***Maths My Way* 4th Class Yearly Plan**

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|  | **Strand and Strand Unit** | **Unit** | **Learning Outcomes** | **Mathematical Language** | **Focus of New Learning** |
| September | All | 1. Let’s Get Started | Revision | Revision | Revision |
| **Number**:  Place Value and Base Ten | 1. Place Value | Explore equivalent numerical expressions of numbers using the base ten system. | place value, ones, tens, hundreds, thousands, part-whole model, smallest, greatest, smaller, greater, rounding | 1. Identify and describe place value in 4-digit whole numbers up to at least 9,999. |
| 1. Partition and regroup 4-digit whole numbers in more than one way. |
| 1. Compare and order whole numbers up to 9,999. |
| 1. Round numbers to the nearest 10, 100 or 1,000. |
| **Algebra**:  Patterns, Rules and Relationships | 1. Patterns | Identify rules that describe the structure of a pattern and use these rules to make predictions. Represent the relationships between quantities. | pattern, rule, predict, growing, shrinking, distributive, associative, geometric, systematic, factor, factor pair, rule, sequence, product | 1. Use a systematic approach to identify the factors of a number. |
| 1. Investigate the associative property of multiplication. |
| 1. Use the distributive property to solve problems. |
| 1. Represent and record structures and rules of patterns in a variety of ways. |
| **Number**:  Sets and Operations | 1. Addition | Understand and apply flexibly the four operations; and the relationships between operations. | addition sentence, calculator, estimate, round, add, total, sum, column addition, check | 1. Begin to use a calculator, estimating to check if answers are reasonable. |
| 1. Estimate totals and use mental methods and calculators to check. |
| 1. Choose efficient methods to add within 9,999, including written (no renaming). |
| 1. Choose efficient methods to add within 9,999, including written (renaming). |
| October | **Number**:  Sets and Operations | 1. Subtraction | Understand and apply flexibly the four operations; and the relationships between operations. | subtract, difference, subtraction sentence, column subtraction, left over, rename | 1. Estimate differences and use calculators to check reasonableness of estimates. |
| 1. Choose efficient methods to subtract within 9,999, without renaming. |
| 1. Choose efficient methods to subtract within 9,999 with renaming. |
| 1. Solve problems with more than 1 step, involving addition and subtraction. |
| **Measures**:  Time | 1. Time 1 | Compare, approximate and measure time using appropriate units of measurement.  Identify the relationship between different units and representations of time. | o'clock, minute, hour, past, to, quarter, digital, analogue, timetable, earlier, later, before, after, 24-hour clock, 12-hour clock | 1. Read and record time in 1-minute intervals on analogue and digital clocks. |
| 1. Explore the relationship between 12-hour and 24-hour times on digital clocks. |
| 1. Explore relationships between 12-hour and 24-hour times on analogue and digital clocks. |
| 1. Approximate durations of events. |
| **Number**:  Fractions | 1. Fractions 1 | Compare and express in equivalent terms; and order fractions. | half, quarter, third, sixth, twelfth, whole, fraction, number sentence, improper fraction, mixed number, equivalence, fraction family | 1. Explore fractions of a whole and equivalences, incl. thirds, sixths, twelfths. |
| 1. Identify and represent equivalence in fraction families. |
| 1. Compare and order unit and non-unit fractions with different denominators. |
| 1. Compare equivalent improper fractions and mixed numbers. |
| **Shape and Space**:  Shape | 1. 2D Shapes | Investigate and analyse the properties of 3-D and 2-D shapes and identify classes of shapes based on these properties. Represent shapes with drawings and models, and calculate dimensions of shapes. | polygon, 2D, side, vertex (vertices), triangle, quadrilateral, regular, irregular, property, parallel, angle, right angle, acute, obtuse, reflex, isosceles, equilateral, scalene, tangram | 1. Estimate angles and use appropriate measuring devices to compare them. |
| 1. Compare and classify triangles, based on their properties. |
| 1. Compare and classify quadrilaterals, based on their properties. |
| 1. Visualise and make conjectures about the possible effects of manipulating shapes. |
| **Autumn Assessment** | | | | | |

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|  | **Strand and Strand Unit** | **Unit** | **Learning Outcomes** | **Mathematical Language** | **Focus of New Learning** |
| November | **Number**:  Sets and Operations | 1. Multiplication and Division Facts | Understand and apply flexibly the four operations; and the relationships between operations. | group, set, repeated addition, multiplication sentence, times table, double, array, partition, fact family table, product | 1. Use known multiplication facts to calculate unknown multiplication facts. |
