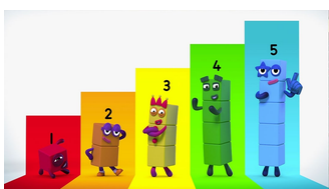


Mathematics Learning Journey

Year R

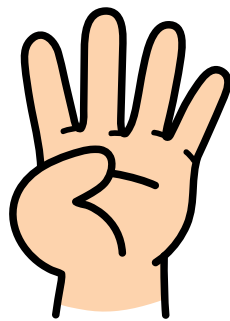
Numbers within 5

Pupils will begin to develop their conceptual subitising skills, to talk about what they can see and spot numbers within 5, They will explore different ways to represent numbers to 5 on their fingers.



Counting to 5

The children will develop their counting skills and knowledge, learning that each number is one more than the previous; learning to be accurate in counting everything around them.



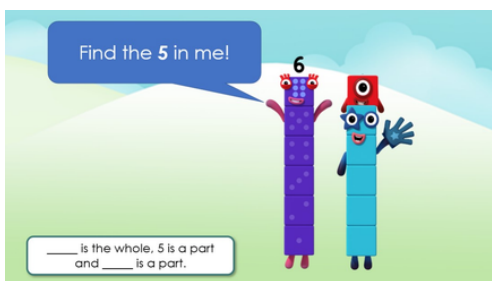
Comparing objects

To compare sets of objects and match the numerals to quantities.



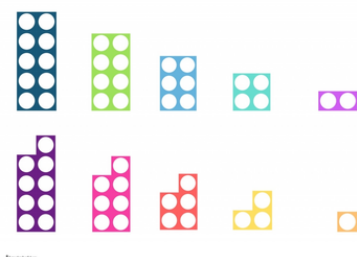
Numbers within and beyond 5

To identify missing 'parts' of the 'whole' which is 5 and explore the structure of numbers beyond 5.



Grouping

To compare groups as equal and unequal with a focus on doubling as two equal groups and exploring the shape of odd and even numbers.



Counting beyond 20

Can the children identify the repeated pattern when counting larger numbers? They will explore different representations of numbers and compare different quantities.

Conceptual Subitising

Can the children spot smaller groups of numbers within a larger number? When can we subitise and when do we need to count?



Number bonds to 5

To recall the **bonds to 5** with speed and accuracy.

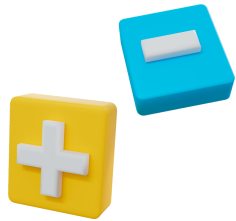
Shape, Space and Measure

To identify common 2D and 3D shapes while learning the key vocabulary for sides, edges, faces, vertices, size, height, weight, time, position and capacity.

Mathematics Learning Journey

Year 1

Addition and Subtraction Within 10



In Year 1, the children will learn to represent number **bonds to 10** and to solve simple addition and subtraction problems with concrete resources and pictorial representations.

Place Value- Numbers to 10

In Year 1 the children will learn to count forwards and backwards from any given number within 10 and to use the language for more than, less than, fewer, and most.

Addition and Subtraction within 20

Pupils will progress to represent and use number **bonds to 20** when adding and subtracting 1 and 2 digit number.



Measurement- Length and Height

To be able to describe, compare and measure different lengths and heights while solving practical problems.

Multiplication and Division

Pupils will learn to count forwards and backwards in **2s, 5s and 10s**.

Geometry- Position and Direction

To understand positional language such as: forwards and backwards, left and right, above and below, top and bottom, whole and half turns.



Measurement- Money

To be able to recognise the value of different coins and notes.

Measurement- Mass and Volume

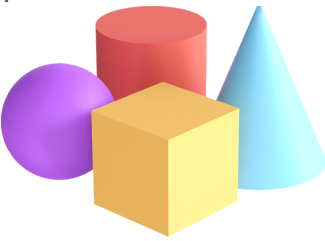
To measure and compare mass and volume using the correct vocabulary and units of measurement.

Place Value- Numbers to 20

Can the pupils identify, represent, compare and locate numbers to 20?

Geometry- Shapes

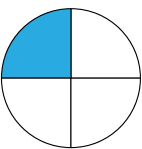
The children will learn to recognise and name common 2D and 3D shapes in **different orientations** and manipulate them to compose different shapes.



Place Value- Numbers to 50

The children will progress to using groups of 10 to count larger numbers to 50.

Fractions



$\frac{1}{4}$

$\frac{1}{2}$



Place Value- Numbers to 100

Can the pupils identify, represent, compare and locate numbers to 100?

Measurement- Time



The children will learn the days of the week and months of the year and will begin to understand, hours, minutes and seconds.



Mathematics Learning Journey

Year 2

Place Value- Numbers to 100

In Year 2, the children will learn to identify, represent and estimate numbers to 100 using different representations, including the number line. They will learn to recognise the place value of each digit in a two-digit number

Addition and Subtraction

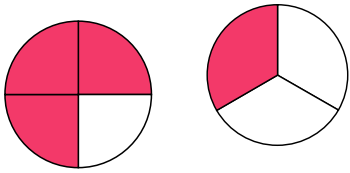
To add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers and adding three one-digit numbers

1. $26 + 33 =$

Tens	Ones

Fractions

Pupils will learn to recognise, find and names $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.



