

Number – Number and Place Value

Children will learn to:

- * 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
- * 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

Children will learn to:

- * 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 (including decimals and percentages)

Children will learn to:

- * 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 [for example, one quarter \times one half = one eighth]
- * divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$]
- * associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example $3/8$]
- * 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.



Little Paxton

Primary School

Year 6

Mathematics

Geometry – Position and Direction

Children will learn to:

- * 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.

Statistics

Children will learn to:

- * interpret and construct pie charts and line graphs and use these to solve problems
- * calculate and interpret the mean as an average.

Ratio and Proportion

Children will learn to:

- * 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.

Algebra

Children will learn to:

- * 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.

Measurement

Children will learn to:

- * solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- * use, read, write and convert between standard 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
- * 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].

Geometry – Properties of Shapes

Children will learn to:

- * draw 2-D shapes using given dimensions and angles
- * recognise, describe and build simple 3-D shapes, including making nets
- * compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
- * illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
- * recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.