***Maths My Way* 6th 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, ten thousands, hundred thousands, millions, part-whole model, smallest, greatest, smaller, greater, rounding | 1. Identify and describe place value in 6- and 7-digit whole numbers. |
| 1. Compare and order numbers up to 999,999 and beyond. |
| 1. Round numbers to the nearest 10, 100, 1,000, 10,000, 100,000 or 1,000,000. |
| 1. Estimate by rounding and then solve addition and subtraction problems. |
| **Algebra**:  Patterns, Rules and Relationships | 1. Algebra 1 | Identify, explain and apply generalisations.  Represent mathematical structures in multiple ways. | positive, negative, number line, pattern, sequence, product, square number, triangular number, cube, power, square root | 1. Add and subtract positive and negative numbers on a number line. |
| 1. Explore square numbers and square roots. |
| 1. Write and calculate whole numbers in exponential form. |
| 1. Explore patterns with numbers written in exponential form. |
| **Number**:  Sets and Operations | 1. Factors, Multiples and Primes | Build upon, select and make use of a range of operation strategies. | multiplication, multiple, product, factor, factor pair, factor tree, prime, composite, highest common factor, lowest common multiple, index notation | 1. Explore factors and identify highest common factors, within 100. |
| 1. Explore multiples and identify lowest common multiples, within 100. |
| 1. Identify prime and composite numbers with increasing fluency. |
| 1. Establish common factors and common multiples using the prime factorisation of numbers. |
| October | **Number**:  Sets and Operations | 1. Multiplication 1 | Build upon, select and make use of a range of operation strategies. | multiplication, product, estimate, function machine, mental method, compact written method, expanded written method, order of operations, brackets, BIMDAS | 1. Round and estimate in multiplication with and without decimals. |
| 1. Multiply up to a 5-digit number by a 2-digit number. |
| 1. Multiply whole numbers by decimal numbers up to 3 decimal places. |
| 1. Solve multi-step problems involving multiplication, addition and subtraction. |
| **Measures**:  Time | 1. Time 1 | Solve and pose practical tasks and problems involving the interpretation and calculation of time. | average, constant, kilometres per hour (km/h), fastest, slowest, quickest, speed, distance, time, travels, journey | 1. Interpret and describe information provided in timetables and schedules. |
| 1. Continue to interpret and describe information provided in timetables and schedules. |
| 1. Use charts to draw conclusions about time. |
| 1. Use graphs and charts to draw conclusions about time. |
| **Number**:  Sets and Operations | 1. Division 1 | Build upon, select and make use of a range of operation strategies. | function machine, division, decimal, related, quotient, dividend, divisor, estimate, round, appropriate, whole number, equivalent, equation, BIMDAS | 1. Divide dividends with up to 4-digits with a focus on divisors that are multiples of 10. |
| 1. Divide a 4-digit number by a 2-digit number. |
| 1. Divide a decimal number by a 2-digit whole number. |
| 1. Solve multi-step problems involving division, multiplication, addition and subtraction. |
| **Shape and Space**:  Shape | 1. 2D Shapes | Construct 2D models or structures given defined measurements and/or specific conditions. Investigate and construct angles in the context of shape; and solve angle-related problems. | equilateral, isosceles, scalene, right-angled, quadrilateral, parallelogram, pentagon, hexagon, irregular, regular, interior angles, circumference, radius, diameter, chord, arc, sector, segment | 1. Explore and make connections between classes of 2D shapes. |
| 1. Use given properties to construct shapes and derive unknown properties. |
| 1. Use angle sum facts to make deductions about missing angles. |
| 1. Demonstrate ideas about geometrical relationships in relation to the circle. |
| **Autumn Assessment** | | | | | |

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|  | **Strand and Strand Unit** | **Unit** | **Learning Outcomes** | **Mathematical Language** | **Focus of New Learning** |
| November | **Number**:  Fractions | 1. Fractions 1 | Compare and express fractions in equivalent terms.  Add and subtract fractions. | fraction, numerator, denominator, equivalent, simplify, compare, number line, fraction bar, add, subtract, difference, total, estimate, mixed number, improper fraction. | 1. Find equivalent fractions and represent equivalences using models. |
