



St Aidan's Catholic Primary School

Year 6: 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.

NUMBER: Place value		
Prior Learning (Year 5 National Curriculum)	Year 6 Learning (National Curriculum)	Future Learning (Y7 National Curriculum)
<ul style="list-style-type: none"> ● <u>Read and write numbers to at least 1 000 000</u> ● <u>To determine the place value of each digit in numbers to at least 1 000 000</u> ● <u>Order numbers to at least 1 000 000 and determine the place value of each digit.</u> ● <u>Compare numbers to at least 1 000 000 and determine the place value of each digit.</u> ● 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. ● <u>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.</u> ● 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. <p style="margin-top: 20px;"><i>Consolidation and Problem Solving</i></p>	<ul style="list-style-type: none"> ● To read and write numbers up to 10,000 000 and determine the value of each digit. ● To order and compare numbers up to 10,000 000 and determine the value of each digit. ● <u>To round any whole number to a required degree of accuracy.</u> ● <u>To use negative numbers in context and calculate intervals across zero.</u> ● To solve number and practical problems that involve all of the above. 	

Key Vocabulary

Millions, hundred thousands, ten thousands, thousands, hundreds, tens, ones, tenths, hundredths, place value, greater than, less than, equal to, compare, order, round, rounded, negative number, positive number, partition, digit, interval, sequence, linear sequence, pattern ascending, descending, value, place holder, between, count backwards, count forwards, decimal place, decimal point, digit, integer, sequence, size, roman numerals

NUMBER: Addition and Subtraction

Prior Learning (Year 5 National Curriculum)	Year 6 Learning (National Curriculum)	Future Learning (Y7 National Curriculum)
<ul style="list-style-type: none"> ● <u>To add whole numbers, with more than 4 digits, using the formal column method.</u> ● <u>To subtract whole numbers, with more than 4 digits, using the formal column method.</u> ● To use rounding, <i>estimation and inverse operations</i>, to check answers to calculations and determine, in the context of a problem, levels of accuracy. ● <u>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.</u> ● <u>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.</u> ● To choose the appropriate operation when solving addition and subtraction everyday multi-step problems. <i>Including using and explaining the equals sign to indicate equivalence, including in missing number problems (e.g. $13 + 24 = 12 + 25$; $33 = 55 - \Delta$).</i> <p style="text-align: center;">Consolidation and Problem Solving</p>	<ul style="list-style-type: none"> ● To perform mental calculations, including with mixed operations and large numbers ● To use their knowledge of the order of operations to carry out calculations involving the 4 operations ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why ● To solve problems involving addition and subtraction, ● To use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. 	

Key Vocabulary

Add, total, make, plus, sum, formal column method,
more , altogether, difference, subtract, less, minus,
take away , estimate, inverse operation, number facts,
place value, place holder, approximate, exchange,
decimal place, decimal point, even, integer, ones, tens,
hundreds ,thousands, ten thousands, hundred
thousands, millions, tenths, hundredths, round, symbol

NUMBER: Multiplication and Division

Prior Learning (Year 5 National Curriculum)	Year 6 Learning (National Curriculum)	Future Learning (Y7 National Curriculum)
<ul style="list-style-type: none"> ● To multiply and divide numbers mentally, using times table facts (ongoing) ● <u>To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</u> ● 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). ● <u>To solve problems involving multiplication and division using their knowledge of factors and multiples, squares and cubes.</u> ● To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. ● <u>To solve problems involving multiplication and division, including using simple fractions and problems involving simple rates i.e. comparing</u> 	<ul style="list-style-type: none"> ● <u>To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.</u> ● <u>To divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.</u> ● <u>To use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</u> ● To perform mental calculations, including with mixed operations and large numbers. ● To identify common factors. ● To identify common multiples. ● To identify prime numbers. ● To use their knowledge of the order of operations to carry out calculations involving the four operations. ● To solve problems involving multiplication. ● To solve problems involving division. 	

<p><u>unrelated units of measurement e.g. time and miles, g and £.</u></p> <ul style="list-style-type: none"> • • <u>To solve problems involving multiplication and division using their knowledge of factors and multiples, squares and cubes.</u> • 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. 		
<p><u>Key Vocabulary</u> Multiply, groups of, times, divide, share, remainder, share equally, division, divided by, divisible by, factor, quotient, inverse, factor pairs, prime number, prime factor, multiple, common multiples, common factors, short division, long division, BODMAS, estimate, composite number, mental method, decimal, square number, cubed number, rounding, order of operations, formal written method, ratio</p>		

NUMBER: Fractions Decimals Percentages

Prior Learning (Year 5 National Curriculum)

Year 6 Learning (National Curriculum)

Future Learning (Y7 National Curriculum)

