

Number – Number and Place Value

Children will learn to:

- * read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
- * count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
- * interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- * round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- * solve number problems and practical problems that involve all of the above
- * read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

Number – Addition and Subtraction

Children will learn to:

- * add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- * add and subtract numbers mentally with increasingly large numbers
- * use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- * solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Number – Multiplication and Division

Children will learn to:

- * identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- * know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- * establish whether a number up to 100 is prime and recall prime numbers up to 19
- * multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- * multiply and divide numbers mentally drawing upon known facts
- * divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- * multiply and divide whole numbers and those involving decimals by 10, 100 and 1 000
- * recognise and use square numbers and cube numbers, and the notation for squared⁽²⁾ and cubed⁽³⁾
- * solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- * solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- * solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.



Little Paxton

Primary School

Year 5

Mathematics

Geometry – Position and Direction

Children will need to:

- * identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

Statistics

Children will learn to:

- * solve comparison, sum and difference problems using information presented in a line graph
- * complete, read and interpret information in tables, including timetables.

Number – Fractions

Children will learn to:

- * compare and order fractions whose denominators are all multiples of the same number
- * identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- * recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $2/5 + 4/5 = 6/5 = 1 1/5$]
- * add and subtract fractions with the same denominator and denominators that are multiples of the same number
- * multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- * read and write decimal numbers as fractions [for example, $0.71 = 71/100$]
- * recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- * round decimals with two decimal places to the nearest whole number and to one decimal place
- * read, write, order and compare numbers with up to three decimal places
- * solve problems involving number up to three decimal places
- * recognise the per cent symbol [%] and understand that per cent to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
- * solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those fractions with a denominator of a multiple of 10 or 25.

Measurement

Children will learn to:

- * convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- * understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- * measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- * calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes
- * estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
- * solve problems involving converting between units of time
- * use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling

Geometry – Properties of Shapes

Children will learn to:

- * identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- * know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- * draw given angles, and measure them in degrees ($^\circ$)
- * identify:
 - angles at a point and one whole turn (total 360°)
 - angles at a point on a straight line and $1/2$ a turn (total 180°)
- * use the properties of rectangles to deduce related facts and find missing lengths and angles
- * distinguish between regular and irregular polygons based on reasoning about equal sides and angles.