| 1. Make connections between related multiplication tables. |
| 1. Link multiplication and division facts. |
| 1. Find related multiplication and division facts and use them to solve problems. |
| **Measures**:  Measuring | 1. Length | Compare, estimate and measure length, weight, capacity, area and volume using appropriate instruments and record and communicate appropriately.  Identify the relationship between equivalent units of measurement, and rename measures using equivalent units. | length, measure, estimate, millimetre, centimetre, metre, measuring wheel, metre stick, ruler, regular, taller, high, higher, long, longer, longest, convert, perimeter, polygon | 1. Explore the relationship between centimetres and millimetres. |
| 1. Estimate, measure, compare and order lengths. |
| 1. Add and subtract lengths. |
| 1. Estimate and measure perimeters of polygons. |
| **Number**:  Sets and Operations | 1. Division 1 | Understand and apply flexibly the four operations; and the relationships between operations. | share, split, equally, group, division sentence, multiplication sentence, number problem, remainder, divisible, multiple, odd, even | 1. Recognise divisibility for multiples of 2 and 4. |
| 1. Recognise divisibility for multiples of 5, 10, 3, 6 and 9. |
| 1. Use different methods and reason to solve division problems incl. remainders. |
| 1. Use divisibility rules and multiples to divide partitioned numbers. |
| **Measures**:  Measuring | 1. Area | Compare, estimate and measure length, weight, capacity, area and volume using appropriate instruments and record and communicate appropriately. | area, space, tangram, square metre, square centimetre, estimate, measure, rectangle, square, calculate, sequence, centimetre-squared paper | 1. Understand area as the amount of space covered. |
| 1. Compare and order areas using standard and non-standard units. |
| 1. Measure the area of shapes on a centimetre-squared grid. |
| 1. Find the area of squares and rectangles. |
| December | **Number**:  Sets and Operations | 1. Multiplication 1 | Understand and apply flexibly the four operations; and the relationships between operations. | set, group, addition sentence, multiplication sentence, greater than, less than, equal to, times table, array, partition | 1. Use partitioning to simplify 2-digit by 1-digit multiplications. |
| 1. Make connections between 2-digit by 1-digit and 3-digit by 1-digit multiplication. |
| 1. Use an expanded written method for 2- and 3-digit by 1-digit multiplication. |
| 1. Use a compact written method for 2- and 3-digit by 1-digit multiplication. |
| **Data and Chance**:  Data | 1. Data | Pose questions of interest and collect, display and critically analyse data in a range of ways for a range of purposes and communicate the findings. | question, relevant, survey, collect, tally, record, data, multiple bar chart, tally chart, similarity, difference, represent, scale, key, median, mode, range, statement, analyse, conclusion | 1. Identify and pose appropriate questions to gather data. |
| 1. Collect data to answer a question. |
| 1. Display data in a multiple bar chart. |
| 1. Analyse and draw conclusions from collected data, exploring the mode, range and median of the data. |
| **Winter Assessment** | | | | | |

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| January | **Number**:  Sets and Operations | 1. Multiplication 2 | Understand and apply flexibly the four operations; and the relationships between operations. | set, group, addition sentence, multiplication sentence, product, partial product, times table, array, partition, grid method, expanded written method, multiples | 1. Multiply with multiples of 10. |
| 1. Use arrays and calculate partial products to complete 2-digit × 2-digit multiplications. |
| 1. Calculate partial products to complete 2-digit × 2-digit multiplications. |
| 1. Use expanded written methods to complete 2-digit × 2-digit multiplication. |
| **Measures**:  Time | 1. Time 2 | Compare, approximate and measure time using appropriate units of measurement.  Identify the relationship between different units and representations of time. | o'clock, minute, hour, past, to, quarter, digital, analogue, timetable, earlier, later, before, after, 24-hour clock, 12-hour clock, quickest, slowest, duration | 1. Solve problems involving the addition of units of time. |
| 1. Solve problems involving the subtraction of units of time. |
| 1. Solve problems involving time durations. |
| 1. Solve problems involving adding and subtracting units of time and calculating time durations. |
