GO Maths Scope and Continuum

Early Stage 1

FIRST HALF

Number

Whole Numbers

- Review number concepts and relationships 1 to 5.
- Build quantities 1 to 10.
- Count rationally 1 to 10.
- Recognise quantities 1 to 6 by sight.
- Match quantities, concrete and pictorial.
- Match quantities with symbols.
- Write number symbols 1 to 10.
- Introduce the zero concept and write 0.
- Compare quantities 1 to 10.
- Sequence numbers 1 to 10.
- Apply number concepts in data collection and interpretation.
- Make the same quantity, concretely and pictorially.
- Use a variety of concrete and pictorial representations of numbers to 10.
- Explore odd/even numbers.

Addition and Subtraction

- Build quantities and join quantities.
- Represent active addition stories.
- Represent static addition stories.
- Join collections and determine the total.
- Record addition expressions.
- Use count-on 1 or 2 strategy.
- Show part-part-total combinations to 10.

Multiplication and Division

There is no work done on Multiplication and Division for the first half of the year.

Fractions and Decimals

There is no work done on Fractions and Decimals for the first half of the year.

Chance

There is no work done on Chance for this year.

Patterns and Algebra

- Sort objects or pictures and describe the sorting rule.
- Determine another student's sorting rule.
- Distinguish patterns from non-patterns.

- Copy and describe repeating patterns.
- Extend repeating patterns.

Data

- Introduce data collection routines.
- Participate to construct yes/no graphs.
- Build informal graphs with concrete objects.
- Use tally marks to record data.
- Use objects or pictures to record personal data.
- Represent data informally (child-selected representation).
- Compare information on a chart, grid or graph.

Measurement

Length, Area, Volume and Capacity, Mass

- Make direct comparisons involving length, mass, capacity or volume and use comparison language.
- Order according to length, mass, capacity or volume and use ordering language.

Time

- Explore real-world daily events.
- Explore 'before' and 'after' events.
- Identify sequences of events.

Space and Geometry

2D and 3D Space

- Select and describe flat and curved surfaces.
- Make 3D objects using materials.
- Visualise 3D objects.
- Identify and sort 3D objects by characteristics such as 'roll' and 'stack'.
- Build structures with 3D objects.
- Visualise 2D shapes.

Position

- Describe position of self or objects using everyday language.
- Follow instructions to position self or objects.

SECOND HALF

Number

Whole Numbers

- Explore numbers 11 to 15, then 16 to 20.
- Build quantities 11 to 15, then 16 to 20.
- Match quantities, concrete and pictorial.
- Match quantities with symbols.
- Count rationally 1 to 30.
- Identify number symbols 11 to 20.
- Compare quantities 1 to 15, then 1 to 20.
- Sequence numbers 1 to 20.
- Count back in ones from numbers less than 30.
- Apply number concepts in data collection and interpretation.
- Identify ordinal numbers (first to tenth).
- Find missing numbers on a track.
- Recognise all coins.
- Count orally to 100.
- Estimate quantities and then count.
- Use a variety of concrete and pictorial representations of numbers to 20.
- Begin to build relative position of numbers.

Addition and Subtraction

- Represent take-away stories.
- Use take-away language.
- Record subtraction expressions.
- Explore the relationship between addition and subtraction.
- Use count-back 1 or 2 strategy.
- Add and subtract using $1 and $2 coins.
- Show part-part-total combinations to 20.

Multiplication and Division

- Make equal groups.
- Count to determine total.
- Label numbers of groups and how many in each group.
- Make equal rows of objects to form an array.
- Act out sharing stories.
- Determine fair shares.
- Label total and shared groups.

Fractions and Decimals

- Recognise one-half of a region.
- Recognise that halves are two equal parts.

Chance

There is no work on Chance in this half of the year.

Patterns and Algebra

- Create and describe patterns using 3D or 2D shapes.
- Make groups the same.
- Use informal equality language (the same as, balances).
- Explore the idea of equality in measurement and number.
- Sort with two attributes.
- Copy and describe growing patterns.
- Extend growing patterns.
- Translate simple patterns.
- Record number sentences with words.
- Introduce the '=' symbol.

Data

There is no work done on Data in for the second half of the year.

Measurement

Length, Area, Volume and Capacity, Mass

- Count units to measure.
- Record the count of non-standard units.
- Show the same measurement with different units.
- Cover regions with units.
- Count/record units that cover a region.
- Show units in rows to show area and count the total number of units.

Time

- Compare time duration (long time, short time).
- Identify names of school days.
- Sequence names of school days.
- Use informal knowledge of months in relation to birthdays.
- Use ordinal language to describe a sequence of events.
- Explore simple logic problems using events.
- Name days of the week.
- Tell time on the hour on digital and analogue clocks.

Space and Geometry

2D and 3D Space

- Identify straight and curved lines.
- Make 2D shapes using various materials.
- Name 2D shapes (triangle, rectangle, square and circle).
- Compare and match 2D shapes.
- Analyse features of 2D shapes.

Position

- Move to a described location.
- Describe a certain location.
- Explore paths and mazes.
- Work with turns and directions.

