Year 5 Maths Curriculum Overview

Topic	National Curriculum Objectives	Term Covered	Vocabulary	Key Problem Solving Strategies	Useful Resources
Place Value: Counting	⇒ Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 ⇒ Count forwards and backwards with positive and negative whole numbers, including through zero	Autumn 1	Place value, digit, place value columns, ones, tens, hundreds, thousands (etc), part, whole, increase, decrease, negative numbers, positive numbers, multiples	Counting forwards and backwards; skip counting in 10s; using base 10 equipment, place value grids and counters, (empty) number lines (with negative numbers), Gattegno charts	Base 10 equipment, place value grids and counters, (empty) number lines (with negative numbers), Gattegno charts, thermometers (negative numbers with temperature)
Place Value: Represent	⇒ Read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit ⇒ Read Roman numerals to 1000 (M) and recognise years written in Roman numerals	Autumn 1	Place value, digit, place value columns, ones, tens, hundreds, thousands (etc), part, whole, value, Roman numerals, least, greatest, ascending, descending, partition, increase, decrease	Using base 10 equipment, place value grids and counters, part-whole models, (empty) number lines, Gattegno charts	Base 10 equipment, place value grids and counters, part-whole models, (empty) number lines, Gattegno charts
Place Value: Use PV and Compare	⇒ (Read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit	Autumn 1	Place value, digit, place value columns, ones, tens, hundreds, thousands (etc), part, whole, least, greatest, ascending, descending, partition, increase, decrease	Using base 10 equipment, place value grids and counters, part-whole models, (empty) number lines, Gattegno charts	Base 10 equipment, place value grids and counters, part-whole models, (empty) number lines, Gattegno charts
Place Value: Problems & Rounding	⇒ Interpret negative numbers in context ⇒ Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000, and 100 000	Autumn 1	Add, subtract, plus, minus, takeaway, place value, place value columns, ones, tens, hundreds, thousands (etc), part, whole, Roman numerals, digit, round, multiples,	Counting forwards and backwards, using base 10 equipment, place value grids and counters, part-whole models, (empty) number lines (with	Base 10 equipment, place value grids and counters, part-whole models, (empty) number lines (with negative numbers), Gattegno charts

Year 5 Maths Curriculum Overview

	⇒ Solve number problems and practical problems that involve all of the above		partition, sequence, pattern, term-to-term rule, negative numbers, positive numbers	negative numbers), Gattegno charts	
Addition & Subtraction: Recall, Represent, Use	⇒ Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Autumn 2	Place value, place value columns, ones, tens, hundreds, thousands (etc), exchange, digit, value, operations, commutative, place holder, approximate, round	Using place value grids and counters	Place value grids and counters
Addition & Subtraction: Calculations	⇒ Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) ⇒ Add and subtract numbers mentally with increasingly large numbers	Autumn 2	Column addition, column subtraction, place value, place value columns, ones, tens, hundreds, thousands (etc), exchange, digit, value, place holder, commutative, addition, subtraction, operations	Using place value grids and counters, Gattegno charts, bar models	Place value grids and counters, Gattegno charts, bar models
Addition & Subtraction: Solve Problems	⇒ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why ⇒ Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Autumn 2	Column addition, column subtraction, place value, place value columns, ones, tens, hundreds, thousands (etc), exchange, digit, value, place holder, commutative, addition, subtraction, operations	Using place value grids and counters, Gattegno charts, bar models	Place value grids and counters, Gattegno charts, bar models
Multiplication & Division: Recall Represent, Use	⇒ Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	Autumn 4	Times tables, multiples, whole numbers, arrays, factors, factor pairs, product, multiplication and division facts, prime numbers, composite	Using times table knowledge, arrays, multiplication tables, multilink cubes, place value grids and	Arrays, multiplication tables, multilink cubes, place value grids and counters

Year 5 Maths Curriculum Overview

	⇒ Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers ⇒ Establish whether a number up to 100 is prime and recall prime numbers up to 19 ⇒ Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})		numbers, prime factors, square numbers, cube numbers, multiply, divide, digits, value	counters, known multiplication facts	
Multiplication & Division: Calculations	⇒ Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers ⇒ Multiply and divide numbers mentally drawing upon known facts ⇒ 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 ⇒ Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	Autumn 4 Spring 1 Summer 1	Times tables, multiples, arrays, product, multiplication and division facts, place value, place value columns, place holder, digits, value, division, multiplication, product, exchange, partition, calculation, addition, subtraction, difference	Using times table knowledge, known number bonds, arrays, multiplication tables, multilink cubes, grid method, place value grids and counters, known multiplication facts, short division, column multiplication, base 10 equipment, mental arithmetic, Gattegno charts, part-whole models	Arrays, multiplication tables, multilink cubes, place value grids and counters, base 10 equipment, number lines, part-whole models, charts
Multiplication & Division: Solve Problems	⇒ Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes ⇒ Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	Autumn 4 Spring 1	Factors, product, arrays, multiplication and division facts, composite numbers, square and cube numbers, place value, place value columns, place holder, digits, value, multiplication, division,	Using times table knowledge, arrays, multiplication tables, multilink cubes, place value grids and counters, known multiplication facts, grid method, column multiplication, short	Arrays, multiplication table, Venn diagrams, multilink cubes, place value grids and counters, base 10 equipment

