



Year Six: An overview of what your child will be taught in Maths

Year 6 Autumn Term

Number and Place Value

- Read, write, order and compare numbers to 10,000,000 and state the value of each digit
- 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

Number: Addition, Subtraction, Multiplication and Division

- Solve addition and subtraction multi-step problems in contexts, deciding which operations to use and why
- Multiply multi-digit numbers up to 4 digits by a 2-digit numbers using a formal long multiplication method
- Divide numbers up to 4 digits by 2-digit numbers using long division method and show remainders as whole numbers or fractions and round them in the context of a problem
- Divide numbers up to 4-digits by 2-digits using a short division method and rounding in the context of a problem
- Perform mental calculation, including with mixed operations and large numbers
- Identify common factors, common multiples and prime numbers
- Use BODMAS to help with the order of operations within a calculation
- Solve problems involving all four operations
- Use estimation to check answers to calculations

Fractions

- Use common factors to simplify fractions
- Use common multiples to represent fractions with the same denominators
- Compare and order fractions, including fractions of more than 1
- Generate and describe linear sequences that include fractions
- Add and subtract fractions with different denominators
- Add and subtract mixed numbers using the concept of equivalents
- Multiply simple pairs of proper fractions writing the answer in its simplest form-e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$
- Divide proper fractions by whole numbers-e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$
- Associate a fraction with division and calculate decimal equivalents. E.g. 1 whole divided by 8= $\frac{1}{8}$ and this expressed as a decimal is 0.375
- Recall and use equivalence between fractions, percentages and decimals in different contexts

Geometry: Position and 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 axes

Year 6 Spring Term

Number: Decimals

- Identify the value of each digit in numbers to three decimal places
- Multiply numbers by 10,100 and 1000 giving answers up to three decimal places
- Multiply 1-digit numbers with up to 2 decimal places by whole numbers
- Use written division methods in cases where the answer has up to two decimal places
- Solve problems where answers need to be rounded to a specified degree of accuracy

Number: Percentages

- Solve problems involving the calculation of percentages-e.g. measures such as 15% of 360 and percentage used as a comparison
- Recall and use equivalences between simple fraction, percentages and decimals, including in different contexts.
- Compare and order fractions whose denominators are multiples of the same number-e.g. $\frac{1}{4}$, $\frac{5}{8}$ and $\frac{8}{12}$
- Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths.
- Recognise mixed numbers and improper fractions and convert between them-e.g. $\frac{8}{6}$ is $1 \frac{2}{6}$ or $2 \frac{2}{3}$ is $\frac{8}{3}$
- Add and subtract fractions with the same denominator and denominators that are multiples of the same number-e.g. $\frac{4}{5} + \frac{3}{5} = \frac{7}{5}$ or $\frac{3}{5} + \frac{4}{10} = \frac{10}{10}$ or 1 whole number
- Multiply proper fractions (numerator is smaller than denominator) and mixed numbers by whole numbers supported by equipment and images
- Read and write decimal numbers as fractions-e.g. 0.71 is $\frac{71}{100}$
- Solve problem involving multiplication and division, including scaling by simple fractions

Number: Algebra

- Use simple formulae
- Generate and describe linear number sequences
- Express missing number problems algebraically-e.g. $5 + a = 7$ so $a = 2$
- Find pairs of numbers that satisfy an equation with two unknowns-e.g. $a + b = 6$, what could a and b stand for?
- Enumerate possibilities of combinations for two variables

Measurement: Converting Units

- Solve problems involving the calculation and conversion of measure, including decimals up to three places.
- Use, read, write and convert between standard units, converting measures of mass, length, volume and time from a smaller unit to a larger unit, and vice versa, using decimal notation up to three decimal places
- Convert between miles and km

Measurement: Perimeter, Area and Volume

- Recognise that shapes with the same areas can have different perimeters and vice versa
- Recognise when a formula can be used to find area and volume-e.g. $l \times w$ for area
- Calculate the area of parallelograms and triangles
- Calculate, estimate and compare volume of cubes and cuboids using standard units of cm^3 and m^3 and then extending to mm^3 and km^3

Number: Ratio

- Solve problems involving the relative size of two quantities where missing values can be found by using multiplication and division facts
- Solve problems involving similar shapes where the scale factor is given or can be found-e.g. if the base of one triangle is 4 and another is 20-this indicates a scale factor of 5 (5 times larger)
- Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples-e.g. share 20 in a 3:2 ratio



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Year 6 Summer Term

Geometry: Properties of Shape

- Draw 2D shapes using given dimensions and angles
- Compare and classify geometric shapes based upon their properties and sizes
- 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

Problem Solving

- Use and apply the skills taught through a variety of problem solving and reasoning activities.

Statistics

- Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the size of the radius
- Interpret and construct pie charts and line graphs and use these to solve problems
- Calculate the 'mean' as an average

Investigations

- Investigations that require the use and application of a broad range of mathematical skills taught throughout Upper Key Stage Two.