Adlington Primary School

Progression in Mathematics

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number, Addition and Subtraction	Have a deep understanding of number to 10, including the composition of each number. Subitise up to 5. Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. Verbally count beyond 20, recognising the pattern of the counting system. Compare quantities up to 10 in different contexts, recognising when one quantity is	Partition each of the numbers from 1-5 in different ways systematically Partition each of the numbers from 6-10 in different ways systematically in a range of contexts For any number within 10, be able to say what is one more / fewer / less in a range of contexts For any number within 20, be able to say what is one more / fewer / less in a range of contexts Find and reason about the sum of two 1 digit addends in concrete and pictorial aggregation and augmentation contexts including using the + and = signs Find and reason about the difference between two 1 digit	Compare and order numbers from 0-100 using <, > and = Recognise and use inverse relationships. Check calculations and solve missing number problems Partition any two-digit number into **different combinations** of tens and ones, explaining their thinking verbally, in pictures or using apparatus Read and write numbers to 100 Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17) Show that + is commutative and – is not Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10, then 17 + 3 = 20; if 7 – 3	Solve problems involving partitioning 3 digit numbers into Hundreds, Tens and Ones Solve problems involving partitioning 3 digit numbers into groups of 50, 25 and 20 in a range of contexts Understand when to use a partitioning, compensation or redistribution strategy when mentally adding or subtracting Solve problems involving comparison and ordering numbers up to 1000 in a range of contexts Add and subtract 3 digit numbers using column addition and subtraction with regrouping in a range of reasoning and problem solving contexts including missing number problems. Identify, represent and estimate numbers using different representations	Solve problems involving partitioning 4 digit numbers into Thousands, Hundreds, Tens and Ones in different contexts Solve problems (particularly in graphing and measures) involving partitioning 4 digit numbers into groups of 500, 250 and 200 Understand when to use a partitioning, compensation or redistribution strategy when mentally adding or subtracting Use rounding to the nearest 10, 100 or 1,000 to approximate answers to problems in a range of contexts Solve problems involving comparison and ordering numbers up to and greater than 1000 in a range of contexts Count backwards	Link the partitioning of up to 6 digit numbers to the relationships between Hundreds, Tens and Ones in a range of contexts Solve problems involving partitioning up to 6 digit numbers into 2,4 and 5 equal parts in a range of contexts Understand when to use a partitioning, compensation or redistribution strategy when mentally adding or subtracting larger numbers Add and subtract up to 6 digit numbers using column addition and subtraction with regrouping in a range of reasoning and problem solving, including multi step, contexts including missing number problems Use strategies involving equal	Order and compare larger numbers (up to ten million) by using the value of the digits in order in a range of contexts Demonstrate that fluent calculation involves making sensible decisions about when to use particular mental strategies and when to use written methods in a range of contexts including in problems which require more than one type of operation Round numbers to a required degree of accuracy Use estimations to check answers to calculations

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	greater than, less than or the same as the other quantity	numbers in concrete and pictorial contexts including using the – and = signs Within 10, where one addend is known, find the other addend in a range of contexts Within 10, find the minuend or subtrahend where the difference is known in a range of contexts Partition 2 digit numbers into Tens and Ones in a range of contexts Add and subtract 1 digit and 2 digit numbers within 20 concretely, pictorially and with missing number contexts.	= 4, then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14)		through 0 to include negative numbers Add and subtract 4 digit numbers using column addition and subtraction with regrouping in a range of reasoning and problem solving contexts including missing number problems Solve problems involving partitioning numbers into integers and decimal fractions (0.1 / 0.01 / 0.001) Use the understanding that 1p is 0.01 of £1 to solve problems involving money	difference to make calculations easier to solve with and without using a written method. Solve problems (particularly in coordinate and graphing contexts) involving the use of negative numbers and calculation across 0	
Multiplication and Division	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	Solve one step problems involving counting in groups of 2,10 and 5 in concrete and pictorial contexts. Recall doubles and halves to 10 and 100	Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary	Solve problems involving understanding the connections between the 2,4 and 8 times tables and the 3,6 and 9 times tables Solve multiplication and division problems in a range of contexts including missing number problems, integer scaling problems and correspondence	Solve multiplication and division problems in a range of contexts using multiplication facts up to 12 x 12 Solve problems in a range of contexts using multiplication and division by 10, 100 and 1,000 Solve problems in a range of contexts	Solve multiplication and division problems, including those with multiples steps in a range of contexts Solve problems involving the multiplication of three factors Solve problems involving multiplication and division of decimal	Solve problems in a range of contexts using long multiplication Solve problems in a range of contexts using long division including with remainders up to 4 digits by 2 digits Identify common factors, multiples and prime numbers