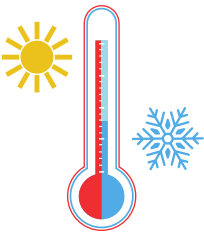
Children will use White Rose Maths, NRich and I See Maths throughout the year to aid their learning.

Measurement: Length and Height

Using the four operations above, the children will use addition, subtraction, multiplication and division to solve problems of length, height, mass, capacity and volume.

Measurement: Mass, Capacity and Temperature

To choose and use standard units of grams, kilograms, millilitres, litres and degrees Celsius to measure and compare.



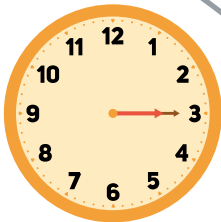
Statistics

To interpret and construct simple pictograms, tally charts, block diagrams and simple tables

Toys in my box	Tally

Geometry

In Year 2, the children will progress to identify and describe the properties of 2D and 3D shapes, including the number of sides and lines of symmetry and the number of edges, vertices and faces on a 3D shape.



Measurement- Time

To tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.

Mathematics Learning Journey

Year 3

Number and Place Value

In Year 3, the children will learn to compare and order numbers up to 1000 and reason about their location.

Addition and Subtraction

Pupils will progress to add and subtract 3- digit numbers both mentally and using a formal written method.

H	T	O
100 100 100	10 10 10 10	1 1 1
	10 10 10	1 1 1
	10 10 10	1 1 1 1 1
	10 10 10	1 1 1

	H	T	O
	3	7	6
+		6	7
	4	4	3
	1	1	

Measurement- Money

Using their addition and subtraction knowledge to 100, pupils will explore pence and pounds in practical contexts including finding change.



Statistics

To construct and interpret pictograms, bar charts and tables, solving one-step and two-step problems.



Multiplication and Division

The children will learn to calculate using the multiplication and division facts for the 10, 5, 2, 4, 8 and 3 multiplication tables. They will progress to use mental strategies a formal written method to multiply a two-digit number by a one-digit number.

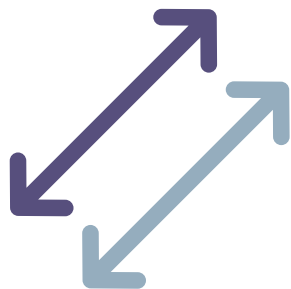
Fractions

In Year 3, the children will progress to understand, compare, add and subtract unit and non-unit fractions.

$$\frac{1}{5} + \frac{2}{5} =$$

Geometry

Can the pupils identify parallel and perpendicular lines?



Measurement- Length, Mass and Volume

Pupils will learn to find equivalent lengths, mass and capacities.

Measurement- Time

To estimate and read time with increasing accuracy to the nearest minute.



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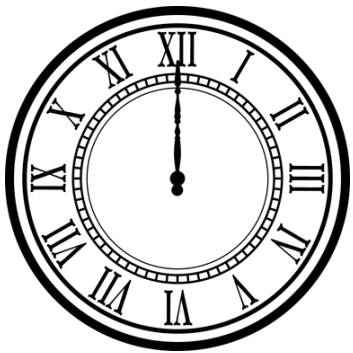


Mathematics Learning Journey

Year 4

Place Value- Numbers beyond 1000

In Year 4, children will begin to explore negative numbers and Roman Numerals.



Addition and Subtraction

Pupils will progress to use a formal written method to add and subtract 4-digit numbers and to solve two-step problems.



Multiplication and Division

The children must be able to rapidly recall the **multiplication and division facts to 12x12** in preparation for **The Multiplication Check in Year 4.**

Measurement- Time

To read, write and convert time between analogue and digital 12- and 24-hour clocks

19:30

Measurement- Area and Perimeter

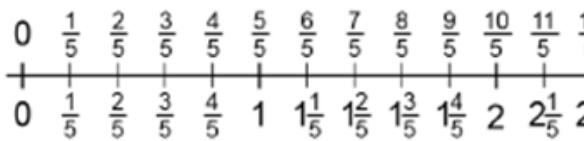
Can they children measure and calculate the perimeter of a rectilinear figure in centimetres and metres?

Measurement- Length, Mass and Volume

Pupils will convert between metres and kilometres.

Fractions

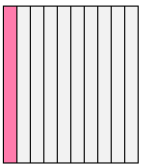
The children will learn about improper fractions and mixed numbers.



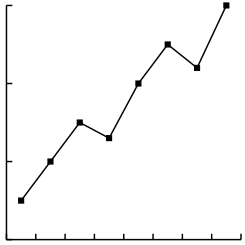
Decimal Numbers

In Year 4, the children will learn to recognise and write decimal equivalents of any number of tenths or hundredths and the decimal equivalent to a half, quarter and three quarters.

