

St Aidan’s Catholic Primary School Y4:Progression of Skills

**Use this document as a track to ensure that all objectives are covered throughout the academic year and to gain an understanding of the progression of skills including prior and future learning.**

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| **NUMBER: Place value** | | |
| **Prior Learning (Year 3 National Curriculum)** | **Year 4 Learning (National Curriculum)** | **Future Learning (Y5 National Curriculum)** |
| * To read and write numbers up to 1000 in numerals and in words. * To recognise the place value of each digit in a three- digit number (hundreds, ten and ones). * To identify, represent and estimate numbers using different representations. * To compare and order numbers up to 1000. * To count from 0 in multiples of 4. * To count from 0 in multiples of 8. * To count from 0 in multiples of 50. * To count from 0 in multiples of 100. * To find 10 more or less than a given number. * To find 100 more or less than a given number.   To solve number problems and practical problems involving these ideas in place value   * To solve number problems and practical problems involving all ideas in place value.   ***Consolidation and Problem Solving*** | * To recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones). * To identify, represent and estimate numbers using different representations. * To order and compare numbers beyond 1000 (e.g. 1345,1445,1500). * To count in multiples of 6, 7, 9, 25 and 1000. * To find 1000 more or less than a given number. * To round numbers up to the nearest 10. * To round numbers up to the nearest 100. * To round numbers up to the nearest 1000. * To count backwards through zero to include negative numbers. * To solve number and practical problems that involve all of the above and with increasingly large positive numbers. * To read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.   **Revisit objectives throughout the year through fast five and mental maths starters.**   * To solve number and practical problems that involve all aspects of the place value objectives and with increasingly large positive numbers.   ***Consolidation and Problem Solving*** | * Read and write numbers to at least 1 000 000 * To determine the place value of each digit in numbers to at least 1 000 000 * Order numbers to at least 1 000 000 and determine the place value of each digit. * Compare numbers to at least 1 000 000 and determine the place value of each digit. * Count forwards or backwards in steps of powers of 10 from any given number up to 1 000 000. * Round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000. * Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. * To solve number problems and practical problems that involve all of the above. * Read Roman numerals to 1 000 (M) and recognise years written in Roman numerals.   ***Consolidation and Problem Solving*** |
| **Key Vocabulary**  Place value, digit, order, compare, round, rounded to, negative number, positive number, partition, digit , Roman Numeral, units, tens, ones, hundreds, thousands, ten thousand, hundred thousand, million, whole, part whole, base ten, number track, represents, exchange, >greater than <, less than, greatest, most, largest, least, fewest, smallest, between, half-way, estimate, roughly, close to, approximate, exact, comparison symbols, inequality symbols, exactly, round, strategy, integer, positive, negative above/below zero odd, even, every other, next, consecutive, sequence, continue, predict, pattern, pair, rule, relationship, sort, classify, property, |  | |

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| **NUMBER: Addition and Subtraction** | | |
| **Prior Learning (Year 3 National Curriculum)** | **Year 4 Learning (National Curriculum)** | **Future Learning (Y5 National Curriculum)** |
| * To add and subtract mentally a three digit number and ones. * To add and subtract mentally a three digit number and tens. * To add and subtract mentally a three digit number and hundreds. * To add numbers with up to three digits, using formal written methods of columnar addition involving the use of the inverse operation. * To subtract numbers with up to three digits, using formal written methods of columnar subtraction involving the use of the inverse operation. * To estimate the answer to a calculation to check answers. * To use inverse operations to check answers. * To solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction. * To solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction.   ***Consolidation and Problem Solving*** | * To add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate. * To subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate. * To estimate to check answers to a calculation. * To use inverse operations to check answers to a calculation. * To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. * To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.   ***Consolidation and Problem Solving*** | * To add whole numbers, with more than 4 digits, using the formal column method. * To subtract whole numbers, with more than 4 digits, using the formal column method. * To use rounding, *estimation and inverse operations,* to check answers to calculations and determine, in the context of a problem, levels of accuracy. * To add numbers mentally, with increasingly large numbers e*.g. Use place value and known facts to subtract one near multiple of 1000 from another e.g. 6070 – 4097 or 12 462 – 2300 = 10 162. Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.* * To subtract numbers mentally, with increasingly large numbers e*.g. Use place value and known facts to subtract one near multiple of 1000 from another e.g. 6070 – 4097 or 12 462 – 2300 = 10 162. Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.* * To choose the appropriate operation when solving addition and subtraction everyday multi-step problems.   *Including using and explaining the equals sign to indicate equivalence, including in missing number problems (e.g. 13 + 24 = 12+ 25; 33 = 55 - ∆).*  ***Consolidation and Problem Solving*** |
| **Key Vocabulary**  Add, subtract, addition, subtraction, calculation ,increase, sum, total, altogether, double, minus, plus, increase, decrease , more, less, altogether, difference, double, half, take away, exchange, mentally, orally, column addition, column subtraction, method, estimate, inverse operation, solve problem, number facts, multiple exchanges, round  How many are left/left over?  Difference between, half, halve, how many more/fewer is… than…?  Is the same as, equals tens boundary hundreds boundary inverse |  | |