| 1. Estimate and make approximations involving addition of fractions. |
| 1. Add unrelated fractions where the answer is less than or greater than 1. |
| 1. Subtract unrelated fractions. |
| **Measures**:  Measuring | 1. Length | Determine and calculate units of measurement in fractional and/or decimal form to solve practical problems.  Find, interpret and deduce measures experimentally with increasing precision. | millimetre, centimetre, metre, kilometre, convert, length, height, width, perimeter, total, difference, greater than, less than, equal to, unit of measurement, regular, identical, side | 1. Convert between metric units of length. |
| 1. Compare and order lengths, including converting between units. |
| 1. Calculate the perimeters of polygons. |
| 1. Solve problems involving length. |
| **Number**:  Fractions | 1. Fractions 2 | Compare and express fractions in equivalent terms.  Add, subtract and multiply fractions. | fraction, mixed number, whole number, improper fraction, numerator, denominator, estimate, total, difference, add, subtract, multiply, array, bar model, number line, product, unit fraction, simplify, part, whole | 1. Add and subtract mixed numbers with unrelated fractions. |
| 1. Multiply a whole number by a fraction. |
| 1. Multiply a unit fraction by a unit fraction. |
| 1. Multiply a non-unit fraction by a non-unit fraction. |
| **Measures**:  Measuring | 1. Area | Determine and calculate units of measurement in fractional and/or decimal form to solve practical problems.  Find, interpret and deduce measures experimentally with increasing precision. | area, surface area, base, height, perpendicular height, length, width, side, parallelogram, triangle, composite shape, net, face, square centimetres, square metres | 1. Calculate the areas of triangles. |
| 1. Calculate the areas of parallelograms. |
| 1. Calculate areas of composite shapes and estimate areas of circles. |
| 1. Calculate the surface areas of 3D shapes. |
| December | **Data and Chance**:  Data | 1. Data 1 | Pose questions, collect, compare, summarise and represent data selectively to answer those questions.  Critically analyse and evaluate findings; and communicate inferences, conclusions and implications from the findings. | data, data set, representation, pictogram, bar chart, pie chart, line graph, histogram, dot plot, Excel, statistical software, bell-shaped, skew, symmetric, mean, median, mode, range | 1. Interpret and represent data using pie charts. |
| 1. Represent data on appropriate graphical displays. |
| 1. Analyse the shape of graphs and make inferences about data. |
| 1. Discuss, describe and compare data sets. |
| **Data and Chance**:  Data | 1. Data 2 | Pose questions, collect, compare, summarise and represent data selectively to answer those questions.  Critically analyse and evaluate findings; and communicate inferences, conclusions and implications from the findings. | data, graph, chart, bar chart, pie chart, median, range, mean, mode, category, percentage, total, interpret, compare, recommend, represent, numerical, categorical | 1. Explore censuses and samples in relation to gathering data. |
| 1. Develop an understanding of the data handling cycle and gather data. |
| 1. Create and analyse complex data representations. |
| 1. Make inferences and convincing arguments that are based on the analysis of data displays. |
| **Winter Assessment** | | | | | |

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| January | **Number**:  Fractions; Place Value and Base Ten | 1. Fractions, Decimals and Percentages 1 | Explore (model, compare and convert) the relationships between fractions, decimals and percentages.  Investigate how decimals and percentages (and fractions) can be compared, ordered and expressed in related terms. | fraction, decimal, percentage, equivalent, convert, benchmark fraction, hundredths, tenths, numerator, denominator, compare, order, of an amount | 1. Convert between fractions, decimals and percentages to compare and order. |
| 1. Find percentage equivalences for common fractions. |
| 1. Use common fractions to solve problems involving percentages. |
| 1. Use benchmark fractions to find percentages of an amount. |
| **Measures**:  Time | 1. Time 2 | Solve and pose practical tasks and problems involving the interpretation and calculation of time. | time zone, Greenwich Mean Time (GMT), longitude, hours, ahead, behind, time difference, duration, degrees, east, west, interval, local time, 24-hour clock, a.m., p.m. | 1. Explore different time zones in relation to lines of longitude. |