Stage 1A

FIRST HALF

Number

Whole Numbers

- Use a number track to assist with counting and ordering.
- Represent 2-digit numbers using numerals, words, concrete materials and pictures.
- Combine materials and finger groupings into tens and ones to represent 2-digit numbers.
- Read and write 2-digit numbers with pictures and expander.
- Use coins to represent 2-digit amounts (multiples of 5 cents).

Addition and Subtraction

- Solve active and static addition problems.
- Introduce the '+' and '–' symbols.
- Establish the turnaround idea.
- Record take-away situations with subtraction number sentences.
- Relate part-part-total to subtraction.
- Use a count-on strategy to add.
- Relate missing addend problems to subtraction.
- Use a double/near-doubles strategy to add.

Multiplication and Division

There is no work done on Multiplication and Division for the first half of the year.

Fractions and Decimals

There is no work done on Fractions and Decimals for the first half of the year.

Chance

There is no work done on Chance for the first half of the year.

Patterns and Algebra

- Describe repeating and growing patterns.
- Build and extend repeating patterns.
- Translate repeating patterns to numbers.
- Relate addition and subtraction.

Data

- Read and interpret tally charts.
- Read and interpret data in table form.
- Read and interpret picture graphs.
- Interpret column graphs.
- Compare data in a table or chart to analyse variation.

Measurement

Length, Area, Volume and Capacity, Mass

- Introduce the metre (m).
- Measure in metres.
- Make estimates involving metres.
- Use informal units of capacity and mass.

Time

- Order the days of the week.
- Read o'clock times.
- Write o'clock times.
- Work with months of the year.

Space and Geometry

2D and 3D Space

- Use geometric terms to describe 3D objects.
- Analyse and sort 3D objects.
- Examine characteristics of prisms.
- Use geometric terms to describe 2D shapes.
- Identify and analyse features of 2D shapes.

Position

- Identify 'left' and 'right'.
- Describe the position of objects.
- Follow and give instructions to follow paths.
- Use amounts of turn (full and half) to describe direction.
- Use unlabelled grids.

SECOND HALF

Number

Whole Numbers

• Count forwards and backwards by tens on and off the decade.
• Count forwards and backwards by 2 and 5.
• Use number lines and hundred charts to assist with counting and ordering.
• Count forwards and backwards by ones from a given 2-digit number.
• Identify the number before and after a given 2-digit number.
• Use place value to build 2-digit numbers.
• Use different combinations of coins to make purchases (multiples of 5 cents).
• Introduce the $5 note.
• Use the count-on/back strategy to add/subtract 10 or 20 cents.

Addition and Subtraction

• Use a bridge-to-10 strategy to add.
• Relate missing addend and comparison situations to subtraction.
• Write fact families (count-on/back).
• Extend the count-on strategy beyond facts (1 or 2 and then 10 or 20).
• Extend the count-back strategy beyond facts (1 or 2 and then 10 or 20).
• Extend the addition doubles and near-doubles strategies to multiples of 5 and then teen numbers.
• Add and subtract 2-digit numbers on the hundred chart.
• Explore note and coin combinations.

Multiplication and Division

• Use multiplication language to describe equal groups and array situations.
• Introduce the '' symbol.
• Explore partition and quotition division situations.
• Informally relate multiplication and division.

Fractions and Decimals

• Model and describe one-half of a region (area).
• Model and describe one-half of a collection of objects.

Chance

• Use the language of likelihood.
• Make predictions and describe what is possible/impossible.
• Record outcomes of simple experiments.
• Relate fractions to the likely outcome of an experiment.

Patterns and Algebra

• Use hundred charts to explore counting patterns.
• Record relationship rules for addition and subtraction.
• Write related addition/subtraction facts.
• Use a balance situation to relate addition and subtraction and write equations.

Data

- Plan, collect and represent data.
- Interpret and construct block graphs.
- Read and interpret simple column graphs.
- Compare data in a column graph to analyse variation.

Measurement

Length, Area, Volume and Capacity, Mass

- Use the comparative language of volume (capacity) and mass.
- Investigate covering (area) and packing (volume).
- Cover 2D shapes.

Time

- Read and interpret a 12-month calendar.
- Relate digital and analogue o'clock times.
- Calculate hour-long intervals of time (on the hour).

Space and Geometry

2D and 3D Space

- Investigate covering 2D shapes.
- Examine nets of 3D objects.
- Analyse and recall properties of 3D objects.
- Visualise 3D objects.
- Identify 2D shapes in different orientations.
- Create tessellating designs using 2D shapes.

Position

There is no work done on Position for the second half of the year..

Stage 1B

FIRST HALF

Number

Whole Numbers

•   Sequence 2-digit numbers.
•   Compare 2-digit numbers.
•   Read and write hundreds.
•   Use pictures to write 3-digit numbers (easy examples, then numbers with teens and zeros).
•   Read and write 3-digit numbers without pictures.
•   Use counting strategies.
•   Use a number line to develop relative position for 2- then 3-digit numbers.

