

Year 6 Maths Curriculum



Autumn

Key Vocab

Number & Place Value

Integer, Digit / Numeral, Place value (including numbers up to 10,000,000) , Powers of 10, Negative numbers / intervals, Compare / Order (greater than, less than), Round (to nearest integer, power of 10), Degree of accuracy, Order of operations, Equivalent expressions , Brackets (in calculations)

Four Operations (Addition, Subtraction, Multiplication, Division)

Factor / Common factor, Multiple / Common multiple, Prime number / Prime factor, Square number, Formal written methods, Inverse operations

Fractions

Simplify, Equivalent fractions, Mixed number / Improper fraction, Ratio / Proportion, Percentages

Key Skills

Number: Place Value

- Read, write, order and compare numbers up to 10,000,000.
- Recognise the place value of each digit in numbers up to 10,000,000.
- Count forwards and backwards in powers of 10 and other multiples.
- Use negative numbers in context and on a number line.
- Round any whole number to a required degree of accuracy.
- Solve problems involving place value, rounding and estimation.

Number: Properties of Number

- Recognise and generate prime numbers and composite numbers.
- Identify square and cube numbers and their notation.
- Find factors, multiples, and common factors/multiples.

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- Solve problems using knowledge of number properties.

Number: Addition, Subtraction Multiplication and Division

- 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
- identify common factors, common multiples and prime numbers
- use their knowledge of the order of operations to carry out calculations involving the four operations
- 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
- use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Number: Fractions, Decimals, and Percentages

- Compare and order fractions, decimals and percentages.
- Add, subtract, multiply and divide fractions and decimals.
- Convert between fractions, decimals and percentages.
- Solve problems involving fractions, decimals and percentages in real-life contexts.
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Spring

Key Vocab

Ratio

Ratio, Proportion, Part-whole, Ratio symbol (:)

Algebra

Sequence, Rule, Term, Algebra, Expression, Equation, Formula, Substitute, Generalise, Operation, Inverse, Calculate, Solution

Decimals

Decimal, Decimal place (dp), Multiply, Divide, Placeholder, Tenth, Hundredth, Thousandth, Recurring decimal

Percentages

Per cent (%), Percentage, Part, Whole, Fraction, Decimal, Convert, Compare, Order, Equivalent, Simplify, Greater than (>), Less than (<)

Area, Perimeter and Volume

Perimeter, Length, Width / breadth, Height, Boundary, Dimensions, Compound shape, Horizontal / vertical sides, Area, Square centimetre (cm^2), Square metre (m^2), Base \times height, Tiling, Rectilinear shape, Composite / compound area, Volume, Capacity, Cubic centimetre (cm^3), Cubic metre (m^3), Cube / cuboid, Layers, Base area, Depth, Prism

Statistics

Data, Discrete data, Continuous data, Line graph, Pie chart, Sector, Percentage (%), Axis/Axes, Scale, Vertical axis, Interpret, Compare, Trend, Mean, Average

Key Skills

Number: 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

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- 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.

Number: Algebra (Introductory)

- Use simple formulae expressed in words and symbols.
- Substitute values into formulae and expressions.
- Solve simple one-step and two-step equations.
- Generate and describe number sequences, including those involving a simple rule.

Number: Fractions, Decimals, and Percentages

- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including fractions > 1
- 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
- divide proper fractions by whole numbers
- associate a fraction with division and calculate decimal fraction equivalents
 - for a simple fraction
- identify the value of each digit in numbers given to three decimal places and 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 answers to be rounded to specified degrees of accuracy
- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Measurement: Perimeter, Area, and Volume

- Calculate and compare perimeter of composite shapes.
- Calculate the area of rectangles and composite rectilinear shapes using formulae where appropriate.
- Calculate and estimate volume of cubes and cuboids using standard units.
- Solve multi-step problems involving perimeter, area, and volume.

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Statistics

- Interpret and construct line graphs, bar charts, pie charts, and tables.
- Solve problems using data, including two-step problems.
- Draw conclusions and make predictions from data.
- Calculate and interpret the mean as an average.

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Summer

Key Vocab

Properties of Shape

Degree, Angle, acute, obtuse, reflex, right angle, Protractor, Triangle, isosceles, equilateral, scalene, Regular / Irregular polygon, Quadrilateral, parallelogram, kite, rhombus, trapezium, Diameter, Radius, Circumference, Concentric, Perimeter, Net, Pyramid, Tetrahedron, Cylinder, Prism, Cuboid, Cube, Vertically opposite angles

Position & Direction

Four quadrants, Coordinates, x- axis, y-axis, Translations, Reflections

Key Skills

Geometry: Properties of Shape and Position

- Identify, measure, and compare angles, including angles in triangles, quadrilaterals and polygons.
- Calculate missing angles using properties of shapes.
- Draw, classify and compare 2D and 3D shapes based on properties including making nets.
- Use co-ordinates to describe position and plot points in all four quadrants.
- Illustrate and name parts of circles, including radius, diameter and circumference.
- Recognise angles where they meet at a point, or on a straight line, or vertically opposite and find missing angles.
- Draw and translate simple shape on a coordinate plane and reflect them in an axis.

Themed projects which may include the following:

Number: Algebra

- Generate and describe sequences using algebraic rules.
- Substitute up to 2 values into formulae and expressions accurately.
- Solve one-step and two-step equations systematically.
- Find possibilities of combinations of 2 variables
- Use algebraic thinking to solve problems and reason mathematically.

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Measurement: Converting Units, Volume, and Perimeter

- Convert between metric units of length, mass, volume, and time up to 3 decimal places.
- Convert between miles and kilometers
- Calculate and compare perimeter, area, and volume of complex shapes.
- Solve real-life problems involving measurement.