| 1. Calculate time differences between Ireland and other countries. |
| 1. Calculate the time in one country, given the time in another. |
| 1. Solve problems involving time zones and time intervals. |
| **Number**:  Sets and Operations | 1. Multiplication 2 | Build upon, select and make use of a range of operation strategies. | product, estimate, round, decimal point, place value, tenths, hundredths, multiply, compact method, factor, decimal number, inverse, calculator | 1. Develop estimation skills for multiplying two decimal numbers. |
| 1. Multiply two decimal numbers with a product less than 1. |
| 1. Use the compact method to multiply two decimal numbers to 1 decimal place. |
| 1. Multiply two decimal numbers with up to two decimal places. |
| **Data and Chance**:  Chance | 1. Chance | Use probability to make informed decisions and predictions.  Represent and express probability in different forms. | likely, unlikely, certain, impossible, chance, probability, outcome, trial, event, experiment, sample space, expected, actual, fairness, fair, unfair, percentage, fraction, decimal | 1. Represent probability using fractions, decimals and percentages. |
| 1. Represent all possible outcomes of an experiment using a sample space. |
| 1. Use games to carry out blind experiments and reason about their fairness. |
| 1. Explore the effect of the number of trials on expected versus actual outcomes. |
| February | **Shape and Space**:  Shape | 1. 3D Shapes | Construct 3D models or structures given defined measurements and/or specific conditions. | 3D, shape, cube, cuboid, prism, pyramid, cone, cylinder, sphere, face, edge, vertex, vertices, net, surface area, dimensions, construct, visualise, regular, irregular, identical, base, height, apex, polyhedral | 1. Explore and make connections between classes of 3D shapes. |
| 1. Use dimensions to construct models. |
| 1. Use nets to create and describe complex 3D shapes. |
| 1. Visualise 3D shapes to solve problems. |
| **Number**:  Fractions | 1. Fractions 3 | Compare and express fractions in equivalent terms.  Multiply and divide fractions. | fraction, division, numerator, denominator, unit-fraction, non-unit fraction, quotient, decimal | 1. Divide a whole number by a unit fraction. |
| 1. Divide a whole number by a non-unit fraction. |
| 1. Calculate the whole given the fractional amount for fractions and decimals less than one. |
| 1. Calculate the whole given the fractional amount for fractions and decimals greater than 1. |

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| March | **Number**:  Sets and Operations | 1. Division 2 | Build upon, select and make use of a range of operation strategies. | division, decimal, related, quotient, dividend, divisor, estimate, round, appropriate, benchmark fraction, whole number, equivalent | 1. Estimate quotients involving decimals. |
| 1. Divide a decimal number by a decimal number using a written method. |
| 1. Extend division to include further decimals. |
| 1. Estimate and solve multistep problems involving decimals and division. |
| **Measures**:  Measuring | 1. Capacity and Volume | Determine and calculate units of measurement in fractional and/or decimal form to solve practical problems.  Find, interpret and deduce measures experimentally with increasing precision. | capacity, volume, litre, millilitre, cubic centimetre, cubic metre, length, width, height, base, area, depth, multiply, estimate, convert, dimension | 1. Apply understanding of the relationship between litres and millilitres. |
| 1. Explore volumes of cubes and cuboids. |
| 1. Calculate volumes of cubes and cuboids. |
| 1. Solve problems involving capacity and volume. |
| **Number**:  Fractions; Place Value and Base Ten | 1. Fractions, Decimals and Percentages 2 | Explore (model, compare and convert) the relationships between fractions, decimals and percentages.  Investigate how decimals and percentages (and fractions) can be compared, ordered and expressed in related terms. | percent, percentage, amount, part, whole, fraction, equivalent, increase, decrease, discount, value, of, original amount | 1. Calculate percentages of an amount, including increments of 1%. |
| 1. Calculate percentages of amounts using decimals and the 1% method. |
| 1. Calculate percentage increases and decreases. |
| 1. Use a variety of methods to estimate and calculate percentages of amounts. |