Addition and Subtraction

•   Relate operations.
•   Write related facts (near doubles then bridge-to-10 facts).
•   Use extended count-on strategy.
•   Use extended count-back strategy.
•   Extend near-doubles strategy to 2-digit numbers.
•   Use split and jump strategies to add 2-digit numbers (without, then with, bridging).
•   Use a nearby ten to add 2-digit numbers.
•   Use a bridge-to-10 strategy to subtract.
•   Use reference points to add.

Multiplication and Division

•   Use language of equal groups and arrays.
•   Relate the '' symbol to equal groups and arrays.
•   Use the turnaround idea to write related facts.

Fractions and Decimals

There is no work done on Fractions and Decimals for the first half of the year.

Chance

There is no work done on Chance for the first half of the year.

Patterns and Algebra

•   Describe repeating and growing patterns.
•   Build and extend growing patterns.
•   Build a growing pattern from repeating patterns.
•   Record patterns in table form.
•   Develop relationship rules.
•   Record input-output data (addition and subtraction).
•   Use number sentences to record addition/subtraction situations.
•   Write related addition and subtraction facts.
•   Use addition to undo subtraction.

Data

- Use tally charts.
- Interpret and construct column graphs.
- Interpret picture graphs (one-to-one).

Measurement

Length, Area, Volume and Capacity, Mass

- Work with a metre.
- Introduce centimetres (cm).
- Measure in centimetres.
- Make estimates involving metres and/or centimetres.
- Introduce litres.
- Work with litres.
- Make estimates involving litres.

Time

There is no work done on Time for the first half of the year.

Space and Geometry

2D and 3D Space

- Use geometric terms to describe 3D objects.
- Sort and classify 3D objects.
- Analyse the faces of 3D objects.
- Identify and draw 2D shapes by name.
- Identify and analyse features of 2D shapes.
- Find a line of symmetry in 2D shapes.
- Work with 2D shapes in different orientations.

Position

- Follow and give instructions to follow paths.
- Use simple maps.
- Explore alternative pathways.
- Use amounts of turn (full, half, quarter and three-quarter) to describe direction.
- Create a plan based on a model.
- Explore different viewpoints of objects.

SECOND HALF

Number

Whole Numbers

- Use place value to build numbers.
- Sequence 3-digit numbers.
- Compare 3-digit numbers.
- Order 3-digit numbers.
- Round numbers.
- Trade coins to $5 then $10 notes.
- Show equivalent amounts in dollars then in cents.
- Use different combinations of coins to make purchases.
- Read and write amounts in dollars and cents.
- Extend counting strategies.
- Use a number line to locate nearby hundreds.

Addition and Subtraction

- Relate operations.
- Write fact families.
- Use addition (count-on strategy) to subtract 2-digit numbers.
- Use a range of strategies to add and subtract (split, jump, compensation, bridge-to-10).
- Use an empty number line to model strategies for addition and subtraction.
- Use a reference point to help subtract.
- Use reference points to add/subtract.

Multiplication and Division

- Count by 2s, 5s and 10s.
- Use tens to multiply by 5.
- Use the turnaround idea to help learn facts.
- Use doubling to multiply by 2.
- Use a double-double strategy (4).
- Introduce the division symbol.
- Use materials to divide by 2, 4 or 5.
- Interpret remainders.
- Relate division to fractions.
- Relate division to multiplication.
- Write related facts.

Fractions and Decimals

- Model and describe one-half or one-quarter of a region (area).
- Model and describe one-half or one-quarter of a collection.

Chance

- Use the language of likelihood.
- Record outcomes.
- Make predictions based on outcomes of simple experiments.

Patterns and Algebra

- Determine output data from a given rule and known input data.
- Use the inverse operation to determine input data.
- Determine a rule from input/output data.

Data

- Work with column graphs.
- Interpret data in tables and charts.

Measurement

Length, Area, Volume and Capacity, Mass

- Use informal units of mass.
- Introduce kilograms.
- Work with a kilogram.
- Make estimates involving kilograms.
- Investigate covering and packing.
- Count squares to find the area.
- Count cubes to explore volume.

Time

- Read and interpret a 12-month calendar.
- Work with numbers of days in months.
- Read and interpret a simple timetable.
- Read half-past times.
- Relate half-past times to counting past the hour.
- Calculate intervals of time in whole hours.

Space and Geometry

2D and 3D Space

- Investigate covering 2D shapes.
- Build prisms to explore volume.
- Analyse the features of 3D objects.
- Make and draw 3D objects according to criteria.
- Visualise 3D objects.
- Draw 2D shapes according to criteria.
- Investigate line symmetry in 2D shapes.
- Separate and join 2D shapes to make new shapes.

Position

There is no work on Position in this half of the year.

Stage 2A

FIRST HALF

Number

Whole Numbers

- Locate 3- then 4-digit numbers on a number line.
- Sequence 3-digit numbers.
- Compare and order 3-digit numbers.
- Read and write thousands.
- Use pictures to write 4-digit numbers (easy then difficult examples).
- Read and write 4-digit numbers without pictures.
- Develop relative position for 3- then 4-digit numbers.