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| **NUMBER: Multiplication and Division** | | |
| **Prior Learning (Year 3 National Curriculum)** | **Year 4 Learning (National Curriculum)** | **Future Learning (Y5 National Curriculum)** |
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| * To recall and use multiplication and division facts for the 3 times table. * To recall and use multiplication and division facts for the 4 times table. * To recall and use multiplication and division facts for the 8 times table. * To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers multiplied by one-digit numbers using mental and progressing to formal written methods. * To solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and corresponding problems in which *n* objects are connected to *m* objects. * To solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and corresponding problems in which *n* objects are connected to *m* objects. * Not N.C guidance: During Summer term (or Spring term if children are confident), children will extend their learning to include the 6 and 7 x table***.*** | * To recall multiplication and division facts for multiplication tables up to 12 x 12 verbally and in written work. * To use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1. * To use place value, known and derived facts to multiply and divide mentally, including: dividing by 1. * To use place value, known and derived facts to multiply and divide mentally, including: multiplying together three numbers. * To recognise and use factor pairs and know that changing the order of numbers in mental calculations will not affect the outcome and support in finding missing detail e.g. 6\_\_\_ x 4 = 512 is the same as 512 ÷ 4 = 6\_\_\_ * To multiply two-digit and three-digit numbers by a one-digit number using formal written layout. * To recall multiplication and division facts for multiplication tables up to 12 x 12 verbally and in written work. * To solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one-digit.   The Distributive Law says that multiplying a number by a group of numbers added together is the same as doing each multiplication separately e.g. 3 × (2 + 4) = 3 × 2 + 3 × 4   * Non Statutory: Pupils practise to become fluent in the formal written method of short multiplication and short division with exact answers * To solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one-digit.   The Distributive Law says that multiplying a number by a group of numbers added together is the same as doing each multiplication separately e.g. 3 × (2 + 4) = 3 × 2 + 3 × 4 | * To multiply and divide numbers mentally, using times table facts (ongoing) * To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. * To use formal written multiplication to multiply up to 4 digit numbers by 1 or 2 digit numbers, including long multiplication for two-digit numbers. * To multiply whole numbers and decimals by 10, 100 and 1000. * To divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context i.e. remainders, fractions or to decimal places. * To divide whole numbers and decimals by 10, 100 and 1000. * To recognise and use square and cube numbers, including the correct index notation (²) and (³). * To solve problems involving multiplication and division using their knowledge of factors and multiples, squares and cubes. * To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. * To solve problems involving multiplication and division, including using simple fractions and problems involving simple rates i.e. comparing unrelated units of measurement e.g. time and miles, g and £. * To solve problems involving multiplication and division using their knowledge of factors and multiples, squares and cubes. * To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. * To use the words ‘prime number’, ‘prime factor’ and ‘composite number’ correctly. * To establish whether a number (up to 100) is prime and recall the prime numbers up to 19. * Short division to create a decimal remainder can be introduced to become Y6 ready. |
| **Key Vocabulary**  Multiply, groups of, lots of, equal groups of, repeated division, times, divide, divisible by, divisor, division facts, share, group, remainder, factor, common factor, multiple, product, formal written method, short multiplication, multiplier, multiplicand, short division, inverse, table, commutative, distributive, equivalent, quotient, arrays, commutative law, inverse, concrete methods, pictoral methods |  | |

