



Year Group Pathways

The pathways for the maths curriculum from Year 3 – 6, following the White Rose Scheme.

Year 3 Autumn Pathway

Number

Place value

FREE TRIAL

VIEW

Number

Addition and subtraction

VIEW

Number

Multiplication and division A

VIEW

Place Value



Identify, represent and estimate numbers using different representations

Recognise the place value of each digit in a 3-digit number (hundreds, tens, ones)

Read and write numbers up to 1,000 in numerals and words

Count from zero in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number

Addition & Subtraction



Add and subtract numbers mentally, including:

- a 3-digit number and ones
- a 3-digit number and tens
- a 3-digit number and hundreds

Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction

Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

Estimate the answer to a calculation and use inverse operations to check answers

Multiplication & Division



Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods

Show that multiplication of two numbers can be done in any order (commutative) and division on one number by another cannot (Y2)

Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forward and backward (Y2)

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2)

Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

Year 3 Spring Pathway

Number

Multiplication and division B

[VIEW](#)

Measurement

Length and perimeter

[VIEW](#)

Number

Fractions A

[VIEW](#)

Measurement

Mass and capacity

[VIEW](#)

Multiplication and Division

Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2)

Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods

Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

Measurement

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Measure the perimeter of simple 2-D shapes

Fractions

Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators

Compare and order unit fractions, and fractions with the same denominators

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators

Recognise and show, using diagrams, equivalent fractions with small denominators

Measures-Mass and Capacity

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Year 3 Summer Pathway

Number

Fractions B

[VIEW](#)

Measurement

Money

[VIEW](#)

Measurement

Time

[VIEW](#)

Geometry

Shape

[VIEW](#)

Statistics

[VIEW](#)

Fractions B

Add and subtract fractions with the same denominator within one whole

Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators

Money

Add and subtract amounts of money to give change, using both £ and p in practical contexts

Time

Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks

Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight

Know the number of seconds in a minute and the number of days in each month, year and leap year

Compare durations of events

Shape

Recognise angles as a property of shape or a description of a turn

Identify right angles, recognise that two right angles make a half turn, three make three-quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle

Measure the perimeter of simple 2-D shapes

Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Identify horizontal and vertical lines and pairs of perpendicular and parallel lines

Statistics

Interpret and present data using bar charts, pictograms and tables

Solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables

Year 3 Key Vocabulary

Number and Place value	Addition and Subtraction	Multiplication and division	Measure	Position and direction	Shape	Fractions	Data/Statistics
Numbers to 1000	Column addition, Column subtraction,	Product	Twelve- & twenty-four-hour clock	Greater, less than	Horizontal,	Numerator	Chart
Partition		Multiples of...	Am, pm	Ninety degrees	Vertical	Denominator	Bar chart
Recombine	Inverse	Scale up		Orientation,	Perpendicular lines	Unit fraction, non-unit fraction	Frequency table
Hundred more, less	Equals	Multiply, multiple of	Roman numerals I to XIII	Same orientation	Parallel lines	Compare and order	Carroll diagram
Equal to, same as	Difference between,	Repeated addition,		Different orientation		Tenths	Venn diagram
Odd, even	How many more make...?	Array, row					Axis
Compare	How much more is...?	Share, share equally					Diagram
Value	Subtract, take away, minus	Equal groups of					
	How many fewer is...?	Divide, divided by, left over					
	How much less is...?						

Year 4 Autumn Pathway

Number Place value FREE TRIAL VIEW	Number Addition and subtraction VIEW	Measurement Area VIEW	Number Multiplication and division A VIEW
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Statistics

Read and write numbers up to 1,000 in numerals and words (Y3)

Identify, represent and estimate numbers using different representations

Recognise the place value of each digit in a 3-digit number (hundreds, tens, ones) (Y3)

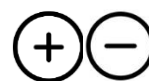
Count in multiples of 6, 7, 9, 25 and 1,000

Recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens and ones)

Find 1,000 more or less than a given number

Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value

Addition & Subtraction



Add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate

Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Estimate and use inverse operations to check answers to a calculation

Area



Find the area of rectilinear shapes by counting squares

Multiplication & Division



Recall multiplication and division facts for multiplication tables up to 12×12

Recognise and use factor pairs and commutativity in mental calculations

Count in multiples of 6, 7, 9, 25 and 1,000

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers

Year 4 Spring Pathway

Number

Multiplication and division B

[VIEW](#)

Measurement

Length and perimeter

[VIEW](#)

Number

Fractions

[VIEW](#)

Number

Decimals A

[VIEW](#)

Multiplication & Division

Recognise and use factor pairs and commutativity in mental calculations

Recall multiplication and division facts for multiplication tables up to 12×12

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 (Y5)

Solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers

Measurement

Convert between different units of measure [for example, kilometre to metre; hour to minute]

Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres

Fractions

Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators (Y3)

Recognise and show, using diagrams, families of common equivalent fractions

Add and subtract fractions with the same denominator

Decimals A

Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10 (Y3)

Recognise and write decimal equivalents of any number of tenths or hundredths

Compare numbers with the same number of decimal places up to 2 decimal places

Find the effect of dividing a 1- or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths

Recognise and show, using diagrams, families of common equivalent fractions

Year 4 Summer Pathway

Number Decimals B VIEW	Measurement Money VIEW	Measurement Time VIEW	Consolidation	Geometry Shape VIEW	Statistics VIEW	Geometry Position and direction VIEW
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Decimals A

Recognise and write decimal equivalents of any number of tenths or hundredths

Solve simple measure and money problems involving fractions and decimals to 2 decimal places

Compare numbers with the same number of decimal places up to 2 decimal places

Round decimals with 1 decimal place to the nearest whole number

Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$

Time

Solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days

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

Money

Estimate, compare and calculate different measures, including money in pounds and pence

Shape

Recognise angles as a property of shape or a description of a turn (Y3)

Identify acute and obtuse angles and compare and order angles up to two right angles by size

Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes

Identify lines of symmetry in 2-D shapes presented in different orientations

Complete a simple symmetric figure with respect to a specific line of symmetry

Statistics

Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs

Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs

Position & Direction

Describe positions on a 2-D grid as coordinates in the first quadrant

Plot specified points and draw sides to complete a given polygon

Describe movements between positions as translations of a given unit to the left/right and up/down

Year 4 Key Vocabulary

Number and Place Value	Multiplication and Division	Measure	Position and Direction	Shape	Fractions	Data/Statistics
Tenths, hundredths, decimal places	Multiplication facts (up to 12 x 12)	Convert	Co-ordinates	Quadrilatera	Equivalent decimals and fractions	Continuous data
Round (to nearest)	Division		Translation	Is Triangles		Line graph
Thousand more, thousand less	facts		Quadrant	Right angle		
Negative integers	Inverse		X axis	Acute and obtuse angles		
Count through zero	Derive		Y axis			
Roman Numerals (I to C)			Perimeter and area			

Year 5 Autumn Pathway

Autumn	Number Place value	Number Addition and subtraction	Number Multiplication and division A	Number Fractions A
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Place Value



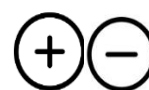
Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals

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

Solve number problems and practical problems involving the above

Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000



Addition & Subtraction

Add and subtract numbers mentally with increasingly large numbers

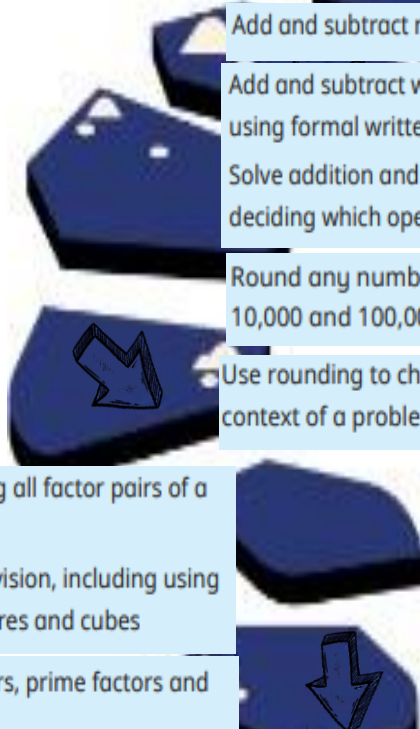
Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction)

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000

Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Multiplication & Division



Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers

Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes

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

Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000

Multiply and divide numbers mentally, drawing upon known facts

Fractions A $\frac{1}{3}$

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 $>$ $<$ as a mixed number

Compare and order fractions whose denominators are all multiples of the same number

Add and subtract fractions with the same denominator, and denominators that are multiples of the same number

Year 5 Spring Pathway

Spring term	Number Multiplication and division B VIEW	Number Fractions B VIEW	Number Decimals and percentages VIEW	Measurement Perimeter and area VIEW	Statistics VIEW

Multiplication & Division



Multiply numbers up to four digits by a 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers

Divide up to four digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context

Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes

Fractions B



Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number (Y4)

Decimals & Percentages



Read, write, order and compare numbers with up to 3 decimal places

Read and write decimal numbers as fractions

Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths

Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25

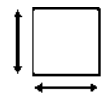
Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

Solve problems involving numbers up to 3 decimal places

Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place

Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per 100", and write percentages as a fraction with denominator 100, and as a decimal fraction

Perimeter & Area



Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres

Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes

Statistics



Solve comparison, sum and difference problems using information presented in a line graph