Addition and Subtraction

- Extend the count-on/back strategies with 2- and 3-digit numbers.
- Write related facts (near doubles, then bridge-to-10 facts).
- Reinforce and extend the near-doubles strategy to add 2-digit numbers.
- Use addition (count-on strategy) to subtract 2-digit numbers.
- Use jump and split strategies to add/subtract 2- and 3-digit numbers.
- Use a nearby ten to add numbers.
- Use a known subtraction fact to subtract 3-digit multiples of 10.
- Add tenths.
- Use reference points to add 3-digit numbers.
- Use a compensation strategy to add.

Multiplication and Division

- Relate the '' symbol to equal groups, an array and the collection model.
- Write related turnaround facts (2s and 5s).
- Extend a doubling strategy to 2-digit numbers.
- Multiply 2-digit numbers by 10 then 5.
- Use the double-double then double-double-double strategy to multiply by 4 and 8.
- Solve partitive and quotitive division problems.
- Relate halves and quarters to divide by 2 and 4.
- Work with remainders.

Fractions and Decimals

- Use common fractions in measurement situations and with classroom materials.
- Read and write common fractions.
- Introduce decimal fractions (tenths).
- Locate tenths on a number line.
- Use addition to develop place value involving tenths.

Chance

There is no work done on Chance for the first half of the year.

Patterns and Algebra

- Multiply by 1 then 0.
- Investigate multiplication patterns (9s).
- Relate growing patterns (odd numbers and square numbers).
- Build a growing pattern (triangular numbers).
- Record patterns in table form.

Data

- Read and interpret a horizontal column graph.
- Construct a vertical column graph.
- Interpret picture graphs (one-to-one).
- Collect and organise data in a table.
- Use a Venn diagram to analyse data.
- Compare data in tables or graphs to analyse variation.

Measurement

Length, Area, Volume and Capacity, Mass

- Work with metres and centimetres (including estimation).
- Use abbreviations 'm' and 'cm'.
- Express centimetres as metres and centimetres.
- Work with litres and fractions of a litre.
- Introduce millilitres (mL).
- Relate millilitres to litres.
- Work with kilograms and fractions of a kilogram.
- Introduce grams (g).
- Use practical situations involving kilometres.

Time

There is no work done on Time for the first half of the year.

Space and Geometry

2D and 3D Space

- Investigate polygons and non-polygons.
- Identify parallel sides and equal sides.
- Compare quadrilaterals (trapeziums, rhombuses and rectangles).
- Work with symmetrical and asymmetrical 2D shapes.
- Investigate horizontal, vertical and oblique lines.
- Explore tessellating shapes.
- Work with 2D shapes in different orientations.
- Work with amounts of turn (half, quarter and three-quarter).
- Work with right angles.

Position

- Work with amounts of turn (half, quarter and three-quarter) to describe direction.
- Work with clockwise and anticlockwise to describe direction.

SECOND HALF

Number

Whole Numbers

•   Use place value to build numbers.
•   Sequence 3- then 4-digit numbers.
•   Compare 4-digit numbers.
•   Order 3-digit numbers.
•   Round whole numbers.
•   Trade coins and write the total in dollars and cents.
•   Show equivalent values in dollars/cents.
•   Make purchases beyond $1.
•   Read and write dollars and cents.
•   Extend counting strategies.
•   Use a number line to locate nearby hundreds then thousands.

Addition and Subtraction

•   Count on from an amount of coins to a 2-digit price to calculate change.
•   Use reference points to add/subtract 3-digit numbers.
•   Use a count-on/back strategy to subtract 3-digit numbers (with and without bridging).
•   Use place value to subtract 2- then 3-digit numbers (without then with bridging).
•   Use compensation strategies to add/subtract.
•   Add and subtract decimal fractions (tenths).
•   Use magic squares to motivate the use of mental strategies.
•   Use the algorithm for addition and subtraction when mental computation is too difficult.

Multiplication and Division

•   Use a build-down strategy (9 facts) and then a build-up strategy (6 facts).
•   Extend the build-down and build-up strategies to 2-digit numbers.
•   Multiply 2-digit numbers by 5.
•   Introduce doubling-and-halving strategy to multiply.
•   Use place value to multiply 2-digit by 1-digit numbers.
•   Relate division to fractions.
•   Relate division to multiplication.
•   Find the missing factor.
•   Write fact families (2s and 5s).
•   Interpret remainders.

Fractions and Decimals

•   Use region and length models to relate fractions for common fractions and then decimal fractions.
•   Use a region model to work with halves and quarters.
•   Find halves or quarters of a collection.
•   Read and write decimals as tenths.

Chance

•   Use the language of likelihood (possible, impossible, certainly, likely, etc.).
•   Discuss the likelihood of outcomes.
•   Make predictions based on outcomes of simple experiments.

- Relate fractions to likelihood.

Patterns and Algebra

- Use a hundred chart to explore counting patterns.
- Extend relationship rules for multiplication and division.
- Use a balance situation to relate addition and subtraction and write equations.
- Use number sentences to record operations.
- Use addition to backtrack subtraction.
- Use a pan balance to work with inequalities.
- Introduce the '<' and '>' symbols and use with addition or subtraction.
- Introduce the '≠' symbol and use with addition or subtraction.