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				problems in which n objects are connected to m objects	using short multiplication Solve problems in a range of contexts using short division including with remainders	fractions Solve problems involving finding factors and multiples of numbers	
Fractions		Solve problems involving recognising and finding half as one of two equal parts and a quarter as one of four equal parts of an object, shape or quantity.	Solve problems involving finding 1/4, 1/3 , 1/2 , 2/4, 3/4, of a number or shape, and know that all parts must be equal parts of the whole Find fractions of amounts e.g ½ of 6 = 3 Recognise simple equivalent fractions e.g 2/4 = ½	Solve problems involving finding unit and non-unit fractions, including tenths, of a set of objects or a shape divided into equal sized parts in a range of contexts Solve problems involving finding, recognising and explaining equivalent fractions with small denominators in a range of contexts Add and subtract fractions with the same denominator within one whole Explain a rule for ordering fractions with the same denominator	Solve problems using factors and multiples to recognise equivalent fractions and simplify where appropriate in a range of contexts Solve problems involving ordering fractions with denominators which are multiples of the same number in a range of contexts	Solve problems involving mixed numbers and improper fractions and convert from one from to the other in a range of contexts Solve problems involving multiplication of proper fractions and mixed numbers by whole numbers in a range of contexts Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25	Solve problems involving comparing, addition and subtraction of fractions with different denominations and mixed numbers in a range of contexts Solve problems involving multiplication and division of pairs of proper fractions by whole number, writing the answer in its simplest form Solve problems involving equivalences between simple fractions, decimals and percentages in a range of contexts Identify value of each digit up to 3 decimal places and solve problems including rounding Multiply and divide numbers by 10, 100 and 1000 up to 3 decimal places
Measures		Know that the number of coins in a set is different from	Read scales in divisions of ones, twos, fives and tens	Solve problems involving measures where scales of different sorts are	Solve problems involving measures where scales are	Solve problems involving calculation of measures measured in	Solve problems involving understanding when rounding is useful for

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		the total value of the coins and use this to solve problems in a range of contexts Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. Compare, describe and solve practical problems for lengths and heights for example, long/short, longer/shorter, tall/short, double/half	Solve problems involving using different coins to make the same amount including change Read the time on a clock to the nearest 15 minutes Know the number of minutes in an hour and number of hours in a day Estimate, measure, compare and order lengths, mass, volume and capacity Compare and sequence intervals of time	divided into 100s, 10s, 50s, 25s and 20s (e.g. length, mass, capacity and money / coins) Tell and write the time from an analogue clock and 12-hour and 24-hour clocks	divided into 1000s, 100s, 500s, 250s and 200s (e.g. length, mass, capacity) including converting between units of measurement Solve problems involving calculation of area and perimeter in a range of contexts	negative numbers on both horizontal and vertical scales	approximation, estimation or finding averages and when a precise answer is necessary Solve problems involving calculating the area of parallelograms and triangles
Statistics			Interpret and construct simple pictograms, tally charts and simple tables	Interpret and present data using bar charts, picograms and tables Compare and find the sum and difference using graphs	Interpret and present discrete and continuous data using bar charts and time graphs	Complete, read and interpret information in tables including timetables	Solve problems involving interpretation of pie charts and line graphs Solve problems in a range of contexts involving the calculation of the mean as an average
Geometry		Solve problems involving the naming of 2D shapes including rectangles, squares, circles and triangles Describe position, direction and movement including 1/2 , ¼ and ¾ turns	Solve problems involving the naming of and describing the properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry. Describe rotation in terms of right angles, ½ and ¾ turns (clockwise and anti-clockwise) Order and arrange objects	Solve problems involving identifying right angles, recognising that two right angles make a half-term, three make three quarters of a turn and four a complete turn Solve problems involving identifying whether angles are acute or obtuse. Recognise name and	Solve problems involving comparison and classification of shapes, including quadrilaterals and triangles, based on their properties and sizes in a range of contexts Solve problems involving Identifying lines of symmetry in 2D shapes presented	Draw given angles and measure them in degrees in a range of problem solving contexts	Solve problems involving naming parts of circles, including radius, diameter and circumference and knowing that the diameter is twice the radius. Solve problems involving drawing and translating shapes on the coordinate plane and reflecting them in the axes

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			into patterns/ sequence	describe 3D shapes in different orientations	in different orientations Measure and calculate area and perimeter of rectilinear shapes		Solve problems involving recognising angles where they meet at a point, are on a straight line, or are vertically opposite, and finding missing angles.
Algebra					Perimeter can be expressed algebraically e.g 2 (a+b)		Use simple formulae Find pairs of numbers that satisfy number sentences involving 2 unknowns Generate and describe linear number sequences
Ratio and proportion							Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples (including % for comparison) Solve problems involving similar shapes where the scale factor is to be found