| **Number**:  Sets and Operations | 1. Multiplication 3 | Understand and apply flexibly the four operations; and the relationships between operations. | set, group, multiplication sentence, product, partial product, times table, estimate, partition, grid method, expanded written method, compact written method, multiples | 1. Use a compact written method for 2-digit × 2-digit multiplication. |
| 1. Use expanded written methods for 3-digit × 2-digit multiplication. |
| 1. Use a compact written method for 3-digit × 2-digit multiplication. |
| 1. Choose methods to use for multiplication. |
| **Data and Chance**:  Chance | 1. Chance | Describe and test predictability and (un)certainty in events. | likely, unlikely, even, probability, chance, likelihood, certain, possible, impossible, predict, fair, unfair, event, equal, outcomes, predicted outcomes, actual outcomes, least, most | 1. Use mathematical language to describe the likelihood of events. |
| 1. Rank possible events in order of their likelihood. |
| 1. Conduct a dice investigation (predict likelihood, then test, and compare results). |
| 1. Compare experimental values with theoretical values of an investigation. |
| February | **Shape and Space**:  Shape | 1. 3D Shapes | Investigate and analyse the properties of 3-D and 2-D shapes and identify classes of shapes based on these properties.  Represent shapes with drawings and models, and calculate dimensions of shapes. | polyhedron, 3D, cone, cube, pyramid, cylinder, cuboid, sphere, 2D, polygon, face, edge, vertices (vertex), square-based, pentagon-based, hexagon-based, triangle-based, prism, net, curved surface, octahedron | 1. Sort and classify shapes according to multiple properties and rules. |
| 1. Represent logical classification of shapes on suitable diagrams or tables. |
| 1. Devise nets for simple 3D shapes. |
| 1. Construct and de-construct 3D shapes from net designs. |
| **Number**:  Sets and Operations | 1. Division 2 | Understand and apply flexibly the four operations; and the relationships between operations. | share, split, equally, group, division sentence, multiplication sentence, number problem, remainder, divisible, multiple, odd, even, short division | 1. Divide using short division, including one exchange and remainders. |
| 1. Divide using short division, including more than one exchange and remainders. |
| 1. Complete calculations using short division and represent them pictorially. |
| 1. Solve problems involving division. |

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| March | **Number**:  Fractions | 1. Fractions 2 | Compare and express in equivalent terms; and order fractions.  Calculate the fraction of quantities and express in multiple ways. | half, third, quarter, fifth, sixth, eighth, ninth, tenth, twelfth, whole, fraction, unit fraction, non-unit fraction, improper fraction, mixed number, equivalence, fraction family, bar model | 1. Represent and calculate fractions of quantities for non-unit fractions. |
| 1. Given the unit fraction of a whole, calculate the whole. |
| 1. Add and subtract fractions with the same denominators. |
| 1. Add and subtract fractions with unlike denominators. |
| **Measures**:  Measuring | 1. Capacity | Compare, estimate and measure length, weight, capacity, area and volume using appropriate instruments and record and communicate appropriately. | capacity, volume, estimate, litre, millilitre, mixed number, smaller/greater, smallest/greatest, scale, interval, accurate, difference, tenth, quarter, fifth, hundredth | 1. Understand the relationship between capacity and volume of liquids. |
| 1. Convert between litres and millilitres. |
| 1. Estimate, measure, compare and order capacities/volumes. |
| 1. Solve capacity and volume problems. |
| **Number**:  Place Value and Base Ten | 1. Decimals | Explore equivalent numerical expressions of numbers using the base ten system. | 100-grid, fraction, decimal, decimal number, place value, digit, part, whole, tenths, hundredths | 1. Make connections between fractional and decimal hundredths. |
| 1. Express known fractions as decimals, e.g. = 0.25 =. |
| 1. Understand that decimal numbers can be represented in different ways. |
| 1. Round numbers with one decimal place to the nearest whole number. |
| **Algebra**:  Expressions and Equations | 1. Expressions and Equations | Represent and express problems with known and unknown values in different ways to include the use of appropriate letter-symbols or words. | multiply, divide, expression, express, equation, unknown, phrase, symbol, values, substitute, product, pattern, greater, smaller, possible, rule, sequence, term | 1. Generate tables and word and symbolic expressions for the structure of patterns. |
| 1. Substitute values for variables and investigate the impact on results or outputs. |
| 1. Apply multiplication and division properties to find an unknown value. |
| 1. Generate a pattern in shapes from a function. |
| **Spring Assessment** | | | | | |