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| **NUMBER: Fractions Decimals Percentages** | | |
| **Prior Learning (Year 3 National Curriculum)** | **Year 4 Learning (National Curriculum)** | **Future Learning (Y5 National Curriculum)** |
| * To recognise and use fractions as numbers: unit fractions with small denominators. * To recognise and use fractions as numbers: non-unit fractions with small denominators. * To recognise and find fractions of a discrete set of objects; unit fraction e.g. 1/5, 1/2 and non-unit fractions e.g. 2/5, 2/3 with small denominators. * To write fractions of a discrete set of objects; unit fraction e.g. 1/5, 1/2 and non-unit fractions e.g. 2/5, 2/3 with small denominators. * To order unit fractions, and fractions with the same denominators. * To compare unit fractions, and fractions with the same denominators. * To recognise, using diagrams, equivalent fractions with small denominators. * To show, using diagrams, equivalent fractions with small denominators. * To add fractions with the same denominator within one whole for example, 5/7 + 1/7 = 6/7. * To subtract fractions with the same denominator within one whole for example, 5/7 + 1/7 = 6/7. * To recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. * To count up and down in tenths   To solve problems that involve all of the above. | * To recognise and show, using diagrams, families of common equivalent fractions. * To recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. * To count up and down in hundredths, * To add fractions with the same denominator. * To subtract fractions with the same denominator. * To solve problems involving increasingly harder fractions (beyond ½, ¼, 1/5, 1/10 and 1/3) to calculate amounts, and fractions to divide amounts, including fractions with a numerator greater than 1 ( 2/3, ¾ etc.) where the answer is a whole number. * To recognise and write decimal equivalents to ¼, ½, ¾. * To recognise and write decimal equivalents of any numbers of tenths or hundredths. * To find the effect of dividing a one or two digit number by 10, identifying the value of the digits in the answer as ones, tenths and hundredths. * To find the effect of dividing a one or two digit number by 100, identifying the value of the digits in the answer as ones, tenths and hundredths. * To compare numbers with the same number of decimal places up to two decimal places. * To round decimals with one decimal place to the nearest whole number. * To solve problems involving increasingly harder fractions (beyond ½, ¼, 1/5, 1/10 and 1/3) to calculate amounts, and fractions to divide amounts, including fractions with a numerator greater than 1 ( 2/3, ¾ etc.) where the answer is a whole number. * To solve simple measures and money problems involving fractions and decimals to decimal places. * ***Consolidation and Problem Solving*** | * To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. * To compare and order fractions whose denominators are all multiples of the same number * To add fractions with the same denominator and denominators that are multiples of the same number. * To subtract fractions with the same denominator and denominators that are multiples of the same number. * To recognise mixed numbers and improper fractions and convert from one to the other and write mathematical statements e.g. more than 1 as a mixed number (i.e. 2/5 + 4/5= 6/5 = 1 1/5). * To multiply proper fractions by whole numbers, with the help of materials and diagrams. * To multiply mixed numbers by whole numbers, with the help of materials and diagrams. * To read and write decimal numbers as fractions [for example, 0.71 = 71/100]. * To recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. * To read, write, order and compare numbers with up to three decimal places. * To round decimals with two decimal places to the nearest whole number and to one decimal place. * *Add and subtract decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 (e.g.0.83+ 0.17 =1) using formal written methods when appropriate.* * To solve problems involving number up to three decimal places. * To recognise the per cent symbol (%) and understand that it means ‘the number of parts per hundred’, and write percentages as a fraction with a denominator of 100, and as a decimal. * To solve problems which involve percentage and decimal equivalents of ½: ¼, 1/5, 2/5 and 4/5 and those fractions with a denominator of a multiple of 10 or 25. * To solve problems which involve percentage and decimal equivalents of ½: ¼, 1/5, 2/5 and 4/5 and those fractions with a denominator of a multiple of 10 or 25. * ***Consolidation and Problem Solving*** |
| **Key Vocabulary**  numerator, denominator, unit fraction, non-unit fraction, equivalent fraction, factor, integer, quantities, whole, halves, quarters, fifths, sixths, sevenths, eighths, ninths, tenths, elevenths, twelfths, quantities, proportion, fraction, add, convert, count up, count down,  Decimals, decimal point, decimal place, place value, tenths, hundredths, decimal tenths, decimal hundredths, part-whole model, rounding, decimal point, place value, whole number |  | |

