Year 6 Maths Curriculum Overview

Topic	National Curriculum Objectives	Term Covered	Vocabulary	Key Problem Solving Strategies	Useful Resources
Place Value: Represent	⇒ Read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit	Autumn 1	Represent, ones, tens, hundreds, thousands, tens of thousands, hundreds of thousands, digit, value, whole, part, place value, place value columns, greater than, less than	Counting forwards and backwards; using part-whole models, place value grids and counters, horizontal and vertical number lines	Part-whole models, place value grids and counters, horizontal and vertical number lines
Place Value: Use PV and Compare	⇒ (Read, write), order and compare numbers up to 10 000 000 and determine the value of each digit	Autumn 1	Represent, ones, tens, hundreds, thousands, tens of thousands, hundreds of thousands, digit, value, whole, part, place value, place value columns, greater than, less than	Counting forwards and backwards; using part-whole models, place value grids and counters, horizontal and vertical number lines	Part-whole models, place value grids and counters, horizontal and vertical number lines
Place Value: Problems & Rounding	⇒ Round any whole number to a required degree of accuracy ⇒ Use negative numbers in context, and calculate intervals across zero ⇒ Solve number and practical problems that involve all of the above	Autumn 1	Represent, ones, tens, hundreds, thousands, tens of thousands, hundreds of thousands, digit, value, place value columns, whole, parts, round, whole numbers, place value, negative, positive, intervals	Counting forwards and backwards; using part-whole models, place value grids and counters, horizontal and vertical number lines	Part-whole models, place value grids and counters, horizontal and vertical number lines
Addition & Subtraction: Calculations	⇒ Perform mental calculations, including with mixed operations and large numbers ⇒ Use their knowledge of the order of operations to carry out calculations involving the four operations	Autumn 2	Addition, subtraction, multiplication, division, exchange, digit, factor, factor pairs, (common) multiples, total, divisor, dividend, calculation, (mixed) operations	Using bar models, mental arithmetic, knowledge of factors, known number facts, column addition, column subtraction, (empty) number lines	Bar models, number lines, (empty) number lines
Addition & Subtraction: Solve Problems	⇒ Solve addition and subtraction multi-step problems in	Autumn 2	Addition, subtraction, exchange, digit, inverse,	Using bar models, mental arithmetic,	Bar models, number lines, (empty) number lines

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	contexts, deciding which operations and methods to use and why		calculation, efficient, operations, commutative, methods	known number facts, (empty) number lines	
Multiplication & Division: Recall Represent, Use	⇒ Identify common factors, common multiples and prime numbers ⇒ Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	Autumn 2	Multiplication, division, exchange, digit, total, inverse, factor pairs, (common) factors and multiples, remainders, divisor, dividend, round, arrays, prime numbers, calculation, composite numbers, operations, estimate, commutative, accuracy	Using knowledge of factors, known number facts	
Multiplication & Division: Calculations	⇒ Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication ⇒ Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context ⇒ 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 ⇒ Perform mental calculations, including with mixed operations and large numbers	Autumn 2	Multiplication, division, exchange, digit, factor, factor pairs, inverse, (common) multiples, remainders, divisor, dividend, total, arrays, calculation, (mixed) operations, fractions, commutative	Using bar models, column addition, column subtraction, mental arithmetic, short division, known number facts, (empty) number lines, long division, knowledge of factors	Bar models, number lines, (empty) number lines