Complete, read and interpret information in tables, including timetables

Year 5 Summer Pathway

Geometry

Shape

VIEW

Geometry

Position and direction

VIEW

Number

Decimals

VIEW

Number
Negative numbers

VIEW

Measurement

Converting units

VIEW

Measurement
Volume

VIEW

Shape



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 1 whole turn (total 360°)

Use the properties of rectangles to deduce related facts and find missing lengths and angles

Identify: angles at a point and 1 whole turn (total 360°); angles at a point on a straight line and half a turn (total 180°)

Distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Identify 3-D shapes, including cubes and other cuboids, from 2-D representations

Position & Direction



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

Decimals

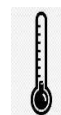
Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

Solve problems involving number up to 3 decimal places

Read, write, order and compare numbers with up to 3 decimal places

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000

Negative Numbers



Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

Converting Units



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

Solve problems involving converting between units of time

Volume



Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity

Estimate volume and capacity [for example, using water]

Year 5 Key Vocabulary

Number and Place value	Multiplication and Division	Measure	Position and Direction	Shape	Fractions
Powers of ten	Efficient written method Factor pairs Composite, prime, prime factor, square numbers, cubed numbers Formal written method	Volume Imperial measures/units Metric measures/units	Reflex angles Dimensions	Regular and irregular polygons	Proper fraction, improper fractions, mixed numbers Percentage Half Quarter Fifths Ratio and proportion

Year 6 Autumn Pathway

Number Place value	Number Addition, subtraction, multiplication and division	Number Fractions A	Number Fractions B	Measurement Converting units
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Place Value



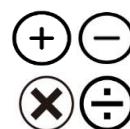
Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit

Solve number and practical problems that involve the above

Round any whole number to a required degree of accuracy

Use negative numbers in context, and calculate intervals across zero

Addition, Subtraction, Multiplication & Division



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

Identify common factors, common multiples and prime numbers

Multiply multi-digit numbers up to four digits by a 2-digit whole number using the formal written method of long multiplication

Perform mental calculations, including with mixed operations and large numbers

Divide numbers up to four digits by a 2-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

Use their knowledge of the order of operations to carry out calculations involving the four operations

Fractions A $\frac{1}{3}$

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

Identify common factors, common multiples and prime numbers

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

Fractions B



Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (Y5)

Multiply simple pairs of proper fractions, writing the answer in its simplest form

Divide proper fractions by whole numbers

Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

Solve problems involving addition, subtraction, multiplication and division

Associate a fraction with division and calculate decimal fraction equivalents

Converting Units



Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 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 3 decimal places

Year 6 Spring Pathway

<p>Number</p> <p>Ratio</p> <p>VIEW</p>	<p>Number</p> <p>Algebra</p> <p>VIEW</p>	<p>Number</p> <p>Decimals</p> <p>VIEW</p>	<p>Number</p> <p>Fractions decimals and percentages</p> <p>VIEW</p>	<p>Measurement</p> <p>Area, perimeter and volume</p> <p>VIEW</p>	<p>Statistics</p> <p>VIEW</p>
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Ratio



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 unequal sharing and grouping using knowledge of fractions and multiples

Solve problems involving similar shapes where the scale factor is known or can be found

Decimals



Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places

Solve problems which require answers to be rounded to specified degrees of accuracy

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

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 2 decimal places

Solve problems involving addition, subtraction, multiplication and division

Statistics



Interpret and construct pie charts and line graphs and use these to solve problems

Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4)

Calculate and interpret the mean as an average

Algebra



Use simple formulae

Generate and describe linear number sequences

Find pairs of numbers that satisfy an equation with two unknowns

Enumerate possibilities of combinations of two variables

Express missing number problems algebraically

Fractions, Decimals & Percentages



Use common factors to simplify fractions; use common multiples to express fractions in the same denomination

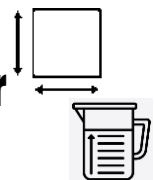
Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction

Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Compare and order fractions, including fractions > 1

Solve problems involving the calculation of percentages and the use of percentages for comparison

Area, Perimeter & Volume



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

Year 6 Summer Pathway

Geometry

Shape

VIEW

Geometry
Position and direction

VIEW

Themed projects, consolidation and problem solving

VIEW

Shape



Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Draw given angles, and measure them in degrees ($^{\circ}$) (Y5)

Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles (Y5)

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

Draw 2-D shapes using given dimensions and angles

Recognise, describe and build simple 3-D shapes, including making nets

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 Key Vocabulary

Number and Place value	Addition, subtraction, multiplication and division	Geometry (position and direction and properties of shape)	Fractions, decimals and percentages	Algebra	Data/Statistics
Numbers to 10 million	Order of Operations Bidmas Common factors Common multiples	Four quadrants Vertically opposite (angles) Circumference Radius Diameter	Degree of accuracy Simplify	Linear number Sequence Substitute Variables Symbol Known values	Mean Pie chart Construct