



- Be able to compare, order and represent any number.
- Be able to round any whole number to the nearest 10, 100 or 1000.
- Be able to sequence positive and negative numbers on a number line with differing intervals, and calculate intervals across zero.
- Be able to use place value and number facts to solve problems.



- Be able to compare, order and represent numbers to 1 million.
- Be able to count in 1000s, 10,000s and 100,000s.
- Be able to place both positive and negative numbers on a number line with differing intervals.
- Be able to round numbers to one million.
- Be able to use place value and number facts to solve problems.
- Be able to read Roman numerals to 1000 (M).

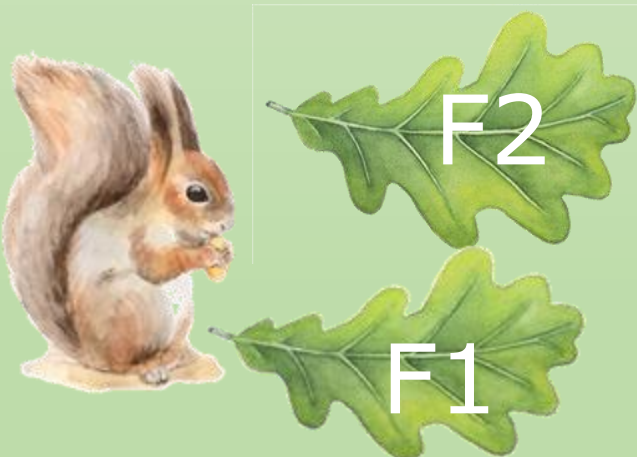
- Be able to count in multiples of 6, 7, 9, 25 and 1000.
- Be able to find 1000 more or less than a given number.
- Be able to count backwards through zero to include negative numbers.
- Be able to use a place value chart for numbers up to 10,000, recognising the place value of each digit.
- Be able to compare and order numbers beyond 1000.
- Be able to use a place value chart for hundreds, tens and ones, recognising the place value of each digit.
- Be able to position missing numbers up to 10,000 on number lines.
- Be able to identify, represent and estimate numbers using different representations.
- Be able to round to the nearest 10, 100 or 1000.
- Be able to use place value and number facts to solve problems.
- Be able to translate and represent roman numerals up to 100 (I to C)

- Be able to read and write numbers to at least 1000 in numerals and words.
- Be able to count from 0 in multiples of 4, 8, 50 and 100.
- Be able to find 10 or 100 more or less than a given number.
- Be able to compare and order numbers up to 1000.
- Be able to use a place value chart for hundreds, tens and ones, recognising the place value of each digit.
- Be able to represent tens and ones with a part-whole model.
- Be able to identify, represent and estimate numbers using objects and pictorial representations.
- Be able to use place value and number facts to solve problems.



- Be able to read and write numbers to at least 100 in numerals and words.
- Be able to count to 100 in twos, threes, fives and tens.
- Be able to compare and order numbers up to 100, using the relevant symbols.
- Be able to use a place value chart for tens and ones, recognising the place value of each digit.
- Be able to represent tens and ones with a part-whole model.
- Be able to identify and represent numbers using objects and pictorial representations including placing numbers to 20 on a number line
- Be able to use place value and number facts to solve problems.

- Be able to count forwards and backwards to 100.
- Be able to read and write numbers to 100.
- Be able to count to 100 in twos, fives and tens.
- Be able to compare numbers to 100 – equal to, more than, less than (fewer), one more than, one less than, most, least.
- Be able to identify and represent numbers using objects and pictorial representations including placing numbers to 20 on a number line.



- Know how to count objects, actions and sounds.
- Know what the term subitise means.
- Know how to subitise.
- Know how to link the number symbol (numeral) with its cardinal number value
- Know how to count beyond ten.
- Compare numbers.
- Understand the 'one more than/one less than' relationship between consecutive numbers.

