



Maths Yearly Overview

Year 6



Autumn Term

Block One: Place value

- Read, write, order and compare numbers up to 10,000,000, and determine the value of each digit.
- Round any whole number to a required degree of accuracy, including to the nearest 10, 100, 1,000, 10,000, 100,000 and 1,000,000.
- Use negative numbers in practical contexts, including temperature, money and changes in value.
- Calculate intervals across zero when working with positive and negative numbers.
- Solve problems involving numbers up to 10,000,000 by using place-value clues to identify missing digits, numbers and possible values.
- Find all possible numbers that satisfy given conditions involving place value, ordering, comparison and rounding, and present the possibilities systematically.
- Solve problems involving negative numbers by calculating changes and intervals across zero in different contexts.

Block Two: Addition and subtraction

- Solve problems involving addition and subtraction with increasingly large numbers, selecting efficient mental or written methods.
- Use knowledge of the order of operations to carry out calculations involving all four operations.
- Solve multi-step problems involving addition and subtraction, deciding which operations and methods to use and explaining why.
- Use estimation to check answers to calculations and determine an appropriate degree of accuracy in different contexts.
- Solve problems involving missing numbers and unknown values, using inverse operations and reasoning to work backwards.
- Find all possible solutions to addition and subtraction problems involving given conditions and explain how the possibilities have been found systematically.

Block Three: Multiplication and division

- Multiply numbers up to four digits by two-digit whole numbers using the formal written method of long multiplication.
- Divide numbers up to four digits by two-digit whole numbers using the formal written method of long division.
- Use short division to divide numbers up to four digits by a two-digit number where appropriate.
- Interpret remainders from division according to the context, including as whole-number remainders, fractions or by rounding up or down.
- Perform mental calculations involving multiplication and division, including mixed operations and increasingly large numbers.
- Identify common factors, common multiples and prime numbers and use these to solve number problems.

Block Four: Fractions (including decimals and percentages)

- Compare and order fractions, including fractions greater than one, using equivalent fractions and appropriate representations.
- Add and subtract fractions with different denominators and mixed numbers by finding equivalent fractions with a common denominator.
- Multiply pairs of simple proper fractions and give the answer in its simplest form.
- Divide proper fractions by whole numbers and represent the calculation using appropriate fraction models.
- Identify the value of each digit in numbers with up to three decimal places.
- Multiply and divide numbers by 10, 100 and 1,000, giving answers with up to three decimal places.
- Multiply one-digit numbers with up to two decimal places by whole numbers using an appropriate written or mental method.
- Use written division methods where the answer has up to two decimal places.
- Recall and use equivalences between simple fractions, decimals and percentages in different contexts.
- Solve problems involving fraction, decimal and percentage equivalences, including choosing the most appropriate form to use.
- Find all possible fractions, decimals or percentages that satisfy given conditions and present the solutions systematically.
- Identify and correct errors in calculations involving fractions and decimals, explaining how the error was found and corrected.

Block Five: Measurement

- Use, read and write standard units of measure for length, mass, volume and time.
- Convert between larger and smaller units of length, mass, volume and time, using decimal notation to up to three decimal places.
- Convert between miles and kilometres using the approximate conversion of 5 miles $\approx$ 8 kilometres.
- Choose appropriate units of measure for different contexts and explain why they are suitable.
- Solve problems involving the conversion and calculation of measurements, including using decimal notation and more than one unit of measure.
- Find missing measurements by converting between units and using relationships between standard units.
- Find all possible measurements that satisfy given conditions, including problems requiring conversion between different units.
- Identify and correct errors in unit conversions, explaining how the correct conversion can be checked.



Maths Yearly Overview

Year 6



Spring Term

Block One: Fractions (including decimals and percentages)

- Use common factors to simplify fractions to their simplest form.
- Use common multiples to express fractions with different denominators as equivalent fractions with a common denominator.
- Understand that a fraction can represent a division calculation and use this to calculate decimal equivalents of simple fractions.
- Convert simple fractions to decimals and recognise when the decimal is terminating.
- Solve problems involving fractions and decimals where answers need to be rounded to a specified degree of accuracy.
- Find missing numerators or denominators in equivalent fractions and explain how the missing value has been determined.

