

EYFS Maths Pathway

Getting to know you

Subitising

- perceptually subitise within 3
- identify sub-groups in larger arrangements
- create their own patterns for numbers within 4
- practise using their fingers to represent quantities which they can subitise
- experience subitising in a range of contexts, including temporal patterns made by sounds.
- subitise within 5, perceptually and conceptually, depending on the arrangements.

Cardinality, ordinality and counting

- relate the counting sequence to cardinality, seeing that the last number spoken gives the number in the entire set
- have a wide range of opportunities to develop their knowledge of the counting sequence, including through rhyme and song
- have a wide range of opportunities to develop 1:1 correspondence, including by coordinating movement and counting
- have opportunities to develop an understanding that anything can be counted, including actions and sounds
- explore a range of strategies which support accurate counting.
- explore the cardinality of 5, linking this to dice patterns and 5 fingers on 1 hand
- begin to count beyond 5
- begin to recognise numerals, relating these to quantities they can subitise and count.

Term One

Pupils will build on previous experiences of number from their home and nursery environments, and further develop their subitising and counting skills. They will explore the composition of numbers within 5. They will begin to compare sets of objects and use the language of comparison.

Other areas

- Positional & directional language (understanding position through words alone, describing routes and locations)
- Pattern (talk about, extend and create patterns, notice and correct errors in patterns, continue, copy and create repeating patterns)
- Shape (talk about and explore 2D and 3D shapes, selecting and combining shapes)

Comparison

- understand that sets can be compared according to a range of attributes, including by their numerosity
- use the language of comparison, including 'more than' and 'fewer than'
- compare sets 'just by looking'
- compare sets using a variety of strategies, including 'just by looking', by subitising and by matching
- compare sets by matching, seeing that when every object in a set can be matched to one in the other set, they contain the same number and are equal amounts.

Composition

- see that all numbers can be made of 1s
- compose their own collections within 4.
- explore the concept of 'wholes' and 'parts' by looking at a range of objects that are composed of parts, some of which can be taken apart and some of which cannot
- explore the composition of numbers within 5.

Cardinality, ordinality and counting

- continue to develop verbal counting to 20 and beyond
- continue to develop object counting skills, using a range of strategies to develop accuracy
- continue to link counting to cardinality, including using their fingers to represent quantities between 5 and 10
- order numbers, linking cardinal and ordinal representations of number.
- continue to consolidate their understanding of cardinality, working with larger numbers within 10
- become more familiar with the counting pattern beyond 20.

Other areas

- Length, weight and capacity (making comparison between objects relating to size, length, weight and capacity)
- Sequencing (describing sequences of events using words such as first, then)

Term Two

Pupils will continue to develop their subitising and counting skills and explore the composition of numbers within and beyond 5. They will begin to identify when two sets are equal or unequal and connect two equal groups to doubles. They will begin to connect quantities to numerals.

Subitising

- increase confidence in subitising by continuing to explore patterns within 5, including structured and random arrangements
- explore a range of patterns made by some numbers greater than 5, including structured patterns in which 5 is a clear part
- experience patterns which show a small group and '1 more'
- continue to match arrangements to finger patterns.
- explore symmetrical patterns, in which each side is a familiar pattern, linking this to 'doubles'.

Composition

- continue to explore the composition of 5 and practise recalling 'missing' or 'hidden' parts for 5
- explore the composition of 6, linking this to familiar patterns, including symmetrical patterns
- begin to see that numbers within 10 can be composed of '5 and a bit'.
- explore the composition of odd and even numbers, looking at the 'shape' of these numbers
- begin to link even numbers to doubles
- begin to explore the composition of numbers within 10.

Comparison

- continue to compare sets using the language of comparison, and play games which involve comparing sets
- continue to compare sets by matching, identifying when sets are equal
- explore ways of making unequal sets equal.
- compare numbers, reasoning about which is more, using both an understanding of the 'howmanyness' of a number, and its position in the number system.

Term Three

Pupils will consolidate their counting skills, counting to larger numbers and developing a wider range of counting strategies. They will secure knowledge of number facts through varied practice.