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Multiplication & Division: Solve Problems	⇒ Solve problems involving addition, subtraction, multiplication and division	Autumn 2	Addition, subtraction, multiplication, division, exchange, digit, divisor, dividend, total, arrays, calculation, efficient, (mixed) operations, commutative	Using bar models, column addition and subtraction, mental arithmetic, knowledge of factors, repeated subtraction, (empty) number lines, column multiplication, short division, long division, known number facts	Bar models, number lines, (empty) number lines
Multiplication & Division: Combined Operations	⇒ Use their knowledge of the order of operations to carry out calculations involving the four operations	Autumn 2	Addition, subtraction, multiplication, division, exchange, digit, divisor, dividend, total, arrays, calculation, efficient, (mixed) operations, commutative	Using bar models, column addition and subtraction, mental arithmetic, knowledge of factors, repeated subtraction, (empty) number lines, column multiplication, short division, long division, known number facts	Bar models, number lines, (empty) number lines
Fractions: Compare	⇒ Use common factors to simplify fractions; use common multiples to express fractions in the same denomination ⇒ Compare and order fractions, including fractions > 1	Autumn 3	Fractions, (highest common) factors, larger, smaller, simplify, equivalent, partition, numerators, (lowest common) multiples, denominators, mixed numbers	Using (empty) number lines, bar models, known times table facts	(Empty) number lines, bar models, strips of paper
Fractions: Calculations	⇒ Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions ⇒ Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]	Autumn 3	(Proper, improper) fractions, equivalent, addition, (common) denominators, division, (common) numerators, subtraction, mixed numbers, partition, multiplication, whole numbers, calculation, integers, whole, part,	Folding strips of paper; using (empty) number lines, bar models, part-whole models, known times table facts	(Empty) number lines, bar models, part-whole models, strips of paper

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	⇒ Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]		operations, product, equation		
Decimals: Recognise and Write	⇒ Identify the value of each digit in numbers given to three decimal places	Spring 1	Value, decimals, place value, decimal point, place value column, tenths, hundredth, calculate, thousandths, place holder, simplify, partition	Using place value grids and counters, Gattegno charts, bar models, number lines	Place value grids and counters, Gattegno charts, bar models, number lines
Decimals: Calculation & Problems	⇒ Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places ⇒ Multiply one-digit numbers with up to two decimal places by whole numbers ⇒ Use written division methods in cases where the answer has up to two decimal places ⇒ Solve problems which require answer to be rounded to specified degrees of accuracy	Spring 1	Value, place value, place value column, exchange, tenths, hundredth, calculate, thousandths, place holder, decimal point, decimals, partition, multiplication, division, round, whole number, accuracy	Using place value grids and counters, Gattegno charts, bar models, short division, long division, number lines	Place value grids and counters, Gattegno charts, bar models, number lines
Fractions, Decimals and Percentages	⇒ Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] ⇒ Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	Spring 1 Spring 2	Value, place value, place value column, exchange, decimals, tenths, hundredths, thousandths, place holder, decimal point, sharing, grouping, partition, division, denominator, numerator, (unit) fractions, equal groups, percent, equivalent, decimal, percentages, efficient, whole	Shading 2-D shapes; shading hundred squares; folding paper strips; using place value grids and counters, part-whole models, Gattegno charts, mental arithmetic, bar models, short division, number lines	Place value grids and counters, Gattegno charts, bar models, 2-D shapes, paper strips, number lines, hundred squares, part-whole models

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Ratio and Proportion	⇒ Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts ⇒ Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] 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 fractions and multiples	Spring 6	Ratio, 'for every x something, there are y something else', fractions, compare, denominator, similar, numerator, altogether, colon, order, parts, whole, scale factor, calculation, division, multiplication, width, length, percentages, triple, double, smaller, larger, enlargement	Drawing bar models, 2D shapes on a grid; using concrete manipulatives, bar models, known multiplication and division facts	Objects or similar, bar models
Algebra	⇒ Use simple formulae ⇒ 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	Spring 3	Operation, value, input, output, expressions, substitute, algebraic, algebra, multiplication, division, subtraction, addition, formulae, formula, inverse, balance, amount, variable, integer, equation, multiples	Work backwards; using one-step and two-step function machines, bar models	One-step and two-step function machines, objects or similar, bar models
Measurement: Using Measures	⇒ Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate ⇒ Use, read and write and convert between standard	Spring 4	Metric, imperial, length, mass, capacity, volume, estimate, measure, appropriately (equal to), convert, place holder, scales, unit of measurement, operation	Using knowledge about multiplying and dividing by 10, 100 and 1000, bar models	Metre sticks, bar models

