* • *Uses uniform informal units to measure, compare and estimate the masses of objects* • **Record masses by referring to the number and type of uniform informal unit used** • *Use the terms 'flat surface', 'curved surface', 'face', 'edge' and 'vertex' appropriately to describe three-dimensional objects* • *Recognise faces of three-dimensional objects as two-dimensional shapes* • **Distinguish between three-dimensional objects and two-dimensional shapes** • **Represent three-dimensional objects in models and drawings** e.g. of a connection -

Assessment Strategies

Ongoing	Formative	Summative
• Observation • Work samples • Photographs • Anecdotal Records • Video • PLAN	• Pre tasks • Open-ended tasks • CTJ • Sena 1 & 2	• Post tasks • Open-ended tasks • CTJ • Sena 1 & 2