- Recognise up to 3 objects rapidly, without having to count them individually ('subitising')
- Recite numbers past 5
- Say one number for each item in order: 1,2,3,4,5
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle')
- Show 'finger numbers' up to 5
- Know how to link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5?
- Experiment with their own symbols and marks as well as numerals
- Compare quantities using language: more than, fewer than





- Be able to apply column method confidently to solve addition and subtraction multi-step problems.
- Be able to add and subtract decimal numbers confidently.
- Develop further the ability to round and approximate answers.
- Develop further the use of inverse operations to check answers.
- Use algebraic rules to solve calculations in one-step and two-step equations.

- Be able to add and subtract whole numbers with more than 4 digits, including using formal written (column) methods.
- Be able to use rounding to check answers to calculations.
- Be able to add and subtract numbers mentally with increasingly large numbers.
- Be able to solve addition and subtraction multi-step problems, deciding which operations and methods to use and why.



- Be able to add and subtract 4-digit numbers using a formal written method, where appropriate.
- Be able to estimate the answer to a calculation and use inverse operations to check answers.
- Develop efficient methods for calculations.

- Be able to add and subtract 3-digit numbers using a formal written method.
- Be able to add and subtract ones, tens or hundreds and a 3-digit number using mental methods.
- Be able to estimate the answer to a calculation and use inverse operations to check answers.
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.



- Be able to add and subtract ones and tens.
- Have rapid recall of bonds to 100 (tens and ones).
- Be able to add two 2-digit numbers (crossing and not crossing tens).
- Be able to subtract a 2-digit number from a 2-digit number (crossing and not crossing tens).
- Use a number line confidently to solve addition and subtraction calculations, making use of bond facts to make jumps efficient.
- Use a bar and a part-whole method to solve additions/subtractions
- Be able to add three 1-digit numbers.
- Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
- Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

- Have rapid recall of number bonds to 10 and recognise the patterns for larger number bonds.
- Be able to recognise and use the addition, subtraction and equals symbols.
- Be able to add and subtract one-digit and two-digit numbers to 20, including zero.
- Be able to use the part-whole model with images, objects and integers.
- Be able to use a number line to perform simple additions and subtractions below 20.



- Explore the composition of numbers to 10.
- Know and automatically recall number bonds for numbers 0-10.

- Investigate numbers up to 5 to solve real world mathematical problems.





- Be able to multiply a 4-digit number by a 2-digit number
- Be able to solve long divisions or short divisions with remainders
- Develop appropriate mental skills for solving calculations rapidly, reasoning from known facts
- Be able to find prime numbers up to 100
- Be able to solve division using factors
- Be able to solve calculations when brackets alter the order of the operations
- Be able to estimate to check



- Be able to identify multiples of a number.
- Be able to find all factor pairs of a number, and common factors of two numbers.
- Know that numbers with more than two factors are composite numbers.
- Know that numbers with only two factors are prime numbers.
- Be able to identify whether a number up to 100 is a prime number.
- Recall all prime numbers to 19.
- Be able to multiply 4-digits by 1-digit or 2-digits using a written method, including long multiplication for 2-digits.
- Be able to use a written method to divide a 4-digit number by a 1-digit number.
- Scaling by simple fractions and problems involving simple rates.
- Recognise and use square numbers and cube numbers.
- Know that the product of an integer multiplied by itself twice is a cube number.
- Be able to multiply or divide by 10, 100 or 1,000 include the use of decimal numbers.



- Have rapid recall of all multiplication and division facts up to 12 x 12.
- Be able to multiply by 10 and 100.
- Be able to multiply by 1 and 0.
- Be able to divide by 10 and 100.
- Be able to divide by 1 and itself.
- Use knowledge of commutativity and factor pairs in mental calculations.
- Be able to multiply 3-digits by 1 digit using a written method.



- Have rapid recall of the 3, 4 and 8 times table, including the related division facts.
- Be able to multiply 2-digits by 1 digit mentally and using a written method.
- Be able to use a written method for short division.
- Be able to divide with remainders.
- Use efficient mental methods.
- Be able to choose the correct operation to use for problems in context.



- Have rapid recall of the 2, 5 and 10 times tables, including the related division facts.
- Recognise odd and even numbers.
- Be able to calculate simple mathematical statements for multiplication and division and write them using the multiplication (\times), division (\div) and equals ($=$) signs.
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.
- Be able to use arrays.
- Be able to use repeated addition.
- Be able to use mental methods.
- Be able to solve problems in contexts.



- Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- Explain what they have done.



- Know how to count in multiples of 10.
- Know how to share objects equally, starting with a whole group.



- Join in with counting, emphasising multiples of 5 or 10 following an adult model.
- Know how to share food fairly at snack time.





- Compare and order fractions greater than 1
- Round to specified degrees of accuracy
- Use common factors to simplify fractions
- Use division to calculate decimal fraction equivalents
- Recall and use fraction, decimal, percentage equivalents
- Use equivalent fractions to add and subtract fractions, and mixed numbers
- Multiply pairs of fractions, simplifying the product
- Multiply decimal numbers by whole numbers
- Divide fractions by whole numbers
- Multiply by 10, 100 and 1000, to give a decimal product
- Divide by 10, 100 and 1000, to give a decimal quotient
- Use a written division method where the quotient has up to two decimal places

- Recognise and use thousandths
- Compare and order fractions whose denominators are related multiples
- Read, write, order, compare numbers up to three decimal places
- Round decimals with two decimal places
- Find equivalent fractions including tenths and hundredths
- Read and write decimal numbers as fractions
- Understand percentages
- Add and subtract fractions whose denominators are related multiples
- Convert between mixed numbers and improper fractions
- Multiply mixed numbers and improper fractions by whole numbers
- Use numbers with up to three decimal places
- Find and use a number of specific decimal and fraction equivalents



- Be able to count in hundredths
- Compare decimals up to two decimal places
- Round decimals to the nearest whole number
- Recognise and show families of common equivalent fractions
- Write decimal equivalents of tenths and hundredths
- Write decimal equivalents of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
- Add and subtract fractions with the same denominator
- Divide by 10 and 100, to give a decimal quotient

- Be able to count in halves, quarters, thirds and tenths
- Recognise unit and non-unit fractions
- Find fractions of a discrete set of objects
- Recognise and use fractions as numbers
- Compare and order fractions
- Recognise equivalent fractions with small denominators
- Add and subtract fractions with the same denominator within one whole



- Recognise, find and name $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$
- Write simple fractions of a quantity
- Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$

- Recognise, find and name a half
- Recognise, find and name a quarter



- Recognise half of a shape
- Recognise half of an object (e.g. a cake)
- Know how to complete half a turn

- Understand the word 'whole' (e.g. whole apple)
- Understand the word 'half'





- be able to calculate with metric measures
- be able to compare and understand miles and kilometers
- be able to work with metric and imperial measures for mass, capacity and length
- understand how to solve multi-step problems involving money, length, capacity and mass
- be able to calculate the area of a triangle
- be able to calculate the area of a parallelogram
- be able to calculate the volume of a cuboid



- be able to calculate the area of compound and irregular shapes
- be able to find equivalent measures (mass, height, length and capacity)
- understand the difference between metric and imperial measures and find equivalents
- understand how to solve two-step problems involving money, length, capacity and mass
- be able to calculate the perimeter of rectilinear shapes
- be able to calculate the area of compound shapes
- be able to calculate the area of irregular shapes



- be able to find equivalent lengths (m/cm and mm/cm)
- be able to add and subtract lengths (m, cm, mm)
- be able to measure perimeter on a grid, of a rectangle and of rectilinear shapes
- be able to calculate and compare the area of two shapes
- be able to estimate amounts of money and use the four operations to solve money problems



- be able to add lengths together
- understand what a perimeter is and be able to calculate this for given shapes
- be able to compare and order lengths (m, cm and mm)
- be able to add and subtract amounts of money and give the correct change
- be able to compare and order masses and capacity
- understand that temperature is measured in degrees Celsius and know the boiling and freezing points of water
- be able to solve temperature-related problems, finding the difference between temperatures