| **Algebra**:  Expressions and Equations | 1. Algebra 2 | Articulate, represent and solve mathematical situations through the use of expressions and equations that include letter-symbols. | variable, expression, equation, rule, pattern, solve, unknown, symbol, balance, equal, inverse, substitute, operation, simplify, graph, equivalent | 1. Recognise and write equivalent expressions for different contexts. |
| 1. Solve equations involving an unknown in context. |
| 1. Graph relationships between two variables. |
| 1. Find solutions in situations with two variables or unknowns. |
| **Spring Assessment** | | | | | |
| April | **Number**:  Fractions | 1. Fractions, Ratio and Proportion | Investigate proportionality and ratios of quantities (sets). | ratio, proportion, equivalent, simplify, compare, scale, part, whole, fraction, for every, out of, total, unit, value | 1. Find equivalent ratios and simplify ratios to solve problems. |
| 1. Solve problems involving ratio. |
| 1. Relate ratio to proportion in real-life contexts and record proportions as fractions. |
| 1. Solve real-life problems involving proportion. |
| **Shape and Space**:  Spatial Awareness and Location | 1. Spatial Awareness and Location | Describe location on the full co-ordinate plane.  Interpret scale maps and create simple scale drawings. | angle, protractor, degree, estimate, measure, scale, plan, map, enlarge, reduce, coordinate plane, quadrant, x-axis, y-axis, origin, plot, point, horizontal, vertical | 1. Estimate, measure and deduce the size of angles. |
| 1. Interpret scale maps and draw simple scale plans. |
| 1. Record and plot positions on the full coordinate plane. |
| 1. Plot and connect coordinates to make an image. |

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| May | **Measures**:  Money | 1. Money 1 | Solve and pose practical tasks to investigate and make informed judgements about transactions and financial plans. | currency, exchange rate, convert, euro, dollar, pound, yen, rand, tax, income, VAT, interest, savings, loan, rate, percentage, gross pay, net pay, deduction, calculate | 1. Convert other currencies to euro and vice versa. |
| 1. Calculate simple interest on savings and loans. |
| 1. Calculate pay based on hourly and daily rates, and explore income tax. |
| 1. Solve problems involving VAT. |
| **Number**:  Sets and Operations | 1. The Four Operations | Build upon, select and make use of a range of operation strategies. | operation, addition, subtraction, multiplication, division, BIMDAS, brackets, inverse, expression, equation, calculate, solve, strategy | 1. Explore the correct order of operations using BIMDAS. |
| 1. Apply the correct order of operations to expressions to solve problems in context. |
| 1. Use all four operations to solve problems. |
| 1. Choose appropriate operations to solve problems. |
| **Shape and Space**:  Transformation | 1. Transformation | Perform and devise a range of steps involving transformations. | translate, translation, reflect, reflection, axis, rotate, rotation, centre of rotation, clockwise, anticlockwise, transform, transformation, image, object, coordinates, vertex, tessellation, pattern, symmetry | 1. Devise a range of steps to transform shapes. |
| 1. Apply transformations to 2D shapes on the coordinate plane. |
| 1. Predict effects of transformation on coordinates of shape corners. |
| 1. Recognise and create tessellating patterns. |
| **Measures**:  Money | 1. Money 2 | Solve and pose practical tasks to investigate and make informed judgements about transactions and financial plans. | currency, exchange rate, convert, euro, tax, income, VAT, interest, savings, loan, rate, percentage, gross pay, net pay, deduction, calculate, budget, cost, price, income, profit, loss, spending, savings, plan, total, estimate, balance, financial, revenue, expenses | 1. Develop and make a financial plan for an entrepreneurial scenario. |
| 1. Analyse the results of an entrepreneurial scenario. |
| 1. Explore profit and loss for an entrepreneurial scenario. |
| 1. Plan a budget for a school event. |
| June | **Measures**:  Measuring | 1. Weight | Determine and calculate units of measurement in fractional and/or decimal form to solve practical problems.  Find, interpret and deduce measures experimentally with increasing precision. | tonnes (t), kilograms (kg), grams (g), weight, mass, heavier, lighter, estimate, convert, compare, order, scale, total, difference | 1. Understand the relationship between tonnes, kilograms and grams. |
| 1. Compare and order weights in tonnes, kilograms and grams. |
| 1. Solve problems involving weight. |
| 1. Solve problems involving weight plus other measures. |
| All | 1. Let’s Look Back | Revision | Revision | Revision |
| **Summer Assessment** | | | | | |