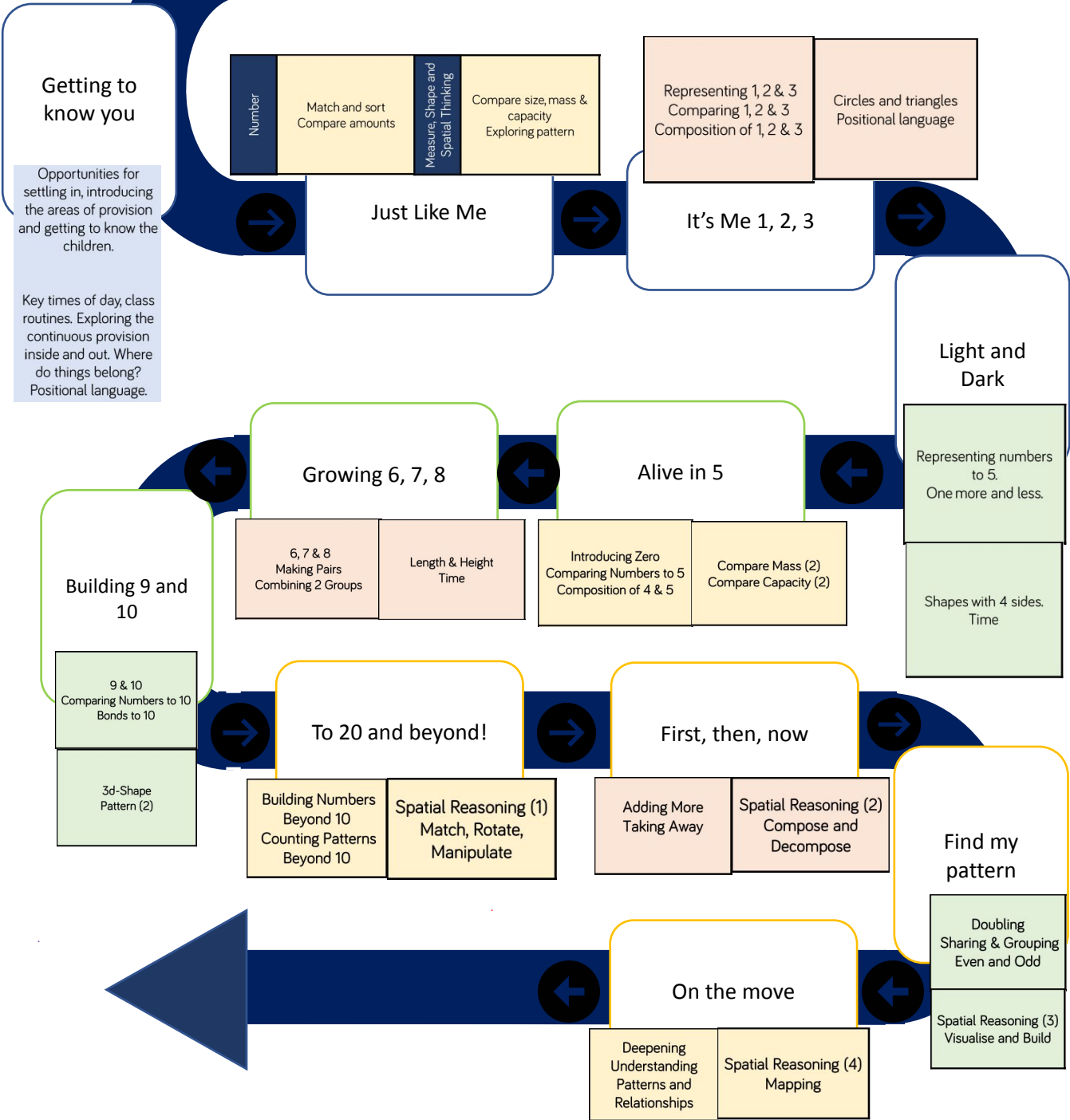


EYFS Maths Pathway (WRM)