Year 5 Maths Curriculum Overview

			product, exchange, partition	division, base 10 equipment	
Multiplication & Division: Combined Operations	⇒ Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Spring 1	Place value, place value columns, ones, tens, hundreds, thousands (etc), value, digit, place holder, multiplication, division, product, exchange, area, scale, partition, calculation, remainders	Using place value grids and counters, grid method, column multiplication, short division, base 10 equipment	Place value grids and counters, base 10 equipment
Fractions: Recognise and Write	⇒ Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths ⇒ Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]	Spring 2	Equivalent, fractions, tenths, hundredths, numerators, denominators, multiplication, division, improper fractions, mixed numbers, parts, whole, convert, multiple, common denominator, (flexible) partitioning, exchange, integer, whole number, unit fraction, non-unit fraction	Folding paper strips; drawing models; using multiplication and division to find equivalent fractions, bar models (single and comparison), cubes, known times tables, (empty) number lines	Bar models (single and comparison), cubes, counting sticks, (empty) number lines
Fractions: Compare	⇒ Compare and order fractions whose denominators are all multiples of the same number	Spring 2	Fractions, numerators, denominators, whole, parts, improper fractions, mixed numbers, increasing, decreasing, intervals, greatest, least, whole number, multiple, non-unit fraction, unit fraction, integer, exchange, common denominator, simplify	Folding paper strips; drawing models; using bar models (single and comparison), cubes, known times tables, (empty) number lines	Bar models (single and comparison), cubes, counting sticks, (empty) number lines
Fractions: Calculations	⇒ Add and subtract fractions with the same denominator	Spring 3	Digit, value, partition, fractions, equal parts,	Colouring hundred squares; folding 2-D	Part-whole models, hundred squares, bead

Year 5 Maths Curriculum Overview

	and denominators that are multiples of the same number ⇒ Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams		simplified, equivalent, multiple, denominator, numerator, proportion, whole number, mixed fraction, multiplication	shapes or strips of paper; using part-whole models, bead strings, number lines, base 10 equipment, tens frames	strings, number lines, 2-D shapes, strips of paper
Decimals: Recognise and Write	⇒ Read and write decimal numbers as fractions [for example, 0.71 = $\frac{71}{100}$] ⇒ Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Spring 3	Decimals, decimal point, digit, equal parts, partition, place value, place value columns, place holder, ones, tenths, hundredths, thousandths, fractions, convert, equivalence, value, denominator, numerator	Colouring hundred squares; folding 2-D shapes or strips of paper; using place value charts and counters, part-whole models, bead strings, number lines, base 10 equipment, tens frames	Place value charts and counters, part-whole models, hundred squares, bead strings, number lines, base 10 equipment, tens frames, 2-D shapes, strips of paper
Decimals: Compare	⇒ Round decimals with two decimal places to the nearest whole number and to one decimal place ⇒ Read, write, order and compare numbers with up to three decimal places	Spring 3	Decimals, decimal point, digit, value, partition, place value, place value columns, round, place holder, equal parts, ones, tenths, hundredths, thousandths, greater, less	Using place value charts and counters, part-whole models, bead strings, number lines, base 10 equipment, tens frames	Place value charts and counters, part-whole models, hundred squares, bead strings, number lines, base 10 equipment, tens frames,
Decimals: Calculation & Problems	⇒ Solve problems involving number up to three decimal places	Summer 1	Decimals, one whole, place value, place value columns, digit, value, exchange, decimal point, ones, tenths, hundredths, thousandths, calculation, addition, subtraction, difference, complements to 1, partition, place holder, whole number, integer, multiply, divide	Shading hundred squares; using place value grids and counters, base 10 equipment, number lines, known number bonds, part-whole models, bridging to 1, column addition, column subtraction, bar models, mental arithmetic, Gattegno charts	Hundred squares, place value grids and counters, number lines, part-whole models, bar models, Gattegno charts