Block Two: Ratio and proportion

- Solve ratio problems involving the relative sizes of two quantities, using multiplication and division facts to find missing values.
- Use ratio tables and equivalent ratios to identify missing values and solve problems involving proportional relationships.
- Calculate percentages of quantities, including percentages such as 15%, and use percentages to compare quantities.
- Solve problems involving similar shapes where the scale factor is known or needs to be calculated.
- Solve unequal sharing and grouping problems using knowledge of fractions, ratios, multiples and division.
- Find all possible ratios or quantities that satisfy given conditions and present solutions systematically.
- Determine whether statements about ratio, proportion and percentages are always, sometimes or never true, using examples and counterexamples to justify conclusions.

Block Three: Geometry –properties of shape

- Draw 2-D shapes accurately using given dimensions and angles.
- Recognise, describe and build simple 3-D shapes, including constructing and interpreting nets.
- Compare and classify geometric shapes based on their properties and sizes.
- Find unknown angles in triangles, quadrilaterals and regular polygons using known angle facts and properties of shapes.
- Recognise and describe parts of circles, including the radius, diameter and circumference, and understand that the diameter is twice the radius.
- Recognise angles at a point, on a straight line and vertically opposite, and use these facts to find missing angles.
- Describe positions on the full coordinate grid using coordinates in all four quadrants.
- Draw and translate simple shapes on the coordinate plane and describe the translation using appropriate mathematical language.
- Reflect simple shapes in the axes and describe the position of the reflected shape using coordinates.
- Find all possible shapes or sets of angles that satisfy given conditions and explain how all possibilities have been found.
- Identify and correct errors in angle calculations, coordinates or transformations, explaining the reasoning used to find the error.

Block Four: Measurement

- Recognise that shapes with the same area can have different perimeters, and shapes with the same perimeter can have different areas.
- Recognise when formulae can be used to calculate the area or volume of a shape and select an appropriate formula.
- Calculate the area of parallelograms and triangles using appropriate formulae.
- Calculate, estimate and compare the volume of cubes and cuboids using standard cubic units, including cm^3 and m^3 .
- Convert between different cubic units, including mm^3 , cm^3 and m^3 , where appropriate.
- Solve problems involving area, perimeter and volume, including finding missing dimensions and choosing an appropriate method or formula.
- Find all possible dimensions of rectangles, triangles or parallelograms that satisfy given area or perimeter conditions, and present the solutions systematically.
- Investigate shapes with the same area or perimeter and explain how their dimensions can vary.
- Estimate the area or volume of a shape and use calculation to check whether the estimate is reasonable.

Block Five: Algebra

- Use simple formulae to calculate unknown values, substituting given numbers into formulae.
- Generate and describe linear number sequences, identifying the rule used to generate the sequence.
- Express missing-number problems algebraically using letters to represent unknown values.
- Solve simple equations involving one unknown using inverse operations and algebraic reasoning.
- Find pairs of numbers that satisfy an equation with two unknowns and represent the possible solutions systematically.
- Enumerate all possible combinations of two variables that satisfy given conditions, ensuring that no possibilities are missed or repeated.



Maths Yearly Overview

Year 6



Block Six: Statistics

- Interpret and construct pie charts and line graphs, using appropriate scales and labels.
- Use information presented in pie charts and line graphs to solve comparison, sum and difference problems.
- Calculate the mean as an average and explain what the mean tells us about a set of data.
- Find missing values in a data set when the mean is known.
- Solve problems where data must be interpreted, combined or compared across different representations, including pie charts, line graphs and tables.
- Find all possible sets of data that satisfy given conditions, including a specified mean, and present the possibilities systematically.
- Identify misleading or incorrect interpretations of data and explain how the data supports or contradicts a conclusion.

Summer Term

During the summer term, all previous learning will be recapped and applied.

There will be focused learning based on problem solving and enterprise projects to enable children the opportunity to apply their knowledge of the math's curriculum.