- be able to measure (m and cm), comparing lengths and heights
- be able to order objects of differing lengths after accurate measuring
- be able to solve problems involving lengths
- be able to measure and compare objects (g)
- be able to measure and compare volume (ml and l)
- be able to use the four operations to solve problems involving mass, volume, length and height
- be able to make the same amount with different coins
- be able to count money using different coin and note amounts to find an accurate total
- be able to find the difference between two amounts of money to give change
- be able to read temperatures on a thermometer which uses a scale of ones or two intervals



- be able to measure objects with non-standard units
- be able to measure objects and heights to the nearest centimeter
- know how to start measuring at the line indicating 0cm
- be able to compare containers with different capacities and describe—more, less, greater than, less than
- be able to solve word problems involving weight and capacity
- be able to weigh objects with non-standard measures
- be able to recognise all British coins and notes
- be able to count coins in 1s, 2s, 5s and 10s and compare amounts



- compare length, weight and capacity using comparative language



- observe differences relating to size, length, weight and capacity and compare objects in simple terms
- compare quantities using language: more than, fewer than
- begin to describe a sequence of events, real or fictional, using words such as first, then



Mathematics

Measurement



- be able to use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
- be able to solve multi-step problems involving seconds, minutes, hours, days, weeks, months and years
- be able to read more complex timetables and solve problems involving arrival and departures for different scenarios



- be able to convert units of time e.g. days to weeks, months or years and seconds to minutes or hours
- be able to read a timetable and work out arrival and departure times
- be able to complete missing times on a regular timetable
- solve word problems involving seconds, minutes, hours, days, weeks, months and years



- be able to tell the time to the minute – analogue and digital
- be able to tell the time – hours, minutes and seconds
- be able to solve word problems involving years, months, weeks and days



- be able to tell the time to the minute
- be able to use and understand the difference between the 12- and 24-hour clock, including using a.m. and p.m. appropriately
- be able to compare durations of time in hours, minutes and seconds
- Know how many days are in each month of the year
- Know how many days are in a year, including in a leap year
- Know that there are 60 seconds in a minute



- be able to tell the time to five minutes, including quarter past and quarter to the hour, including drawing these on a clock face
- be able to confidently use analogue clocks
- know that there are 60 minutes in one hour
- know that there are 24 hours in one day



- be able to tell the time to the hour and half-hour, including drawing these on a clock face
- be able to use words such as 'first', 'afternoon' and 'evening' to sequence events
- be able to say whether things are 'quicker' or 'slower' and 'earlier' or 'later'
- know the 12 months of the year
- know the order of the four seasons



- say the names of the days of the week in order.
- Use and understand the words 'before', 'after', 'yesterday', 'today' and 'tomorrow'.
- Order and sequence familiar events



- Know that some of the words in days of the week rhymes are days
- Use and understand the words 'before' and 'after'.



Mathematics

Time



Mathematics

- be able to illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
- be able to draw 2-D shapes using given dimensions and angles
- recognise, describe and build simple 3-D shapes, including making nets
- 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
- be able to find the missing coordinate for a shape where only some of the coordinates have been given
- be able to plot and read coordinates in the four quadrants
- be able to use knowledge of shape to solve problems involving shape translations in the four quadrants
- be able to reflect a shape in the x and y axis and in a line given in the four quadrants

- be able to identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- be able to draw given angles, and measure them in degrees
- distinguish between regular and irregular polygons based on reasoning about equal sides and angles
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- Identify: angles at a point and one whole turn (total 360 degrees); angles at a point on a straight line and half a turn (total 180 degrees); other multiples of 90 degrees
- be able to plot shapes in the first quadrant using given coordinates
- be able to translate shapes and give the new coordinates (eg translate this triangle up 2

- be able to identify symmetry and complete a symmetrical shape
- compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- be able to identify acute and obtuse angles and compare and order angles up to two right angles by size
- know that a half-turn is equal to two right angles and makes a straight line
- be able to locate objects using simple coordinates eg, (3,2)

- be able to draw 2-D shapes and make 3-D shapes using modelling materials
- know that a right angle is 90° and identify right angles
- know that angles that are smaller than a right angle are acute angles
- know that angles that are greater than right angles are obtuse angles
- know which lines and surfaces are horizontal, vertical, parallel and perpendicular
- recognise triangular prisms and square based pyramids