Year 5 Maths Curriculum Overview

Fractions, Decimals and Percentages	⇒ Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 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 fraction with a denominator of a multiple of 10 or 25	Spring 3	Decimals, decimal point, digit, value, partition, place value, place value columns, ones, tenths, hundredths, thousandths, place holder, fractions, convert, equal parts, simplified, equivalence, round, greater, less, per cent, 'number of parts per hundred', denominator, numerator, proportion, multiple	Colouring hundred squares; folding 2-D shapes; folding strips of paper; using place value charts and counters, part-whole models, bead strings, number lines, base 10 equipment, tens frames	Place value charts and counters, part-whole models, hundred squares, bead strings, number lines, base 10 equipment, tens frames, 2-D shapes, strips of paper
Measurement: Using Measures	⇒ Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) ⇒ 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 [for example, length, mass, volume, money] using decimal notation, including scaling	Summer 1 Summer 4 Summer 5	Place value, place value columns, digit, value, exchange, calculation, addition, subtraction, multiplication, division, partition, unit, length, mass, kilo, metres, kilometres, grams, kilograms, weight, weigh, convert, milli-, millimetres, litres, millilitres, centimetres, centi-, imperial, metric, inches, pounds (lbs), pints, volume, capacity, greatest, smallest, estimate, approximate	Using place value grids and counters, base 10 equipment, number lines, known number bonds to 10, 100 and 1000, part-whole models, bar models, mental arithmetic, Gattegno charts, formal written methods of calculation for addition, subtraction, multiplication and division	Hundred squares, place value grids and counters, number lines, part-whole models, bar models, Gattegno charts, rulers, metre sticks, jugs, bottles, objects to measure, pint bottles, centimetre cubes, containers
Measurement: Money	⇒ Use all four operations to solve problems involving measure [for example, money]	Summer 1	Place value, place value columns, digit, value, exchange, decimal point, ones, tenths, hundredths, whole number, calculation, addition, subtraction	Using place value grids and counters, base 10 equipment, number lines, known number bonds, part-whole models, bridging to 1, column addition,	Hundred squares, place value grids and counters, number lines, part-whole models, bar models, Gattegno charts

Year 5 Maths Curriculum Overview

			multiply, divide, difference, partition, place holder, integer,	column subtraction, bar models, mental arithmetic, Gattegno charts	
Measurement: Time	⇒ Solve problems involving converting between units of time	Summer 4	Unit, years, months, weeks, days, hours, minutes, seconds	Using time lines, calendars, clocks, timetables	Time lines, calendars, clocks, timetables
Measurement: Perimeter, Area, Volume	⇒ Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ⇒ Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes ⇒ Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]	Autumn 5 Summer 5	Perimeter, rectilinear, measurement, shape, sides, length, area, properties, width, multiply, formula, compound shapes, estimate	Drawing shapes	Rulers, rectilinear shapes
Geometry: 2-D Shapes	⇒ Distinguish between regular and irregular polygons based on reasoning about equal sides and angles ⇒ Use the properties of rectangles to deduce related facts and find missing lengths and angles	Summer 2	Angle, acute, obtuse, angles, degrees, reflex angles, right angle, scale, straight line, parallel, perpendicular, regular polygon, irregular polygon, equal, rectangle	Estimating angles; measuring lines and angles with rulers and protractors; using part-whole models, bar models, mental arithmetic, written calculation methods	Compass directions, clocks, protractors, bar models, part-whole models, square grids, 2-D shapes
Geometry: 3-D Shapes	⇒ Identify 3-D shapes, including cubes and other cuboids, from 2-D representations	Summer 2	3-D shapes, 2-D nets, properties, faces, curved surfaces, vertices, edges, plans, elevations	Using known facts about shape properties	3-D shapes, 2-D nets
Geometry: Angles & Lines	⇒ Know angles are measured in degrees: estimate and	Summer 2	Angle, acute, obtuse, angles, degrees, full	Drawing and measuring lines and	Compass directions, clocks, protractors, bar models,

Year 5 Maths Curriculum Overview

	compare acute, obtuse and reflex angles ⇒ Draw given angles and measure them in degrees ⇒ Identify: ⇒ Angles at a point and one whole turn (total 360°) ⇒ Angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) ⇒ Other multiples of 90°		turn, half-turn, quarter-turn, reflex angles, right angle, scale, estimate	angles with rulers and protractors; estimating angles; using part-whole models, bar models, mental arithmetic, written calculation methods	part-whole models, square grids
Geometry: Position & Direction	⇒ 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	Summer 3	Coordinates, origin, x-coordinate, y-coordinate, movement, reflect, vertical, right, left, up, down, object, image, horizontal, parallel, x-axis, y-axis, vertices, shapes, translate, dimensions	Plotting on grids; using mirrors	Grids, mirrors, 2-D shapes to reflect and translate
Statistics: Present and Interpret	⇒ Complete, read and interpret information in tables, including timetables	Autumn 3	Data, table, multiples, column, row	Times tables facts	Two-way tables, timetables
Statistics: Solve Problems	⇒ Solve comparison, sum and difference problems using information presented in a line graph	Autumn 3	Line graphs, horizontal axis, vertical axis, interval, estimate, data, coordinates, plot, conversion graph, multiples, sum, difference, column, row	Using knowledge of number lines to read line graphs, times tables facts, knowledge of scales and coordinates to represent data	Rulers, line graphs