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	units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places ⇒ Convert between miles and kilometres				
Measurement: Time	⇒ Use, read, write and convert between standard units, converting measurements of time from a smaller unit of measurement to a larger unit, and vice versa	Year 5 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	⇒ Recognise that shapes with the same areas can have different perimeters and vice versa ⇒ Recognise when it is possible to use formulae for area and volume of shapes ⇒ Calculate the area of parallelograms and triangles ⇒ Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]	Spring 5	Rectilinear shapes, area, length, factors, perimeter, formula, formulae, approximate, estimate, triangle, rectangle, square, right-angled triangle, perpendicular, base, length, height, parallelogram, volume, cubic units, cuboids, cubes	Drawing rectangles; using knowledge of factors, knowledge of times-tables, mental centimetre cubes, arithmetic	Rectilinear shapes, triangles, parallelograms, centimetre cubes, cubes and cuboids
Geometry: 2-D Shapes	⇒ Draw 2-D shapes using given dimensions and angles ⇒ Compare and classify geometric shapes based on their properties and sizes ⇒ Illustrate and name parts of circles, including radius,	Summer 1	Angles, compass points, protractor, scale, right-angle, obtuse, acute, reflex, degrees, vertex, interior, triangle, right-angled, equilateral, scalene, isosceles,	Drawing shapes on different grids like squared or dotted paper; using protractors	Protractors, different triangles, different quadrilaterals, circles, squared paper, dotted paper, plain paper

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	diameter and circumference and know that the diameter is twice the radius		calculate, quadrilateral, rhombus, trapezium, parallelogram, (regular and irregular) polygons, circle, radius, diameter, circumference, centre		
Geometry: 3-D Shapes	⇒ Recognise, describe and build simple 3-D shapes, including making nets	Summer 1	Angles, protractor, degrees, vertex, properties, 2-D shapes, 3-D shapes, nets	Drawing shapes on different grids like squared or dotted paper; using protractors	Protractors, different triangles, different quadrilaterals, squared paper, dotted paper, plain paper
Geometry: Angles & Lines	⇒ Find unknown angles in any triangles, quadrilaterals, and regular polygons ⇒ Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	Summer 1	Angles, compass points, protractor, scale, right-angle, obtuse, acute, reflex, degrees, vertex, interior, properties, triangles, equilateral, isosceles, right-angled, scalene, parallelogram, trapezium, rhombus, quadrilateral, (regular and irregular) polygons	Drawing shapes on different grids like squared or dotted paper; using protractors	Protractors, different triangles, different quadrilaterals, squared paper, dotted paper, plain paper
Geometry: Position & Direction	⇒ Describe positions on the full coordinate grid (all four quadrants) ⇒ Draw and translate simple shapes on the coordinate plane, and reflect them in the exes	Autumn 4	Coordinates, quadrant, x-axis, y-axis, positive, negative, endpoint, origin, translation, left, right, up, down, vertex, reflection, mirror line	Drawing shapes on grids; plotting points on grids; using mirrors to support reflection	Mirrors, grids with four quadrants
Statistics: Present and Interpret	⇒ Interpret and construct pie charts and line graphs and use these to solve problems	Summer 3	Data, interpret, scale, line graph, continuous, discrete, intervals, x-axis, y-axis, frequency, pie chart, fraction, percentages	Reading line graphs, pie charts; creating line graphs; using protractors when creating pie charts	Line graphs, tables of data, pie charts, protractors
Statistics: Solve Problems	⇒ Calculate and interpret the mean as an average	Summer 3	Mean average, addition, division, total	Using known number facts, knowledge of addition and division	Data

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