- be able to identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
- be able to identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
- be able to compare and sort common 2-D and 3-D shapes and everyday objects
- be able to use clockwise and anti-clockwise when giving and following directions

- be able to recognise and name the common 3-D shapes for cube, cuboid, sphere and cone
- be able to describe turns—quarter turn, half-turn, three quarter-turn, full turn
- describe the position of an object using left and right—the square is to the left of the triangle, etc
- be able to give and follow directions using forwards, backwards, left and right

- be able to name common 2-D shapes including hexagons and pentagons, and I know that rectangles and oblongs are the same shapes
- be able to show an understanding that sides and corners refer to 2D shapes, and I can identify these on common 2D shapes
- be able to notice mistakes in patterns

- be able to point to some of the common 2-D shapes for star, circle and square
- use informal language such as pointy, round or flat
- sort and recognize shapes with the same properties
- be able to recognize when objects or shapes are placed in a repeating pattern

Shape, Position and Direction



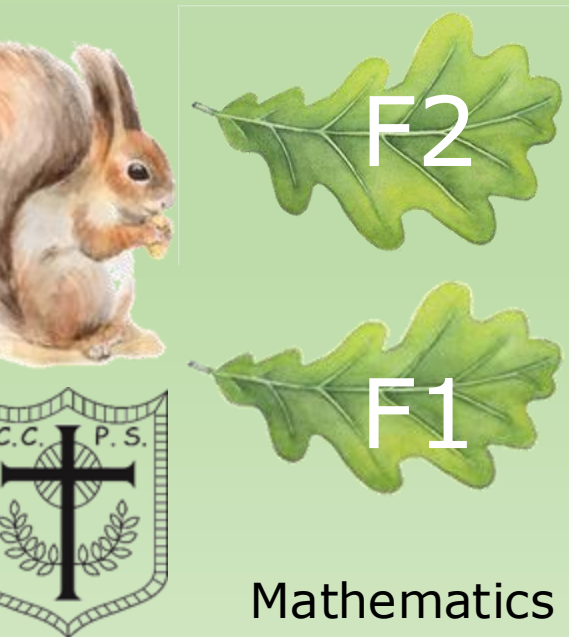
- interpret and construct pie charts and line graphs and use these to solve problems
- be able to construct, read and interpret line graphs, using them to solve problems
- be able to construct, read and interpret pie charts with and without percentages, using them to solve problems
- determine and interpret the mean, median and mode as averages



- complete, read and interpret information in tables, including timetables
- solve comparison, sum and difference problems using information presented in a line graph
- choose an appropriate graphical method dependent on the type of data (e.g. discrete or continuous data), including bar charts and time graphs
- be able to present data accurately on a simple line graph



- begin to choose an appropriate graphical method dependent on the type of data (e.g. discrete or continuous data), including bar charts and time graphs
- solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs
- be able to convert information in one data source (e.g. a bar chart) into another source (e.g. a pictogram or table)
- be able to represent data on a bar chart with an appropriate scale



- interpret and present data using bar charts where the scales have intervals of 2, 5 or 10
- interpret and present data using pictograms
- interpret and present data using tables
- solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts
- solve one-step and two-step questions using information presented in pictograms
- solve one-step and two-step questions using information and tables.
- convert data collected in a tally chart to make a bar chart or pictogram



Mathematics

- be able to interpret and draw simple pictograms
- be able to interpret and draw tally charts
- be able to interpret and draw block diagrams
- be able to interpret and draw simple tables
- ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
- ask and answer questions about totalling and comparing categorical data

- be able to read and make group and class pictograms
- be able to read and make group and bar charts
- know how to collect information for personal topics eg—collecting names of people who had milk, people who like a specific story, people having school dinners, counting numbers for preferences etc

- know how to put their own name against the category that relates to them—eye colour, hair colour, favourite food, favourite story, etc
- know how to count numbers in any given category and say which has the most or the least
- begin to read and understand a simple tally chart that the teacher has modelled

- know how to compare two collections of items that are obviously different using the language 'more' and 'less'
- say when a group is 'equal' or 'the same'

Statistics