Other areas

- Shape (selecting, rotating and manipulating shapes, composing and decomposing shapes so that children recognise a shape can have other shapes within it just as numbers can)
- Pattern (revisiting earlier learning and creating more complex patterns)

Composition

- explore the composition of 10.

Comparison

- Order sets of objects, linking this to their understanding of the ordinal number system..

Cardinality, ordinality and counting

- continue to develop verbal counting to 20 and beyond, including counting from different starting numbers
- continue to develop confidence and accuracy in both verbal and object counting. .

Subitising

- continue to practise increasingly familiar subitising arrangements, including those which expose '1 more' or 'doubles' patterns
- use subitising skills to enable them to identify when patterns show the same number but in a different arrangement, or when patterns are similar but have a different number
- subitise structured and unstructured patterns, including those which show numbers within 10, in relation to 5 and 10
- be encouraged to identify when it is appropriate to count and when groups can be subitised.



Year One Maths Pathway

(WRM v3)

Place value (within 10)



Count to **ten**, forwards and backwards, beginning with 0 or 1, or from any given number.
 Count, read and write numbers to **10** in numerals and words.
 Given a number, identify one more or one less.
 Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.

Represent and use number bonds and related subtraction facts **within 10**
 Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
 Add and subtract one digit numbers **to 10**, including zero.
 Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems.

Number: Addition and Subtraction (within 10)



Geometry: Shape

Recognise and name common 2-D shapes, including: (for example, rectangles (including squares), circles and triangles)
 Recognise and name common 3-D shapes, including: (for example, cuboids (including cubes), pyramids and spheres.)

Count to **twenty**, forwards and backwards, beginning with 0 or 1, from any given number.
 Count, read and write numbers to **20** in numerals and words.
 Given a number, identify one more or one less.

Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.

Number: Place value (within 20)



Place value (within 50)



Count to **50** forwards and backwards, beginning with 0 or 1, or from any number.
 Count, read and write numbers to **50** in numerals.
 Given a number, identify one more or one less.
 Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.
 Count in multiples of twos, fives and tens.

Number: Addition and Subtraction (within 20)



Represent and use number bonds and related subtraction facts within 20
 Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.
 Add and subtract one-digit and two-digit numbers to 20, including zero.
 Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9

Measurement : Length and Height



Measure and begin to record lengths and heights.

Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half)

Measurement: Mass and Volume



Measure and begin to record mass/weight, capacity and volume.
 Compare, describe and solve practical problems for mass/weight: (for example, heavy/light, heavier than, lighter than); capacity and volume (for example, full/empty, more than, less than, half, half full, quarter)

Number: Multiplication and Division



Count in multiples of twos, fives and tens.
 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.

Number: Fractions



Recognise, find and name a half as one of two equal parts of an object, shape or quantity.
 Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
 Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half)
 Compare, describe and solve practical problems for: mass/weight (for example, heavy/light, heavier than, lighter than); capacity and volume (for example, full/empty, more than, less than, half, half full, quarter)

Place value (within 100)



Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.
 Count, read and write numbers to 100 in numerals.
 Given a number, identify one more and one less.
 Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than, most, least.

Geometry: Position and Direction



Describe position, direction and movement, including whole, half, quarter and three quarter turns

Measurement: Money



Recognise and know the value of different denominations of coins and notes.

Measurement: Time



Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening).
 Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
 Compare, describe and solve practical problems for time (for example, quicker, slower, earlier, later)
 Measure and begin to record time (hours, minutes, seconds)



Year Two Maths Pathway

(WRM v3)

Place value



Read and write numbers to at least 100 in numerals and in words.
 Recognise the place value of each digit in a two digit number (tens, ones)
 Identify, represent and estimate numbers using different representations including the number line.
 Compare and order numbers from 0 up to 100; use <, > and = signs.
 Use place value and number facts to solve problems.
 Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.

Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.

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; adding three one-digit numbers.

Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.

Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods.

Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Number: Addition and Subtraction



Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.

Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.