0.1



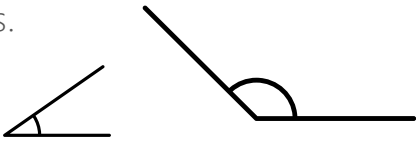
Statistics



To construct and interpret line graphs.

Geometry- Shape, Position and Direction

Pupils will learn to identify different angles, use coordinates and translate shapes.



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Mathematics Learning Journey

Year 5

Place Value- Numbers to
1 000 000

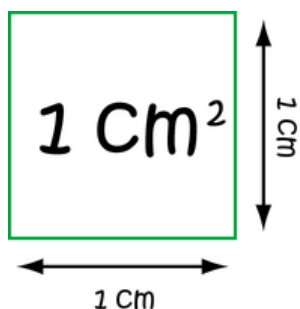
In Year 5, children will solve a variety of problems including negative numbers in context, roman numerals, rounding numbers to the nearest 10, 100 and 1000 and numbers to a million.

Addition and Subtraction

Pupils will progress to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Measurement- Length
and Mass

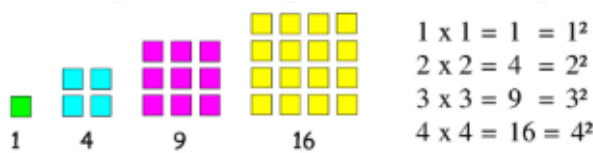
Pupils will progress to calculate the perimeter of composite shapes in cm and m and the area of shapes using their multiplication facts.



Multiplication and
Division

Pupils will learn how to use the formal written method of *Long Multiplication* to multiply by a 2- digit number.

They will know and use the vocabulary of *Prime Numbers*, *Prime Factors*, *Common Factors* and *Multiples*, *Square* and *Cube Numbers*.



Measurement-
Converting Units

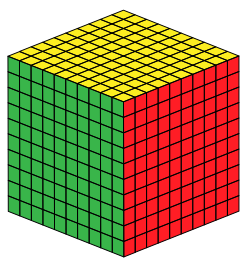
To convert between different units of metric measurement and begin to understand the equivalences between metric and common imperial units.

Measurement- Time

Can the children solve different problems converting units of time?

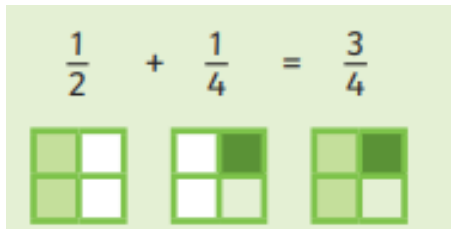
Measurement- Volume

To estimate volume including using 1 cm³ blocks to build cuboids



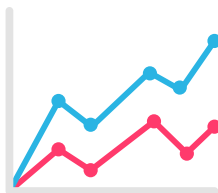
Fractions

The children will progress to calculate and compare fractions with different denominators



Statistics

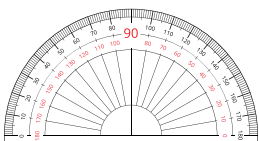
Can the children solve comparison, sum and difference problems using information presented in a line graph?



Decimals and Percentages

The children will begin to identify equivalent fractions, decimals and percentages.

Geometry



To estimate, compare, draw and measure different angles.

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Mathematics Learning Journey

Year 6

Place Value: Numbers to 10,000,000

In Year 6, children will learn to round any whole number to a required degree of accuracy, including in context and use negative numbers in context.

Addition, Subtraction, Multiplication and Division

Pupils will use the formal written methods of long multiplication and long and short division to solve multi-step problems as well as identifying common factors, multiples, prime, square and cube numbers.

432 ÷ 15 becomes

$$\begin{array}{r} 28.8 \\ 15 \overline{) 432.0} \\ \underline{30} \\ 132 \\ \underline{120} \\ 120 \\ \underline{120} \\ 0 \end{array}$$

Answer: 28.8

Problem Solving

To express missing number problems algebraically and find pairs of numbers that satisfy an equation with two unknowns

Fractions

The ability to add, subtract, multiply and divide fractions using both mixed numbers and improper fractions.

$$\frac{1}{3} \div 2 = \frac{1}{6}$$

Ration and Proportion

Pupils 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

2:1

Decimal Numbers

To identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000.

Measurement: Converting Units

To calculate metric and imperial measures.



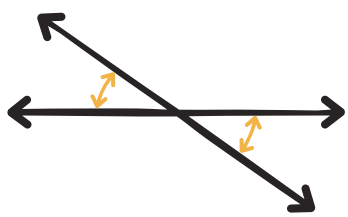
Measurement: Area, Perimeter and Volume.

Can the children use simple formulae to calculate the area or volume of a shape?

Percentages

Pupils will learn to recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. They will learn to solve problems involving the calculation of percentages and the use of percentages for comparison

Geometry



To draw, compose and decompose shapes according to their properties, dimensions, angles and area. To find unknown angles.