Class 4 - Year 5

Maths Overview – Cycle A & B

	Autumn Term		Spring Term		Summer Term	
Area of Maths	**Number & Place Value Addition & Subtraction**	**Multiplication & Division Fractions**	**Fractions, Decimals & Percentages Statistics**	**Geometry**	**Measure**	**Geometry: Position, Direction & Motion**
Knowledge	• Read, write, order and compare numbers to at least 1,000,000 • Determine the value of each digit in a number up to 1,000,000 • Count forwards or backwards in steps of powers of 10 • Interpret negative numbers in context, count forwards or backwards with negative whole numbers through zero • Round any number up to 1,000,000 t the nearest 10, 100, 1000, 10,000 and 100,000 • Read Roman numerals to 1000 and recognise years • Solve number and practical problems that involve number and place value • Add and subtract numbers with more than four digits, using formal written methods • Add and subtract numbers mentally, with increasingly large numbers • Use rounding to check answers to calculations and determine levels of accuracy • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use	• Identify multiples and factors, including finding factor pairs of a number and common factors of two numbers • Know and use the vocabulary of prime numbers, prime factors and composite numbers • Establish whether a number up to 100 is prime and recall prime numbers to 19 • Recognise and use square numbers and cube numbers and the notation for them (^{2}), (^{3}) • Multiply numbers up to 4-digits by a 1 or 2-digit number, using an efficient method, including long multiplication for 2-digit numbers • Divide numbers of up to 4 digits by a 1-digit number using the formal method of short division and interpret remainders appropriately • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • Solve problems involving all four operations, including the knowledge of factors, multiples, squares and primes • Compare and order fractions whose denominators are all multiples of the same number • Recognise mixed number and improper fractions and convert from one to the other • Add and subtract fractions with the same denominator	• Read and write decimal numbers as fractions (e.g 0.71 = 71/100) • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • Round numbers with two decimal places to the nearest whole number and one decimal place • Read, write, order and compare numbers with up to three decimal places • Solve problems involving number up to three decimal places • Recognise the percent symbol (%) • And understand that 'per cent' relates to 'number of parts per hundred' and write percentages as a fraction with a denominator of 100 and as a decimal • Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25 • Solve comparison, sum and difference problems using information presented in line graphs • Complete, read and interpret information in tables, including time	• Distinguish between regular and irregular polygons based on reasoning about equal sides and triangles • Use the properties of rectangles to deduce related facts and find missing lengths and angles • Identify 3D shapes, including cubes and other cuboids, from 2D representations • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • Draw given angles and measure them in degrees • Identify angles at a point and one whole turn (360 ˚) • Identify angles at a point on a straight line and half a turn (total 180 ˚) • Identify other multiples of 90˚ • Compare angles and draw shapes using given dimensions and angles	• Convert between different units of metric measure [E.g. km/m; cm/m; cm/mm; g/kg; l/ml] • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • Use all four operations to solve problems involving measure [E.g. length, mass, volume, money] using decimal notation, including scaling] • Use all four operations to solve problems involving measure • Solve problems involving converting between units of time • Measure and calculate the perimeter of composite rectilinear shapes in centimetres and meters • Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square meters (m^2) and estimate the area of irregular shapes	• Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language and know that the shape has not changed • Consolidation and recap of required topics
Key Vocabulary	compare, order, value, digit, place value, negative, zero, round, nearest, add, more than, subtract, minus, less than	multiple, factor, prime number, composite number, square, cube, multiply, times, product, divide, share, compare, order, improper, mixed number, add	fraction, half, third, quarter, whole, decimal, decimal places, percent, tenth, hundredth, thousandth, equivalent, multiple, graph, bar, chart, line	regular, irregular, polygon, triangle, scalene, isosceles, equilateral, vertices, edge, side, angle, acute, right angle, obtuse, reflex, turn, line	equivalent, perimeter, area, volume, estimate, rectilinear, composite, shape	co-ordinates, quadrant, reflection, translation

Fluency - become fluent in the fundamentals of mathematics, through frequent practice with increasingly complex problems, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems.
Understanding & Being accurate and Efficient

Reasoning - reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
Exploring & Proving

Problem Solving - solve problems by applying mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
Applying & Persevering