Identify 2-D shapes on the surface of 3-D shapes, for example, a circle on a cylinder and a triangle on a pyramid.]

Compare and sort common 2-D and 3-D shapes and everyday objects.

Geometry: Properties of shapes



Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.

Find different combinations of coins that equal the same amounts of money.

Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.

Measurement: Money



Recognise, find, name and write fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.

Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

Number: Multiplication and division



Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers.

Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.

Number: Multiplication and division



Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.

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

Number: Fractions



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.

Know the number of minutes in an hour and the number of hours in a day.

Compare and sequence intervals of time.

Measurement: Time



Measurement: Length and Height



Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g);

temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels

Compare and order lengths, mass, volume/capacity and record the results using >, < and =

Measurement: Mass, capacity and temperature



Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels

Compare and order lengths, mass, volume/capacity and record the results using >, < and =

Statistics



Interpret and construct simple pictograms, tally charts, block diagrams and 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.

Geometry: Position and direction



Use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).

Order and arrange combinations of mathematical objects in patterns and sequences



Problem solving



Year Three Maths Pathway

(WRM v3)

Place value



Identify, represent and estimate numbers using different representations.
Find 10 or 100 more or less than a given number.
Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).
Compare and order numbers up to 1000.
Read and write numbers up to 1000 in numerals and in words.
Solve number problems and practical problems involving these ideas.
Count from 0 in multiples of 4, 8, 50 and 100

Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds.
Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
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.

Number: Addition and Subtraction



Number: Multiplication and Division



Count from 0 in multiples of 4, 8, 50 and 100

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

Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-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 objectives.

Number: Multiplication and division



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

Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-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 objectives.

Number: Fractions

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

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

Measurement: Mass and Capacity



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

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

Solve problems that involve all of the above.

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

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

Add and subtract fractions with the same denominator within one whole (for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)

Solve problems that involve all of the above.

Number: Fractions



Measurement: Length and Perimeter

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

Measure the perimeter of simple 2D shapes.

Measurement: Money



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

Measurement: 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, a.m./p.m., 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 (for example to calculate the time taken by particular events or tasks).

Geometry: Properties of 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.

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

Draw 2-D shapes and make 3-D shapes using modelling materials.

Recognise 3-D shapes in different orientations and describe them.

Statistics



Interpret and present data using bar charts, pictograms and tables.

Solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts and pictograms and tables.



Year Four Maths

Pathway (WRM v3)

Place value



Count in multiples of 6, 7, 9, 25 and 1000.

Find 1000 more or less than a given number.

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

Order and compare numbers beyond 1000

Identify, represent and estimate numbers using different representations.

Round any number to the nearest 10, 100 or 1000

Solve number and practical problems that involve all of the above and with increasingly large positive numbers.

Count backwards through zero to include negative numbers.

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.

Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.

Estimate and use inverse operations to check answers to a calculation.

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

Number: Addition and Subtraction



Find the area of rectilinear shapes by counting squares.



Measurement: Area



Number: Multiplication and division

Measurement: Length and Perimeter

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

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

Number: Multiplication and division



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

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.

Recognise and use factor pairs and commutativity in mental calculations.

Multiply two digit and three digit numbers by a one digit number using formal written layout.

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

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

Count in multiples of 6, 7, 9, 25 and 1000

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.

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

Number: Fractions



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

Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.

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.

Add and subtract fractions with the same denominator.

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.

Number: Decimals



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

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

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

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

Number: Decimals



Compare numbers with the same number of decimal places up to two decimal places.

Round decimals with one decimal place to the nearest whole number.

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

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

Measurement : Money



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

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

Geometry: Properties of shape



Measurement: Time



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

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

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

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.

Geometry: Position and 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 Five Maths Pathway (WRM v3)

Read, write, order and compare numbers to at least 1000000 and determine the value of each digit.

Count forwards or backwards in steps of powers of 10 for any given number up to 1000000.

Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000

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: Place value



Add and subtract numbers mentally with increasingly large numbers.

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)

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: Addition and Subtraction



Number: Multiplication and division



Multiply and divide numbers mentally drawing upon known facts.