| April | **Number**:  Sets and Operations | 1. Add and Subtract with Decimals | Understand and apply flexibly the four operations; and the relationships between operations. | decimal, decimal number, tenth, hundredth, whole, addition sentence, inverse, fact family, column method, total, difference, estimate, reasonable | 1. Add pairs of hundredths that total 1 and subtract hundredths from 1. |
| 1. Add hundredths within 1 and subtract hundredths from a number less than 1. |
| 1. Add decimal numbers to two decimal places with whole amounts greater than 1. |
| 1. Find the difference between pairs of number with 2 decimal places. |
| **Shape and Space**:  Transformation | 1. Transformation | Model and explain the effects of transformations on shapes and line segments. | transform, transformation, reflect, reflection, rotate, rotation, translate, translation, clockwise, anticlockwise, horizontal, vertical, mirror line, rotational symmetry, order of rotational symmetry, degree of rotational symmetry, pentomino, tessellate, tangram | 1. Interpret and follow simple instructions to transform shapes. |
| 1. Explore rotational symmetry, identifying the order and angle of rotation. |
| 1. Explore tessellation using one or more geometric shapes. |
| 1. Manipulate shapes to solve tangram problems. |

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| May | **Measures**:  Money | 1. Money 1 | Transfer knowledge of the base ten system in number to monetary contexts and use for purposes of calculation. | estimate, actual, calculate, value, total value, cost, amount, change, spend, euro, cent, price, note, coin, save, altogether, smallest, largest, combination, offer, discount | 1. Combine coins and notes to make given amounts. |
| 1. Estimate and calculate a monetary total. |
| 1. Estimate, then solve problems involving addition and subtraction. |
| 1. Explore addition and subtraction within a problem-solving context, with a focus on better value. |
| **Number**:  Sets and Operations | 1. Multiply and Divide with Decimals | Understand and apply flexibly the four operations; and the relationships between operations. | decimal, decimal number, decimal point, tenth, hundredth, multiply, divide, inverse, related calculation, written method, estimate, partition | 1. Use known facts and understanding of place value to multiply decimal numbers. |
| 1. Divide decimal numbers by a 1-digit number using known facts. |
| 1. Multiply decimal numbers using partitioning and a written method. |
| 1. Divide decimal numbers using base ten blocks and a written method. |
| **Shape and Space**:  Spatial Awareness and Location | 1. Spatial Awareness and Location | Describe, interpret and record directional instructions and location.  Compare and classify angles, recognising them as a property of a shape and as a description of a turn. | angle, acute, obtuse, reflex, degrees, estimate, angle measurer, protractor, greatest, smallest, cardinal directions, north, north-east, east, south-east, south, south-west, west, north-west, compass, approximately, kilometres, distance, grid reference, scaled map | 1. Identify and classify angles as acute, obtuse or reflex. |
| 1. Use a protractor to test estimations; to compare and order angles. |
| 1. Interpret scale and cardinal directions to discuss location and give directions. |
| 1. Create scale drawings where the relative size and position of key elements are reasonably precise. |
| **Measures**:  Money | 1. Money 2 | Transfer knowledge of the base ten system in number to monetary contexts and use for purposes of calculation. | estimate, actual, multiply, divide, share evenly, calculate, value, amount, change, euro, cent, note, coin, altogether, sale, fair, earn, minimum, better/best/least value, unit price | 1. Solve and complete practical money problems and tasks involving multiplication. |
| 1. Solve and complete practical money problems and tasks involving division. |
| 1. Compare the value of items by calculating their unit price. |
| 1. Solve and complete practical problems involving money. |
| June | **Measures**:  Measuring | 1. Weight | Compare, estimate and measure length, weight, capacity, area and volume using appropriate instruments and record and communicate appropriately.  Identify the relationship between equivalent units of measurement, and rename measures using equivalent units. | weigh, weight, estimate, kilogram (kg), gram (g), metric unit, lighter/heavier, lightest/heaviest, mechanical scale, digital scale, interval, accurate, double number line, mixed number, maximum, total | 1. Estimate and measure weights in grams and kilograms. |
| 1. Convert between kilograms and grams. |
| 1. Estimate, compare and order weights. |
| 1. Solve weight problems. |
| All | 1. Let’s Look Back | Revision | Revision | Revision |
| **Summer Assessment** | | | | | |