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| **MEASUREMENT** | | |
| **Prior Learning (Year 3 National Curriculum)** | **Year 4 Learning (National Curriculum)** | **Future Learning (Y5 National Curriculum)** |
| * To tell and write the time from an analogue clock. Including using Roman numerals from I to XII. * To write the time from an analogue clock. Including using Roman numerals from I to XII. * To tell the time from a 12-hour clock. * To write the time from a 12-hour clock. * To tell the time from a 24-hour clock. * To write the time from a 24-hour clock. * To estimate and read time with increasing accuracy to the nearest minute. * To record and compare time in terms of seconds, minutes and hours. * To use vocabulary such as o’clock, am/pm, morning, afternoon, noon and midnight. * To know the number of seconds in a minute and the number of days in each month, year and leap year. * To compare durations of events (for example to calculate the time taken by particular events or tasks). * To add amounts of money to give change, using both £ and p in practical contexts. * To subtract amounts of money to give change, using both £ and p in practical contexts. * To measure lengths (m/cm/mm). * To compare lengths (m/cm/mm). * To add and subtract lengths (m/cm/mm). * To measure the perimeter of simple 2-D shapes. * To measure mass (kg/g). * To compare mass (kg/g). * To add and subtract mass (kg/g). * To measure volume/capacity (l /ml). * To compare volume/capacity (l /ml). * To add and subtract volume/capacity (l /ml).   ***Consolidation and Problem Solving*** | * To measure the perimeter of a rectilinear figure (including squares) in centimetres and meters. * To find the area of rectilinear shapes by counting squares. * To convert between different units of measure (for example, kilometre to meter; hour to minute). * To read and write the time for an analogue clock.      * To read and write the time for a digital 12 hour clock. * To read and write the time for a digital 24 hour clock. * To write and convert time between analogue and digital 12- and 24-hour clocks. * To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. * To convert between different units of measure (for example, kilometer to meter; hour to minute). * To estimate different measures, including money in pounds and pence. * To compare different measures, including money in pounds and pence.   ***Consolidation and Problem Solving*** | * To measure the perimeter of compound rectilinear shapes in cm and m. * To compare the area of rectangles (including using squares), and including using standard units, square centimetres (cm2), square metres (m2) and estimate the area of irregular shapes. *For rectangles use the formula, length x breadth = area, expressed in words or symbols.* * To solve problems involving converting between units of time. * To convert between different metric units of measure (e.g. km <-> m, cm <-> m, g <-> kg, l <-> ml). * To estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)]. * To estimate capacity [for example, using water]. * To understand and use appropriate equivalences between metric units and common imperial units such as inches, pounds and pints. * To use all 4 operations to solve problems involving measure e.g. length, mass, volume and money, using decimal notation and scaling.   ***Consolidation and Problem Solving*** |
| **Key Vocabulary**  Calculate, convert, estimate, measure, measurement, measurement equipment, perimeter, rectilinear, side, width, area, squares, rectangle  Money, amount, change, combinations, estimate, decimal, pence, penny. pounds, round ,value, convert, price, cost buy, bought, sell, sold spend, spent, pay, change,  Minute hand, hour hand, O’clock, quarter past, half past, quarter to, 12 hour time, 24-hour time, digital clock, Roman Numerals, analogue, hours, minutes, seconds, midday, midnight, noon ,am, pm, clock, watch leap year, week, month, year, day, century, millennium, timetable, arrive, depart hour,  Compare unit, standard unit metric unit, imperial unit measuring scale, estimate approximately, perimeter kilometre (km), metre (m), centimetre (cm), millimetre (mm) mile Mass: gram (g) balance kilogram (kg), half-kilogram, capacity: (ml)pint litre (l), half-litre, millilitre area, covers, surface square centimetre (cm2), |  | |

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| **GEOMETRY: Position and Direction** | | |
| **Prior Learning (Year 3 National Curriculum)** | **Year 4 Learning (National Curriculum)** | **Future Learning (Y5 National Curriculum)** |
|  | * To describe positions of a 2-D grid as coordinates in the first quadrant. * To describe movements between positions as translations of a given unit to the left/right and up/down. * To plot points on a graph and draw sides to complete a given polygon. * To plot points on a graph and draw sides to complete a given polygon.   ***Consolidation and Problem Solving*** | * To identify and describe the position of a shape following a reflection using the appropriate language and know that the shape has not changed. * To represent the position of a shape following a reflection, using the appropriate language and know that the shape has not changed. * To identify and describe the position of a shape following a translation, using the appropriate language and know that the shape has not change. * To represent the position of a shape following a translation, using the appropriate language and know that the shape has not changed.   ***Consolidation and Problem Solving*** |
| **Key Vocabulary**  Position, direction, quadrant, first quadrant,  Quadrant, translation, y-axis, x-axis, vertex, vertices, position, brackets, coordinates, plotting, movement, right, left, point, integer, 2-d grid, up, down, polygon, orientation |  | |