Multiply and divide whole numbers by 10, 100 and 1000.

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

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.

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 and divide numbers mentally drawing upon known facts.

Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers.

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.

Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.

Number: Multiplication and division



Number: Fractions



Compare and order fractions whose denominators are 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 $\frac{7}{5} = 1\frac{2}{5} = 1\frac{4}{10}$]

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

Measure and calculate the perimeter of composite rectilinear shapes in cm and m.

Calculate and compare the area of rectangles (including squares), and including using standard units, cm^2 , m^2 estimate the area of irregular shapes.

Number: Fractions



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

Read and write decimal numbers as fractions [for example $0.71 = \frac{71}{100}$]

Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Number: Decimals and percentages



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

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.

Solve problems involving number up to three decimal places.

Recognise the per cent symbol (%) and understand that per cent relates 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 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{5}$, $\frac{3}{5}$ and those fractions with a denominator of a multiple of 10 or 25.

Measurement: Perimeter and area



Statistics



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

Complete, read and interpret information in tables including timetables.

Number: Decimals



Solve problems involving number up to three decimal places.

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.

Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

Geometry: Position and 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.

Geometry: Properties of shape



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

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.

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 $\frac{1}{2}$ a turn (total 180°) other multiples of 90°

Number: Negative Numbers

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

Measuring: Converting units



Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml]

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.

Measurement: Volume



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

Use all four operations to solve problems involving measure.



Year Six Maths Pathway

Place value

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.

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

Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication.

Divide numbers up to 4 digits by a 2-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 2-digit number using the formal written method of short division, 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 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.

(WRM v3)

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

Compare and order fractions, including fractions > 1

Generate and describe linear number sequences (with fractions)

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

Multiply simple pairs of proper fractions, writing the answer in its simplest form (for example $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$)

Divide proper fractions by whole numbers (for example $\frac{1}{2} \div 2 = \frac{1}{4}$)

Associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375) for a simple fraction (for example $\frac{3}{8}$)

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

Number: Addition, Subtraction, multiplication and division

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Number: Fractions

Measurement : Converting units

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 3dp.

Convert between miles and kilometres.

Number: Algebra

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.

Number: 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 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.

Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

Number: Decimals

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

Multiply one-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 which require answers to be rounded to specified degrees of accuracy.

Number: Fractions, Decimals and Percentages

Solve problems involving the calculation of percentages (for example, of measures and such as 15% of 360) and the use of percentages for comparison.

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

Geometry: Properties of shape

Draw 2-D shapes using given dimensions and angles.

Compare and classify geometric shapes based on their properties and sizes and 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.

Statistics

Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.

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

Calculate the mean as an average.

Measurement: Perimeter, Area and Volume

Calculate the area of parallelograms and triangles.

Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm^3 , m^3 and extending to other units (mm^3 , km^3)

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.

Geometry: 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.

Projects, investigation and transition units



Place Value Pathway (WRM)

Year 1

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.

Count to **twenty**, forwards and backwards, beginning with 0 or 1, from any given number.

Count, read and write numbers to **20** in numerals and words.

Given a number, identify one more or one less.

Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.

Count to **50** forwards and backwards, beginning with 0 or 1, or from any number.

Count, read and write numbers to **50** in numerals.

Given a number, identify one more or one less.

Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.

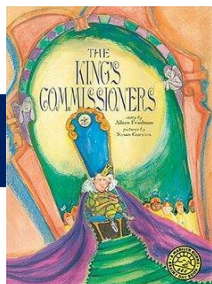
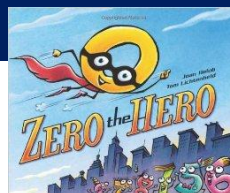
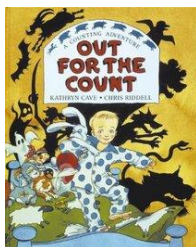
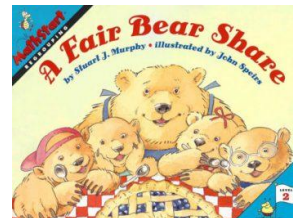
Count in multiples of **twos, fives** and **tens**.

Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.

Count, read and write numbers to 100 in numerals.

Given a number, identify one more and one less.

Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than, most, least.



Read and write numbers to at least 100 in numerals and in words.

Recognise the place value of each digit in a two digit number (tens, ones).

Identify, represent and estimate numbers using different representations including the number line.

Compare and order numbers from 0 up to 100; use <, > and = signs.

Use place value and number facts to solve problems.

Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.

Year 2

Year 3

Identify, represent and estimate numbers using different representations.

Find 10 or 100 more or less than a given number.

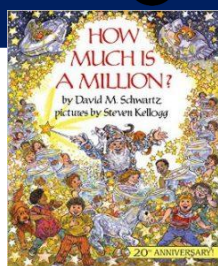
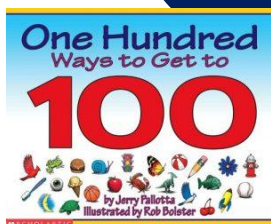
Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).

Compare and order numbers up to 1000

Read and write numbers up to 1000 in numerals and in words.

Solve number problems and practical problems involving these ideas.

Count from 0 in multiples of 4, 8, 50 and 100



Year 4

Count in multiples of 6, 7, 9, 25 and 1000.

Find 1000 more or less than a given number.

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

Order and compare numbers beyond 1000

Identify, represent and estimate numbers using different representations.

Round any number to the nearest 10, 100 or 1000

Solve number and practical problems that involve all of the above and with increasingly large positive numbers.

Count backwards through zero to include negative numbers.

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.

Year 5

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

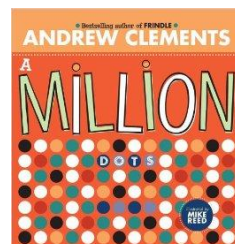
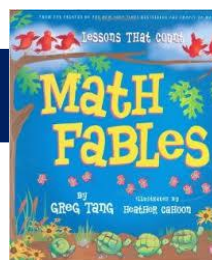
Count forwards or backwards in steps of powers of 10 for any given number up to 10,000,000.

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

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



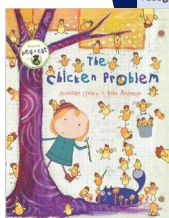
Year 6

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.



Addition and Subtraction Pathway (WRM)

+ -

Year 1

Represent and use number bonds and related subtraction facts **within 10**

Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.

Add and subtract one digit numbers **to 10**, including zero.

Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations and missing number problems.

Represent and use number bonds and related subtraction facts within 20

Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.

Add and subtract one-digit and two-digit numbers to 20, including zero.

Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$

+ -

Year 2

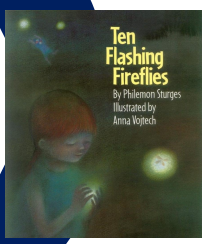
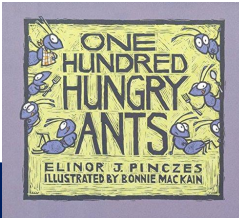
Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.

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; adding three one-digit numbers.

Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.

Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods.

Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.



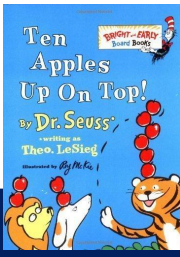
+ -

Year 4

Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.

Estimate and use inverse operations to check answers to a calculation.

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



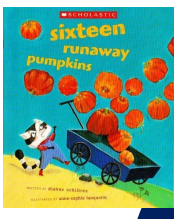
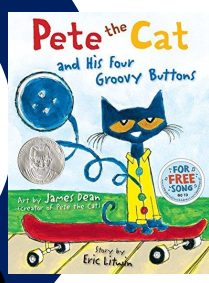
+ -

Year 5

Add and subtract numbers mentally with increasingly large numbers.

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) 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.



+ -

Year 6

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

Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication.