New vocabulary

Number and Place Value	Addition and Subtraction	Multiplication and Division	Measure	Geometry (position and direction)	Geometry (Properties of shape)	Fractions	General/problem solving.
Number	Number line	Odd, even	Full, half, empty	Over, under, underneath, above, below, top, bottom, side	Sort	Whole	Listen, join in
One, two, three to twenty and beyond.	Add, more, plus, make, sum, total, altogether	Double, halve	Holds		Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square	Equal	Say, think, imagine, remember
None		Share, share equally	Container	On, in, outside, inside		One half	Start from
Count on/up/to/from/down	Double	Group in pairs	Weigh, weighs, balance	In front, behind	Shape		Look at, point to
Before, after	Half, halve	Equal groups of	Heavy, heavier, heaviest, light, lighter, lightest	Front, back	Flat, curved, straight, round		Put
More, less, many, few, fewer, fewest, smaller, smallest	Equals, is the same (including equals sign)	Divide	Scales	Before, after	Solid		What comes next?
Equal to, the same as	How many more to make...? How many more is,,, then,...? How much more is...?		Time	Beside, next to	Corner		Find, use, make, build
Odd, even			Days of the week: Monday, Tuesday etc.	Middle	Face, side		Tell me, describe, pick out, talk about, explain, show me
Digit	Subtract, take away, minus.		Seasons: Spring, Summer, Autumn, Winter	Up, down, forwards, backwards. Sideways	Make, build, draw		Read, write
Numeral			Days, week, month, year, weekend	Close, far			Tick, draw a line, ring
Compare			Birthday, holiday	Through			Cost
Order			Morning, afternoon, evening, night	Towards, away from			Count, work out
Size			Bedtime,	Side, roll, turn			Number line, number track, number square, number cards
Value							
Between, halfway between							

Year 1 Maths Pathway (WRM)

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.

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.

Number: Place value (within 20)



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: 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 $7 = \square - 9$

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.

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: Weight 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

$\times \div$



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).

Recognise and use language relating to dates, including days of the week, weeks, months and years.

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)

New vocabulary

Maths, Science

Number

Zero, one, two, three to twenty, and beyond

None

Count (on/up to/from/down)

Before, after

More, less, many, few, fewer, least, fewest, smallest, greater, lesser

Equal to, the same as

Odd, even

Pair

Units, ones, tens

Ten more/less

Digit

Numeral

Figure(s)

Compare

(In) order/a different order

Size

Value

Between, halfway between

Above, below

+ **-**

Number bonds, number line

Add, more, plus, make, sum, total, altogether

Inverse

Double, near double

Half, halve

Equals, is the same as (including equals sign)

Difference between

How many more to

$\times \div$

Odd, even

Count in twos, threes, fives

Count in tens (forwards from/backwards from)

How many times?

Lots of, groups of

Once, twice, three times, five times

Multiple of, times, multiply, multiply by

Repeated addition

Array, row, column

Double, halve

Share, share equally

Group in pairs, threes, etc.

Equal groups of

Divide, divided by, left, left over

Time

Full, half full, empty

Holds

Container

Weigh, weights, balances

Heavy, heavier, heaviest, light, lighter, lightest

Scales

Time

Days of the week: Monday, Tuesday, etc.

Seasons: spring, summer, autumn, winter

Day, week, month, year, weekend

Birthday, holiday

Morning, afternoon, evening,

Night, midnight

Bedtime, dinner time, bedtime

Today, yesterday, tomorrow

Before, after

Next, last

How soon, very late

Quick, quicker, quickest, quickly, fast, faster, fastest, slow, slower, slowest, slowly

Old, older, oldest, new, newest, newest

Takes longer, takes less time

Near, almost, half past

Click, switch, hands

How long ago? how long will it be to...? how long will it take to...? how often?

Always, never, often, sometimes, usually

Once, twice

First, second, third, etc.

Position

Over, under, underneath, above, below, top, bottom, side

on, in, outside, inside

around, in front, behind

Front, back

Before, after

Beside, next to, Opposite

Apart

Between, middle, edge, centre

Corner

Direction

Journey

Left, right, up, down, forwards, backwards, sideways

Across

Close, far, near

Along, through

To, from, towards, away from

Movement

Slide, roll, turn, whole turn, half turn

Stretch, bend

Group, sort

Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square

Shape

Flat, curved, straight, round

Hollow, solid

Corner (point, pointed)

Face, side, edge

Make, build, draw

Whole

Equal parts, four equal parts

One half, two halves

A quarter, two quarters

GD

EXS

WTS

Year 2 Maths Pathway (WRM)

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.