Data

There is no work done on Data for the second half of the year.

Measurement

Length, Area, Volume and Capacity, Mass

- Use decimal fractions to describe fractions of lengths, containers, or the mass of objects.
- Investigate covering and packing.
- Introduce square metres.
- Introduce square centimetres.
- Explore methods to calculate area of irregular shapes.
- Explore methods to calculate cubes in a 3D object.

Time

- Relate different units of time.
- Read and write times in minutes past the hour.
- Relate analogue and digital forms for times past the hour.
- Read and write times to the hour.

Space and Geometry

2D and 3D Space

- Investigate area of 2D shapes.
- Investigate volume of 3D objects.
- Analyse nets of 3D objects.
- Analyse prisms and pyramids.
- Use geometric terms (vertex, base and apex).
- Identify and draw 3D objects as seen from above and the side.
- Make 3D objects using a range of materials.

Position

- Use alphanumeric grids.
- Use grid references.
- Follow and give instructions to follow paths.
- Explore alternative pathways.
- Work with floor plans.
- Work with legends and symbols.
- Use four compass points to describe direction (north, south, east and west).

Stage 2B

FIRST HALF

Number

Whole Numbers

•   Locate 4-digit numbers on a number line.
•   Sequence 4-digit numbers.
•   Compare/order 4-digit numbers.
•   Read and write 4-digit numbers.
•   Develop place-value patterns to read large numbers.
•   Use place value to build numbers.

Addition and Subtraction

•   Use split, jump and compensation strategies to add whole numbers.
•   Find compatible pairs to add whole numbers then tenths.
•   Use a compensation strategy to add dollars and cents.
•   Use split, jump and compensation strategies to subtract whole numbers, tenths, and dollars and cents.
•   Use addition (count-on strategy) to subtract 2-digit numbers.
•   Use written methods to add or subtract 3-digit numbers.

Multiplication and Division

•   Use a known fact or factors to multiply.
•   Multiply with 3 factors.
•   Reinforce connection between '' and '÷'.
•   Use a 'think multiply' strategy to divide.
•   Write fact families (4s, 8s, 6s and 9s).
•   Extend doubling and halving strategies.
•   Use place value to multiply by a 1-digit whole number or dollars and cents.
•   Find multiples and factors.
•   Divide by 2 or 4 to find halves and quarters of 2-digit numbers.
•   Work with remainders.
•   Use written methods to multiply.
•   Investigate factors and multiples, and search for prime numbers.

Fractions and Decimals

•   Read and write common fractions.
•   Explore equivalence of common fractions.
•   Locate tenths on a number line.
•   Compare tenths.
•   Introduce hundredths.
•   Read and write decimals to hundredths.
•   Find halves and quarters of collections.
•   Use a range of representations (whole numbers and fractions).

Chance

There is no work on Chance for the first half of the year.

Patterns and Algebra

- Investigate multiplication patterns.
- Relate growing patterns (even numbers and rectangular numbers).
- Build a growing pattern (square and triangular numbers).
- Relate square and triangular numbers.
- Search for patterns in a number grid.

Data

- Construct and interpret horizontal and vertical column graphs.
- Construct and interpret picture graphs.
- Interpret a two-way table.
- Collect/organise data in tables or graphs.
- Analyse variation in data.

Measurement

Length, Area, Volume and Capacity, Mass

- Work with metres and centimetres.
- Work with tenths of a metre using the abbreviations 'm' and 'cm'.
- Work with tenths of a litre.
- Express millilitres as litres, and vice versa.
- Relate tenths of a litre to millilitres.
- Investigate perimeter.
- Find area of compound and irregular shapes.
- Create shapes with equivalent area.
- Begin to use multiplication to count cubes in rectangular prisms.

Time

There is no work done on Time for the first half of the year.

Space and Geometry

2D and 3D Space

- Investigate perimeter of polygons.
- Work with area of unusual shapes.
- Find volume of rectangular-based prisms.
- Classify 2D shapes.
- Copy, enlarge and reduce 2D shapes.
- Investigate multiple lines of symmetry.
- Draw 2D shapes after a single flip, slide or turn.
- Work with 2D shapes in different orientations.
- Investigate the relationships between quadrilaterals.

Position

- Describe key amounts of turn in degrees (90, 180, 270, 360).
- Relate the cardinal compass points to amount of turn in degrees.
- Use eight major compass points to give and follow instructions.
- Interpret and use legends to identify locations on maps.
- Use and create maps and plans.
- Analyse alternative pathways.

SECOND HALF

Number

Whole Numbers

- Read and write amounts in dollars/cents.
- Extend counting strategies.
- Sequence, compare and order 4-digit numbers.
- Introduce 10 000.
- Use a number line to locate nearby whole numbers.
- Investigate Roman numerals.