Divide numbers up to 4 digits by a 2-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 2-digit number using the formal written method of short division, interpreting remainders according to the context.

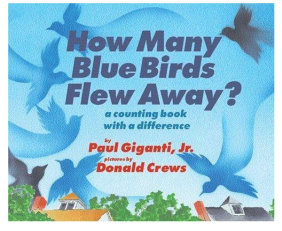
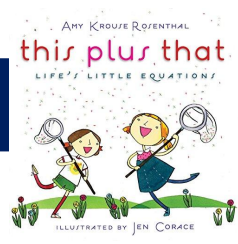
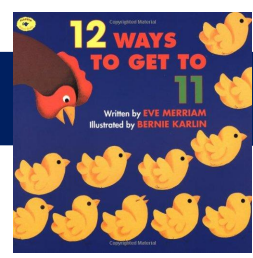
Perform mental calculations, including with mixed operations and large numbers.

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 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.



Multiplication and division Pathway (WRM)

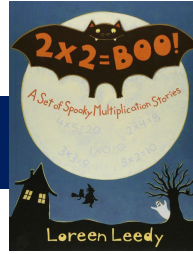
Year 1

Count in multiples of twos, fives and tens.
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.

Year 2

Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers.
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs.



Count from 0 in multiples of 4, 8, 50 and 100
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.

Year 3

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 objectives.

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

Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-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 objectives.

Year 4

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

Count in multiples of 6, 7, 9, 25 and 1000

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.

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

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

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.

Recognise and use factor pairs and commutativity in mental calculations.

Multiply two digit and three digit numbers by a one digit number using formal written layout.

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

Year 5

Multiply and divide numbers mentally drawing upon known facts.

Multiply and divide whole numbers by 10, 100 and 1000.

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

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.

Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.

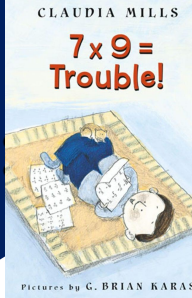
Establish whether a number up to 100 is prime and recall prime numbers up to 19

Multiply and divide numbers mentally drawing upon known facts.

Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers.

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.

Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.



Year 6

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

Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication.

Divide numbers up to 4 digits by a 2-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 2-digit number using the formal written method of short division, interpreting remainders according to the context.

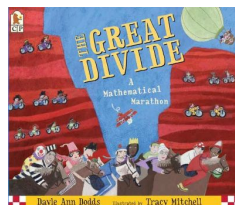
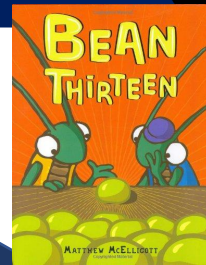
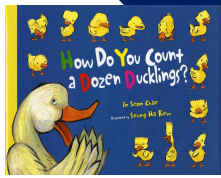
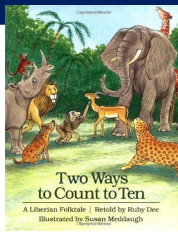
Perform mental calculations, including with mixed operations and large numbers.

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 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.



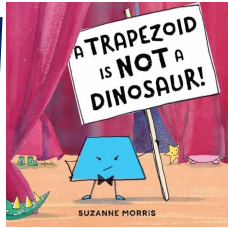
Shape Pathway (WRM)

Year 1




Recognise and name common 2-D shapes, including: (for example, rectangles (including squares), circles and triangles)

Recognise and name common 3-D shapes, including: (for example, cuboids (including cubes), pyramids and spheres.)



Year 2

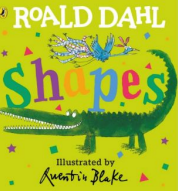
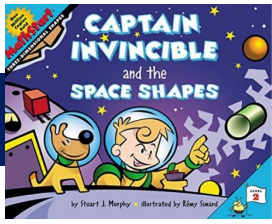


Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.

Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.

Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid.]

Compare and sort common 2-D and 3-D shapes and everyday objects.



Year 3



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.

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

Draw 2-D shapes and make 3-D shapes using modelling materials.

Recognise 3-D shapes in different orientations and describe them.