Number: Addition and Subtraction

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.

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

Number: Multiplication and division

$\times \div$

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: Multiplication and division

$\times \div$

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.

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: Properties of shapes

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.

Number: Fractions

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 $\frac{1}{2}$.

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 ($^{\circ}$ 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 =

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

Measurement: Time

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.

Problem solving

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 ($^{\circ}$ 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 =

New vocabulary

Numbers to one hundred

Hundreds

Partition, recombine

Hundred more/less

Quarter past/to

m/km, g/kg, ml/l

Temperature (degrees)

Rotation

Clockwise, anticlockwise

Straight line

Ninety degree turn, right angle

Size

Bigger, larger, smaller

Symmetrical, line of symmetry

Fold

Match

Mirror line, reflection

Pattern, repeating pattern

Three quarters, one third, a third

Equivalence, equivalent

Count, tally, sort

Vote

Graph, block graph, pictogram, Represent

Group, set, list, table

Label, title

Most popular, most common, least popular, least common

Predict

Describe the pattern, describe the rule

Find, find all, find different

Investigate

GD

EXS

WTS

Year 3 Maths Pathway (WRM)

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

\times \div

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

\times \div

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.



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.



Measurement: Money

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

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.



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.

Number: Fractions

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, $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$]

Solve problems that involve all of the above.



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].



Measurement: Mass and Capacity

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



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.

New vocabulary



Numbers to one thousand



Column addition and subtraction



Product

Multiples of four, eight, fifty and one hundred

Scale up



Twelve-hour/twenty-four-hour clock

Roman numerals I to XIII



Greater/less than ninety degrees

Orientation (same orientation, different orientation)



Horizontal, vertical, perpendicular and parallel lines



Numerator, denominator

Unit fraction, non-unit fraction

Compare and order

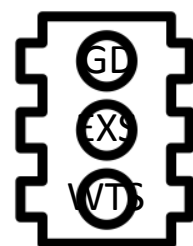
Tenths



Chart, bar chart, frequency table, Carroll diagram, Venn diagram

Axis, axes

Diagram



Year 4 Maths' Pathway (WRM)

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

+

-

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

\times

\div

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.

Measurement: Area

Find the area of rectilinear shapes by counting squares.

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.

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.

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 $\frac{1}{2}$, $\frac{1}{4}$ 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.

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.

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.

Geometry: Properties of shape

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.

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.

New vocabulary



Tenths, hundredths
Decimal (places)
Round (to nearest)
Thousand more/less than
Negative integers
Count through zero
Roman numerals (I to C)

Convert

Multiplication facts (up to 12×12)

Division facts

Inverse

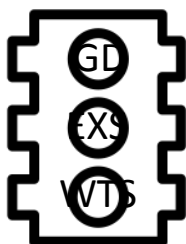
Derive

Coordinates
Translation
Quadrant
x-axis, y-axis
Perimeter and area

Equivalent decimals and fractions



Continuous data
Line graph



Year 5 Maths Pathway (WRM)



Place value



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.

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

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.

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

+ -



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

Complete, read and interpret information in tables including timetables.

Statistics



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.

Number: Multiplication and division



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.

Measurement: Perimeter and area

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



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 $\frac{2}{5} + \frac{4}{5} = 1\frac{2}{5}$).

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.



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 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.



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: 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° .



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.

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.