Addition and Subtraction

- Use a count-on/back strategy to subtract 3-digit numbers (with/without bridging).
- Use reference points to add or subtract 3-digit numbers.
- Use compensation strategies to add or subtract.
- Count on from an amount of coins to a dollars and cents price.
- Calculate change from any coin amount.
- Calculate best buys.
- Use place value to subtract 2- then 3-digit numbers (without, then with, bridging).
- Add and subtract decimal fractions (tenths then hundredths).
- Use the algorithm for addition and subtraction when mental computation is too difficult.

Multiplication and Division

- Explore patterns to multiply.
- Use place value to multiply by a 1-digit number (whole numbers or tenths).
- Reinforce 'think multiply' to divide.
- Use doubling and halving strategies to multiply.
- Use halving to divide by 4.
- Use place value to divide 2- then 3-digit numbers.
- Use a break-up strategy to divide.
- Divide dollars and cents.
- Develop divisibility rules.
- Find the missing factor.
- Record steps to divide (whole numbers and dollars and cents).
- Interpret and record remainders.

Fractions and Decimals

- Compare and order hundredths.
- Use a region model to relate common and decimal fractions.
- Read and write decimal fractions to hundredths.
- Locate hundredths on a number line and find a nearby tenth.
- Use a number line to locate nearby whole numbers or tenths.
- Introduce percentages.

Chance

- Extend the language of chance.
- List possible outcomes (combinations).
- Conduct experiments and relate to fractions.

Patterns and Algebra

- Interpret symbols that represent unknowns.
- Balance equations involving multiplication.
- Relate multiplication and division.
- Use a balance situation to write equations using '=', '<' and '>' with operations.
- Use the inverse operation.
- Use '=', '≠', '<' and '>' symbols.
- Write related multiplication and 'facts.

Data

There is no work done on Data for the second half of the year.

Measurement

Length, Area, Volume and Capacity, Mass

- Work with kilograms and/or tenths of a kilogram.
- Relate tenths of a kilogram to grams.
- Read measurement instruments in tenths (length, mass, volume).
- Choose sensible units.
- Use mass/capacity to calculate best buys.

Time

- Write dates.
- Relate times past and to the hour.
- Read all time formats.
- Construct a timeline.
- Read and interpret a timetable.
- Introduce a.m. and p.m. times.

Space and Geometry

2D and 3D Space

- Explore different types of triangles.
- Investigate tessellating shapes.
- Find perpendicular lines.
- Identify interior and exterior angles.
- Informally compare, measure and identify angles, including right angles.
- Sort and analyse 3D objects.
- Investigate cross-sections of prisms and pyramids.
- Draw 3D objects to show depth.
- Draw 3D objects as seen from above, the side and the front.

Position

There is no work done on Position for the second half of the year.

Stage 3A

FIRST HALF

Number

Whole Numbers

- Read and write 5- then 6-digit numbers.
- Locate 5- then 6-digit numbers on a number line.
- Compare, order and sequence 5- then 6-digit numbers.
- Use place value to build 6-digit numbers.
- Calculate change.
- Use a number line to locate nearby whole numbers or tenths.
- Reinforce the idea of relative position.
- Explore number systems from other cultures (Chinese, Egyptian, Ancient Roman).

Addition and Subtraction

- Use a range of strategies to add/subtract 3- and 4-digit numbers and tenths.
- Add more than two addends.
- Use compatible pairs to add.
- Use the round-and-adjust strategy to add or subtract tenths, hundredths and dollars and cents.
- Use place-value and count-on strategies to subtract whole numbers, tenths and dollars and cents.
- Calculate best buys.
- Record steps to add or subtract 3-digit numbers.

Multiplication and Division

- Investigate patterns made by multiples.
- Use compatible factors to multiply.
- Use factors to multiply.
- Extend doubling and halving strategies.
- Use place value to multiply whole numbers or dollars and cents by a 1-digit number.
- Use place value to multiply by a 2-digit number.
- Use a break-up strategy to divide.
- Find factors and build factor trees.
- Record steps to multiply.

Fractions and Decimals

- Relate common and decimal fractions (regions and number lines).
- Introduce thousandths.
- Read and write decimal fractions to thousandths.
- Locate tenths, hundredths and thousandths on a number line.
- Relate tenths, hundredths and thousandths.
- Work with percentage.
- Work with equivalence.
- Relate percentage to fractions.

Chance

- List possible outcomes.
- Describe the range of possible outcomes.

Patterns and Algebra

- Analyse patterns made by multiples within, then beyond, the facts.
- Solve number puzzles involving even and odd, and square and triangular numbers.
- Use graphs to record and interpret rules involving ordered pairs.
- Work with square, oblong and triangular numbers.
- Generalise and write relationship rules across a range of situations.
- Record input/output data (two operations).
- Investigate patterns and rules with two operations.
- Write number sentences with two operations.
- Solve number puzzles with unknowns.
- Check solutions by substituting answers.
- Use the inverse operation.

Data

- Plot pairs of numbers on a graph.
- Construct and interpret horizontal and vertical column graphs.
- Collect and organise data in tables or graphs.
- Analyse variation in data.
- Introduce, construct and interpret line graphs.
- Interpret pie graphs.