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| **GEOMETRY: Properties of Shape** | | |
| **Prior Learning (Year 3 National Curriculum)** | **Year 4 Learning (National Curriculum)** | **Future Learning (Y5 National Curriculum)** |
| * To draw 2-D shapes and describe their properties. * To make 3-D shapes using modelling materials. * To recognise 3-D shapes in different orientations and describe them. * To recognise angles as a property of shape. * To recognise angles as a description of a turn. * To identify right angles. * To identify whether angles are greater than or less than a right angle. * To recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn. * To identify horizontal lines. * To identify vertical lines. * To identify pairs of perpendicular lines. * To identify pairs of parallel lines.   ***Consolidation and Problem Solving*** | * To compare and classify geometric shapes, including quadrilaterals(*e.g. parallelogram, rhombus, trapezium)*  and triangles (*e.g. isosceles, equilateral, scalene)* based on their properties and sizes. * To identify lines of symmetry in 2-D shapes * To identify lines of symmetry in 2-D shapes presented in different orientations. * To finish drawing a simple symmetric shape with respect to a specific line of symmetry. * To identify acute and obtuse angles. * To compare and order angles up to two right angles by size. | * To know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. * To draw and measure angles, measuring them in degrees (ᵒ). * To identify:   + angles at a point and one whole turn (total 360ᵒ)   + angles at a point on a straight line and ½ a whole turn (180ᵒ)   + other multiples of 90ᵒ * To identify and describe the properties of 3D shapes * To identify 3-D shapes, including cubes and other cuboids, from 2-D representations * To distinguish between regular and irregular polygons based on reasoning about equal sides and angles. * To use the properties of rectangles to deduce related facts and find missing lengths and angles.   ***Consolidation and Problem Solving*** |
| **Key Vocabulary**  2-D, shape, 3-D shape, polygon, isosceles, equilateral, scalene, quadrilateral, rhombus, parallelogram. Trapezium, trapezium, kite, regular/irregular shape, triangles, right angle triangle, isosceles triangle, scalene triangle, equilateral triangle, right angle triangle, quadrilaterals, four sides, equal length, order, ,  flat, curved, edge, vertex, vertices, face, side,  angle, degrees, protractor orientation, turn, half turn, three quarter turn, complete turn, horizontal lines, parallel line, vertical lines, perpendicular lines, right angle, acute, obtuse, right angle horizontal, vertical, diagonal, parallel, perpendicular, two-dimensional, ,  Lines of symmetry, patterns, reflection, line of symmetry, reflection, mirror line, multiple lines of symmetry, mirror lines vertical, horizontal, diagonal, symmetrical, polyhedral, compare, classify, geometric, |  | |

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| **STATISTICS** | | |
| **Prior Learning (Year 3 National Curriculum)** | **Year 4 Learning (National Curriculum)** | **Future Learning (Y5 National Curriculum)** |
| * To interpret data using bar charts. * To present data using bar charts. * To interpret data using pictograms. * To present data using pictograms. * To interpret data using tables. * To present data using tables. * To solve one-step questions (for example, ‘How many more? How many fewer?’) using information presented in scaled bar charts and pictograms and tables. * To solve two-step questions (for example, ‘How many more? How many fewer?’) using information presented in scaled bar charts and pictograms and tables. | * To read discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. * To present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. * To solve problems that involve comparing data, adding and subtracting using information presented in bar charts, pictograms, tables and other graphs. | * To solve comparison, sum and difference problems using information presented in a line graph * To read and interpret information in tables, including timetables. * To complete information in tables, including timetables |
| **Key Vocabulary**  Bar charts, pictogram, tables, axis, scale, tally, sort, vote survey, questionnaire, data, graph, block graph, Carroll diagram frequency table, tally chart, discrete data, continuous data, time graph, sum, difference, comparison, interpret, frequency tables, interpret data ,present data, read data, Venn diagram label, title, most popular, most common least popular, least common |  | |

**Please note ~ objectives must be revisited during mental maths, arithmetic tests to ensure revision and consolidation.**