Year 4



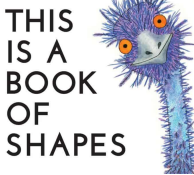
Identify acute and obtuse angles and compare and order angles up to two right angles by size.

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.

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Year 5



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

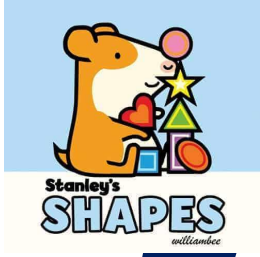
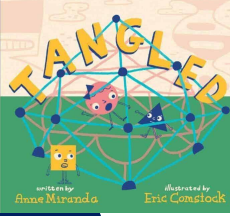
Use the properties of rectangles to deduce related facts and find missing lengths and angles.

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


Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.

Draw given angles, and measure them in degrees (°)

Identify angles at a point and one whole turn (total 360°), angles at a point on a straight line and ½ a turn (total 180°) other multiples of 90°



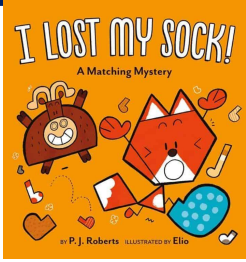
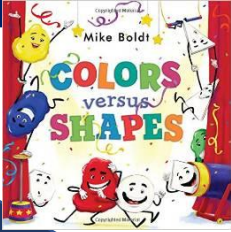
Year 6



Draw 2-D shapes using given dimensions and angles.

Compare and classify geometric shapes based on their properties and sizes and 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.



Fractions Pathway (WRM)

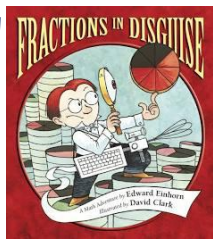
Year 1

Recognise, find and name a half as one of two equal parts of an object, shape or quantity.

Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half)

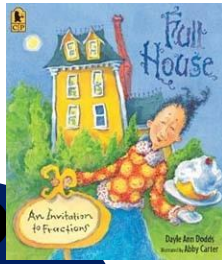
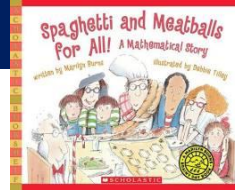
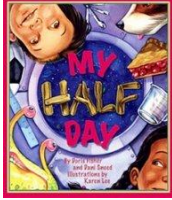
Compare, describe and solve practical problems for: mass/weight (for example, heavy/light, heavier than, lighter than); capacity and volume (for example, full/empty, more than, less than, half, half full, quarter)



Year 2

Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.

Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.



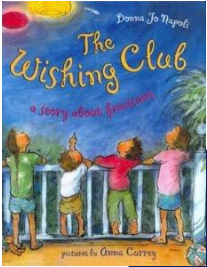
Year 4

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

Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.

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.

Add and subtract fractions with the same denominator.



Year 3

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

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

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

Solve problems that involve all of the above.

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

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

Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]

Solve problems that involve all of the above.

Year 5

Compare and order fractions whose denominators are 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 $\frac{8}{5} = 1\frac{3}{5}$]

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 $0.71 = \frac{71}{100}$]

Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Year 6

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

Compare and order fractions, including fractions > 1

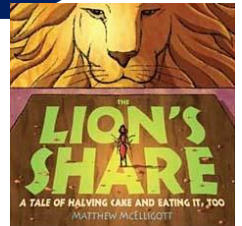
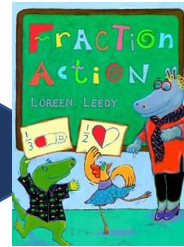
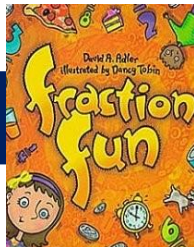
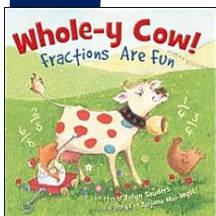
Generate and describe linear number sequences (with fractions)

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 $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]

Divide proper fractions by whole numbers [for example $\frac{1}{3} \div 2 = \frac{1}{6}$]

Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example $\frac{3}{8}$]

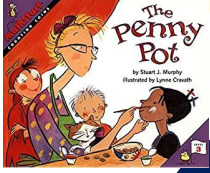
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.