<ul style="list-style-type: none"> ● To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. ● <u>To compare and order fractions whose denominators are all multiples of the same number</u> ● 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. $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$). ● 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. ● <u>To read and write decimal numbers as fractions [for example, $0.71 = 71/100$].</u> ● To recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. ● <u>To read, write, order and compare numbers with up to three decimal places.</u> ● To round decimals with two decimal places to the nearest whole number and to one decimal place. ● <i>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.</i> ● 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 	<ul style="list-style-type: none"> ● To use common factors to simplify fractions. ● To use common multiples to express fractions in the same denomination. ● To compare and order fractions, including fractions that are > 1 ● <u>To add fractions with different denominators.</u> ● <u>To add fractions with mixed numbers, using the concept of equivalent fractions.</u> ● <u>To subtract fractions with different denominators.</u> ● <u>To subtract fractions with mixed numbers, using the concept of equivalent fractions.</u> ● To multiply simple pairs of proper fractions, writing the answer in its simplest form, for example: $1/4 \times 1/2 = 1/8$. ● To divide proper fractions by whole numbers, for example: $1/3 \div 2 = 1/6$. ● To associate a fraction with division and calculate decimal fraction equivalents, for example: 0.375 for a simple fraction of $3/8$. ● To identify the value of each digit in numbers given to three decimal places. ● To multiply numbers by 10, 100 and 1000 giving answers up to three decimal places. ● To multiply one-digit numbers with up to two decimal places by whole numbers. ● <u>To use written division methods in cases where the answer has up to two decimal places.</u> ● <u>To solve problems which require answers to be rounded to specified degrees of accuracy.</u> ● <u>To recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</u> 	
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write percentages as a fraction with a denominator of 100, and as a decimal.

● To solve problems which involve percentage and decimal equivalents of $\frac{1}{2}$: $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$ and $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.

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● ***Consolidation and Problem Solving***

Key Vocabulary

Numerator, denominator, unit fraction, non unit fraction, whole, equivalent, mixed number, proper/improper fraction, simplest form, multiple, common denominator, common numerator, tenths, hundredths, decimal equivalents, part whole model, rounding, decimal point, place value, whole number, nearest tenth, nearest hundredth, part, equal parts fraction, reduced to, cancel one whole half, quarter, eighth third, sixth, ninth, twelfth fifth, tenth, twentieth, the proportion, ratio, percentage, %

MEASUREMENT

Prior Learning (Year 5 National Curriculum)

- 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].

Year 6 Learning (National Curriculum)

Revisit objectives throughout the year through 4 a day and mental maths starters.

- To use, read, write and convert between standard units, converting measurements of **length** from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.
- To use, read, write and convert between standard units, converting measurements of **mass** from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.
- To use, read, write and convert between standard units, converting measurements of **volume** from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.
- To use, read, write and convert between standard units, converting measurements of **time** from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.

Future Learning (Y7 National Curriculum)

<ul style="list-style-type: none"> ● 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. <p style="text-align: center;"><i>Consolidation and Problem Solving</i></p>	<ul style="list-style-type: none"> ● To convert between miles and kilometres. ● To solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. ● To recognise that shapes with the same areas can have different perimeters and vice versa. ● To recognise when it is possible to use formulae for area. ● <u>To calculate the area of parallelograms.</u> ● <u>To calculate the area of triangles.</u> ● To recognise when it is possible to use formulae for volume of shapes. ● <u>To calculate volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³].</u> ● <u>To estimate volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³].</u> ● <u>To compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³].</u> <p style="text-align: center;">:</p> <ul style="list-style-type: none"> ● To convert between miles and kilometres. ● To solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. ● To recognise that shapes with the same areas can have different perimeters and vice versa. 	
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	<ul style="list-style-type: none"> ● To recognise when it is possible to use formulae for area. ● <u>To calculate the area of parallelograms.</u> ● <u>To calculate the area of triangles.</u> ● To recognise when it is possible to use formulae for volume of shapes. 	
<p style="text-align: center;"><u>Key Vocabulary</u></p> <p>Cubed, area, cross section, prism, cube, cuboid, face, length, height, width, depth, properties, unit, standard unit metric unit, imperial unit measuring scale, estimate approximately perimeter kilometre (km), metre (m), centimetre (cm), millimetre (mm) mile ruler, metre stick, tape squared (cm²) (m²) (mm²) kilogram (kg), half-kilogram, gram (g) litre (l), half-litre, millilitre (ml) pint area, covers, surface leap year, century, millennium am, pm, noon, midnight 24-hour, 12-hour o'clock, half past, quarter to, quarter past clock, watch, hands digital/analogue clock/watch, timer price, cost buy, bought, sell, sold spend, spent, change total, amount, value, discount, currency</p>		

GEOMETRY: Position and Direction

Prior Learning (Year 5 National Curriculum)	Year 6 Learning (National Curriculum)	Future Learning (Y7 National Curriculum)
<ul style="list-style-type: none"> ● 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. <p style="text-align: center;"><i>Consolidation and Problem Solving</i></p>	<ul style="list-style-type: none"> ● To describe the positions on the full coordinate grid (all four quadrants) ● <u>To draw and translate simple shapes on the coordinate plane.</u> ● <u>To reflect shapes in the axes.</u> 	
<p style="text-align: center;"><u>Key Vocabulary</u></p> <p style="text-align: center;">Quadrant, translation, y-axis, x-axis, reflection, coordinate, identify, parallel, plot, reflect, describe, quadrant, first/second/third/forth quadrant, represents, position, translate, axis, reflect</p>		