New vocabulary



Powers of 10



Factor pairs

Composite numbers, prime number, prime factors, square number, cubed number

Formal written method



Volume

Imperial units, metric units



Reflex angle

Dimensions

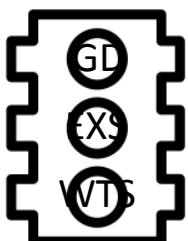


Proper fractions, improper fractions, mixed numbers

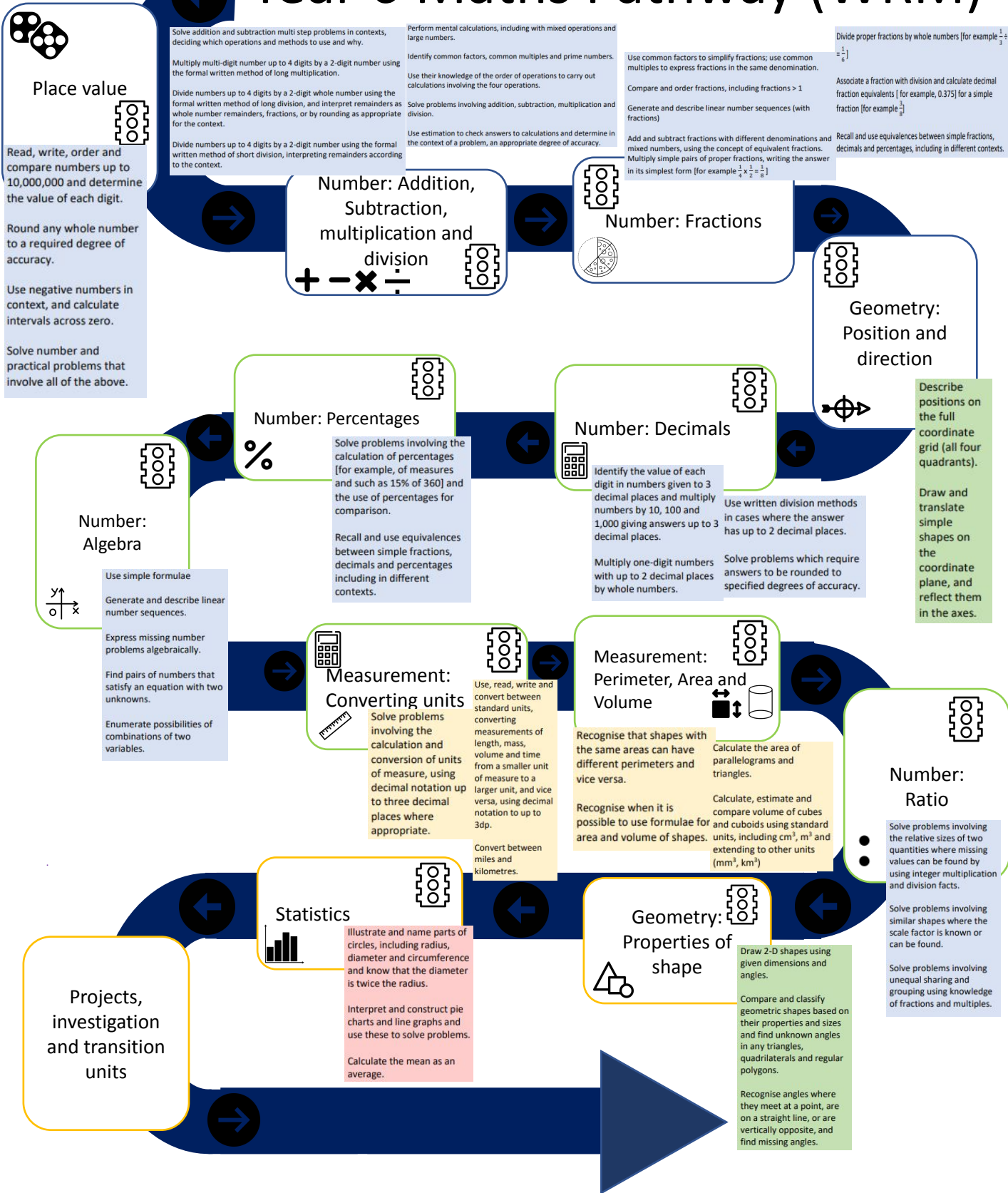
Percentage

Half, quarter, fifth, two fifths, four fifths

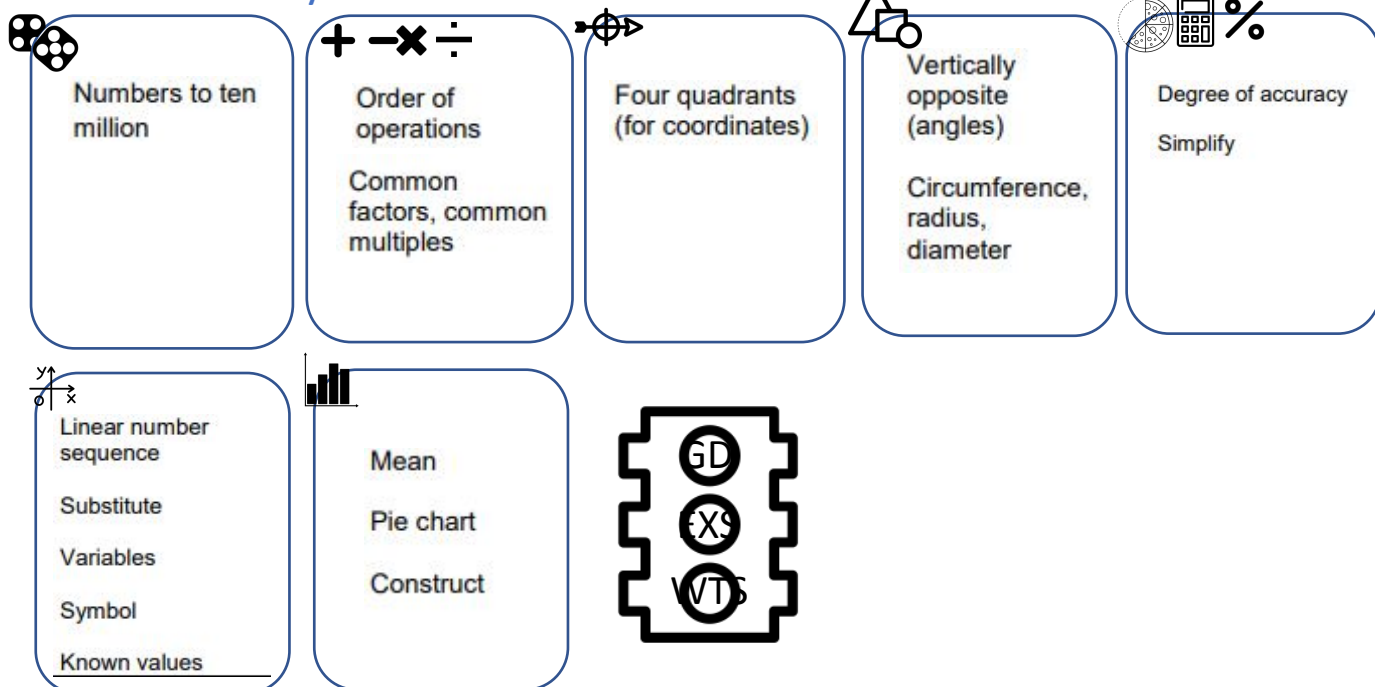
Ratio, proportion



Year 6 Maths Pathway (WRM)



New vocabulary



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.