Money Pathway (WRM)

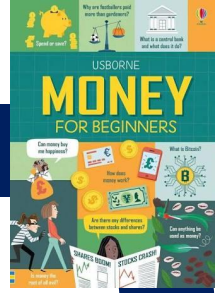
Year 1

Recognise and know the value of different denominations of coins and notes.



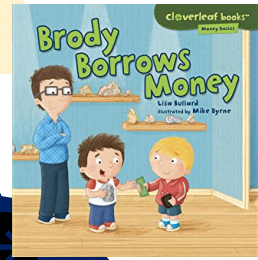
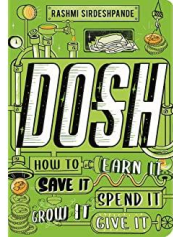
Year 2

Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.
Find different combinations of coins that equal the same amounts of money.
Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.



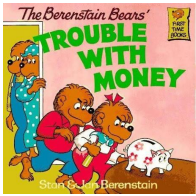
Year 3

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

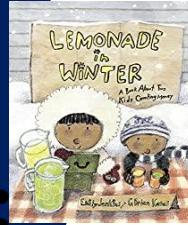


Year 4

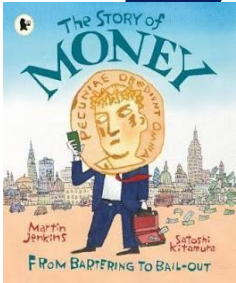
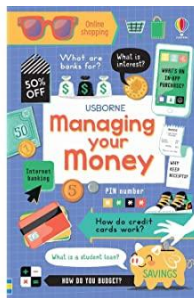
Estimate, compare and calculate different measures, including money in pounds and pence.
Solve simple measure and money problems involving fractions and decimals to two decimal places.



Year 5



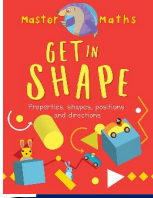
Year 6



Position and direction Pathway (WRM)

Year 1

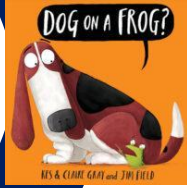
Describe position, direction and movement, including whole, half, quarter and three quarter turns



Year 2

Use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).

Order and arrange combinations of mathematical objects in patterns and sequences



Year 3

Year 4

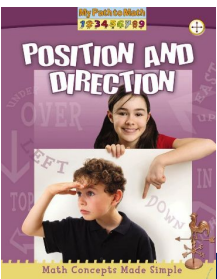
Describe positions on a 2-D grid as coordinates in the first quadrant.

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 5

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.



Year 6

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.



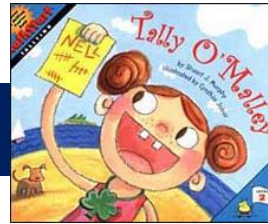
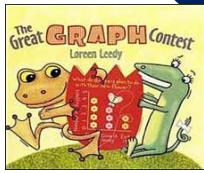
Statistics Pathway (WRM)

Year 1

Interpret and construct simple pictograms, tally charts, block diagrams and 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.

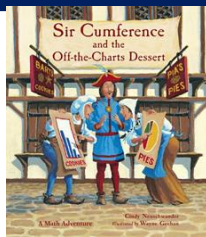


Year 2

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.

Year 4



Year 3

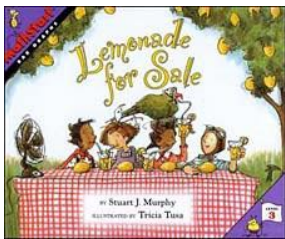
Interpret and present data using bar charts, pictograms and tables.

Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.

Year 5

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

Complete, read and interpret information in tables including timetables.



Year 6

Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.

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

Calculate the mean as an average.