GEOMETRY: Properties of Shape

Prior Learning (Year 5 National Curriculum)	Year 6 Learning (National Curriculum)	Future Learning (Y7 National Curriculum)
<ul style="list-style-type: none"> ● To know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. ● <u>To draw and measure angles, measuring them in degrees ($^{\circ}$).</u> ● To identify: <ul style="list-style-type: none"> • angles at a point and one whole turn (total 360°) • angles at a point on a straight line and $\frac{1}{2}$ a whole turn (180°) • other multiples of 90° ● To identify and describe the properties of 3D shapes ● To identify 3-D shapes, including cubes and other cuboids, from 2-D representations ● <u>To distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</u> ● To use the properties of rectangles to deduce related facts and find missing lengths and angles. <p style="text-align: center;"><i>Consolidation and Problem Solving</i></p>	<ul style="list-style-type: none"> ● To draw 2-D shapes using given dimensions and angles. ● To recognize and describe simple 3-D shapes. ● To build simple 3-D shapes. ● To recognise and describe nets of shapes. ● To build nets of shapes. ● <u>To compare and classify geometric shapes based on their properties and sizes.</u> ● <u>To find unknown angles in any triangles.</u> ● <u>To find unknown angles in any quadrilaterals.</u> ● <u>To find unknown angles in any regular polygons.</u> ● <u>To recognise angles where they meet at a point and find missing angles.</u> ● <u>To recognise angles that are vertically opposite, and find missing angles.</u> ● <u>To recognise angles on a straight line and find missing angles.</u> ● To illustrate and name parts of circles, including radius, diameter and circumference. ● To know that the diameter is twice the radius. 	

Key Vocabulary

Angle, right angle, acute, obtuse, reflex, protractor, horizontal, vertical, parallel, perpendicular, polygon, regular, irregular, two-dimensional, three-dimensional, flat face, curved surface, edge, curved edge, vertex, apex flat, side, centre, radius, concave, convex, congruent, diameter, circumference, net, length, width, depth

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, cube, cuboid, square-based pyramid, cone, tetrahedron, octahedron, triangular prism, cylinder, sphere, hemi-sphere, spherical 2D shape names equilateral triangle, isosceles triangle, scalene triangle, symmetrical, line of symmetry, reflection, reflect
x-axis, y-axis pattern, repeating pattern

STATISTICS

Prior Learning (Year 5 National Curriculum)

Year 6 Learning (National Curriculum)

Future Learning (Y7 National Curriculum)

<ul style="list-style-type: none"> • To solve comparison, sum and difference problems using information presented in a line graph • <u>To read and interpret information in tables, including timetables.</u> • <u>To complete information in tables, including timetables</u> 	<ul style="list-style-type: none"> • <u>To interpret line graphs and use these to solve problems.</u> • <u>To construct line graphs and use these to solve problems.</u> • <u>To calculate and interpret the mean as an average.</u> • <u>To interpret pie charts and use these to solve problems.</u> • <u>To construct pie charts and use these to solve problems.</u> <p style="text-align: center;">Consolidation and Problem Solving</p>	
<p style="text-align: center;"><u>Key Vocabulary</u></p> <p>Interpret data, present data, read data, bar charts, pictogram, axis scale, tall, short, vote, axis, scale, tally, survey, questionnaire, graph, tally chart, table, frequency, Carroll diagram, Venn diagram, label, title, most popular, most common, least popular, least common, line graph, bar line chart, fair, unfair, likely, unlikely, likelihood, certain, uncertain, probable, possible, maximum, minimum, classify, outcome</p>		

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

Algebra		
Prior Learning (Year 5 National Curriculum)	Year 6 Learning (National Curriculum)	Future Learning (Y7 National Curriculum)

<ul style="list-style-type: none"> • Solve problems including missing number problems • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems <p>Solve one-step problems that involve addition and subtraction , using concrete objects an pictoral representations and missing number problems such as $7 = __ 9$</p>	<ul style="list-style-type: none"> • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication • Solve problems involving the calculation of percentages and the use of percentages for comparison • Solve problems involving similar shapes where the scale factor is known or can be found • Solve problems involving unequal sharing and grouping using knowledge of factors and multiples 	-
<p style="text-align: center;"><u>Key Vocabulary</u></p> <p>Algebra, ascending order, descending order, commutative property, enumerate, equation, expression, formula, formulae, integer, linear, pattern, puzzle, rule, sequence, symbol, term, triangular number, unknown, variable</p>		

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

Prior Learning (Year 5 National Curriculum)	Year 6 Learning (National Curriculum)	Future Learning (Y7 National Curriculum)
	Use simple formulae <ul style="list-style-type: none"> ● Generate and describe linear number sequences ● Express missing number problems algebraically ● Find pairs of numbers that satisfy an equation with two unknowns ● Enumerate possibilities of combinations of two variables 	-
<p style="text-align: center;"><u>Key Vocabulary</u></p> Proportion, proportionality, ratio, unequal grouping, unequal sharing, scale, fraction, one for every, percent, percentage,		

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