Measurement

Length, Area, Volume and Capacity, Mass

- Relate and convert between metres, centimetres and millimetres.
- Express centimetres and metres as fractions of a metre.
- Relate units of length, volume and mass.
- Describe grams/millilitres as thousandths of a kilogram/litre.
- Relate mass and volume.
- Measure to find perimeter.
- Compare areas of polygons.
- Investigate area of rectangles.
- Use multiplication to count cubes in rectangular prisms.
- Count squares to find the area of compound shapes.

Time

There is no work done on Time for the first half of the year.

Space and Geometry

2D and 3D Space

- Identify and analyse isosceles, equilateral and scalene triangles.
- Work with diagonal lines.
- Investigate line and rotational symmetry.
- Visualise and draw 2D shapes in different orientations.
- Join 2D shapes to make new shapes.

- Investigate perpendicular lines and faces.
- Identify angles with 2 or 1 angle arms.
- Use a protractor to measure angles.

Position

- Introduce the degrees symbol.
- Estimate and measure angles in degrees.
- Identify angles that are acute, right, obtuse, straight, reflex or revolutions.

SECOND HALF

Number

Whole Numbers

• Analyse symmetry of place value system.
• Round to nearest whole number or tenth.
• Explore number systems from other cultures (Egyptian).

Addition and Subtraction

• Continue to use a range of strategies to add or subtract whole numbers mentally.
• Add more than two addends.
• Add and subtract decimal fractions (tenths then hundredths).
• Record steps to add or subtract 3- and 4-digit numbers, dollars and cents, and decimal fractions.
• Use the algorithm for addition and subtraction when mental computation is too difficult.

Multiplication and Division

• Use patterns to multiply or divide.
• Use place value to multiply any number by a 1-digit number.
• Use double-double to multiply.
• Use place value to divide.
• Round and adjust to multiply.
• Multiply by multiples of 10.
• Interpret amounts left over.
• Use a break-up strategy to divide.
• Introduce the concept of rate (distance/price).
• Calculate best buys.
• Record steps to multiply or divide (whole numbers and dollars and cents).
• Use the algorithm for multiplication and division when mental computation is too difficult.

Fractions and Decimals

• Compare and order thousandths.
• Read and write decimal fractions to thousandths.
• Locate hundredths on a number line and find a nearby tenth.
• Use the number line to relate fractions (proper and improper forms).
• Explore equivalence.
• Relate decimal fractions to common fractions, and vice versa.

Chance

• Use the language of chance and likelihood.
• List possible outcomes (combinations).
• Relate fractions to probability.
• List commonly used 'chance words' on a number line.

Patterns and Algebra

• Investigate patterns and rules with two operations.
• Construct and solve number sentences with more than one operation.
• Use the inverse operation.

- Use '=', '<' and '>' symbols.
- Construct number sentences to match story problems involving an unknown.

Data

- Interpret, collect and represent data in column graphs.
- Interpret and construct line graphs.
- Analyse variation in data.
- Introduce and work with the mean.
- Analyse range and mean of data represented in a column graph.
- Construct and interpret many-to-one picture graphs.

Measurement

Length, Area, Volume and Capacity, Mass

- Work with metres and kilometres to thousandths.
- Relate thousandths of a kilogram to grams.
- Introduce the tonne (t).
- Explore the connection between perimeter and area.
- Find the area of rectangles (m^2).
- Find the area of compound shapes.
- Introduce the hectare (ha) and square kilometer (km^2).

Time

- Work with a calendar.
- Convert a number of days to weeks or months, and vice versa.
- Read and write times described or represented in any form.
- Draw hands on a clock to indicate time.
- Relate units of time (minutes in a day, etc.).
- Construct a timeline (years and centuries).
- Read and interpret a timetable.

Space and Geometry

2D and 3D Space

- Identify and draw regular 2D shapes.
- Use geometric tools to draw regular and irregular 2D shapes.
- Identify and analyse a range of 3D objects.
- Sort and classify prisms and pyramids.
- Analyse nets of prisms and pyramids.
- Create models, nets and drawings of 3D objects.

Position

- Use eight compass points to describe direction.
- Work with ordered pairs in a coordinate grid.
- Use simple scales on maps.
- Describe paths using a range of terminology.

Stage 3B

FIRST HALF

Number

Whole Numbers

• Read and write whole numbers from any everyday situation.
• Locate numbers of any size on a number line.
• Compare, order and sequence numbers of any size.
• Reinforce place value patterns.
• Reinforce the idea of relative position.
• Explore number systems from other cultures (Mayan).

Addition and Subtraction

• Reinforce the use of multiple strategies to add or subtract manageable whole numbers and decimal fractions.
• Use the round-and-adjust strategy to add or subtract tenths, hundredths, and dollars and cents.
• Use place-value and count-on strategies to subtract whole numbers, tenths, and dollars and cents.
• Record steps to add or subtract whole numbers and decimal fractions.

Multiplication and Division

• Extend the use of compatible factors to multiply.
• Extend build-up/down strategies ($\times$ 19, etc.).
• Use multiple methods to multiply mentally.
• Use place value to multiply by a 2-digit number.
• Solve problems involving key percentages.
• Find factors and build factor trees.
• Calculate rate (speed/time).
• Formally relate multiplication of unit fractions to division.
• Record steps to multiply or divide.
• Use a break-up strategy and factors to divide.
• Use equivalent expressions to divide.
• Investigate remainders.

Fractions and Decimals

• Read and write decimal fractions to thousandths.
• Locate tenths, hundredths and thousandths on a number line.
• Relate tenths, hundredths and thousandths.
• Relate key percentages to common and decimal fractions.
• Find equivalent common and decimal fractions.
• Add and subtract equivalent common fractions.

Chance

There is no work on Chance in this half of the year.

Patterns and Algebra

- Investigate patterns made by sequences of polygonal numbers.
- Graph ordered pairs from rules (one or two operations).
- Use rules to create sets of data.
- Write relationship rules across a range of situations.
- Use number sentences to record any of the four operations.
- Work with unknowns.

Data

- Construct and interpret column graphs.
- Construct and interpret divided bar graphs.
- Interpret picture graphs.
- Interpret combined data in column graphs.
- Work with the mean.

Measurement

Length, Area, Volume and Capacity, Mass

- Relate all units of length using whole numbers or decimal fractions.
- Introduce m^3 and cm^3.
- Formalise the relationship between units of length, volume and mass using m^3 and cm^3 as the base units.
- Develop rules to find perimeter of rectangles.
- Relate m^2, ha and km^2.

Time

There is no work done on Time for the first half of the year.

Space and Geometry

2D and 3D Space

- Identify and analyse parts of a circle (radius, diameter, centre, circumference, sector and quadrant).
- Classify 2D shapes.
- Explore combinations of flips, slides and turns.
- Investigate diagonals and angle properties of quadrilaterals.
- Investigate properties of tessellating 2D shapes.
- Analyse links between line symmetry and rotational symmetry.
- Estimate, measure and deduce angle size.
- Investigate angles with no visible angle arms.

Position

There is no work done on Position for the first half of the year.

SECOND HALF

Number

Whole Numbers

There is no work done on Whole Numbers for the first half of the year.

Addition and Subtraction

- Use multiple strategies to add or subtract whole numbers and decimal fractions.
- Reinforce the recording of addition and subtraction.
- Use the algorithm for addition and subtraction when mental computation is too difficult.

Multiplication and Division

- Use place value to multiply any number by a 2-digit number.
- Use place value and a break-up strategy to divide.
- Round and adjust to multiply.
- Solve percentage problems.
- Establish all useful divisibility rules.
- Extend the break-up strategy to divide.
- Calculate rate (speed/price).
- Work with amounts left over.
- Work with ratio problems.
- Introduce proportion.
- Calculate best buys.
- Develop steps to multiply or divide.
- Use the algorithm for multiplication and division when mental computation is too difficult.

Fractions and Decimals

- Compare and order any combination of decimal fractions.
- Adjust numbers to any useful place.
- Locate decimals on a number line.
- Use the number line to relate fractions (proper and improper forms).
- Work with key percentages.
- Extend work with the relationship between decimal fractions and common fractions, and vice versa.
- Use percentage with simple interest.
- Formalise equivalence of percentage, and common and decimal fractions.
- Add and subtract related common fractions.

Chance

- Use frequency tables to assign probability values expressed as fractions or percentage.
- Relate the language of likelihood to experimental outcomes and probability values.

Patterns and Algebra

- Reinforce relationship rules.
- Describe and then write a relationship rule as an equation (one or two operations).
- Work backwards for rules involving one or two operations.
- Explore order conventions for operations.
- Explore strategies to solve equations (balance and work backwards).

Data

- Construct and interpret line graphs.
- Use a coordinate system to plot ordered pairs of numbers and relate to rules.
- Interpret data in a pie graph in terms of percentage.
- Analyse variation in data using range.

Measurement

Length, Area, Volume and Capacity, Mass

- Relate units of length, volume and mass.
- Use m^3 and cm^3.
- Develop rules to find the area of rectangles and regular polygons.

Time

- Read and write 24-hour times.
- Identify times with Australian time zones.
- Calculate times across Australian time zones.
- Calculate times from a timetable.
- Construct a timeline and calculate elapsed time.

Space and Geometry

2D and 3D Space

- Make a 3D object given a picture.
- Draw 3D objects from different viewpoints.
- Make and classify 3D objects.
- Analyse plane-sections of 3D objects.
- Work with enlargements and reductions of 2D shapes and maps.

Position

- Label and use coordinate grids.
- Use scales on maps to calculate distance.
- Use and create maps.
- Identify locations drawn to different scales.
- Consider the level of detail of different maps.
- Explore scale and distortion on world maps.

The 2002 New South Wales *Mathematics K–6 Syllabus* identifies the five aspects of Working Mathematically — **Questioning**, **Applying Strategies**, **Communicating**, **Reasoning** and **Reflecting** — as essential elements of learning that should be embedded in all teaching and learning activities. This philosophy has been adopted by the *GO Maths* core program.