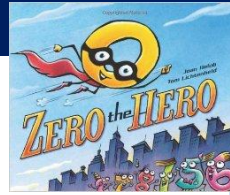
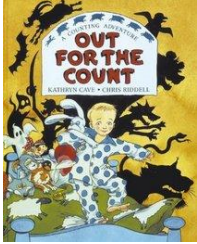
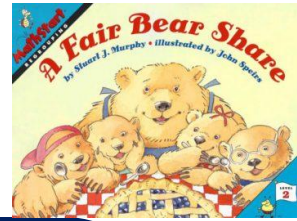
Count in multiples of twos, fives and tens.

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

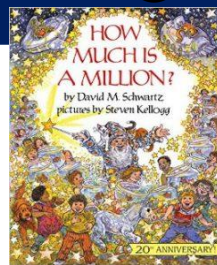
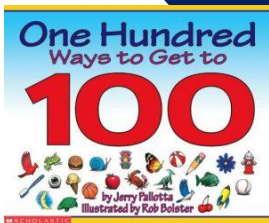
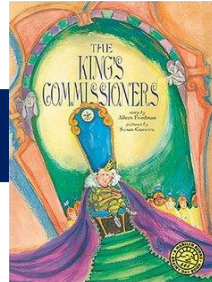
Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).

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 1000000 and determine the value of each digit.

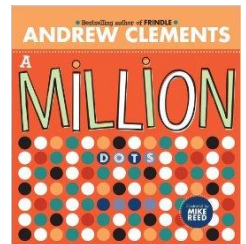
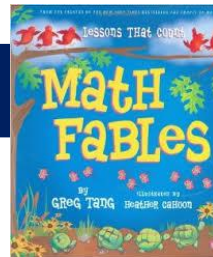
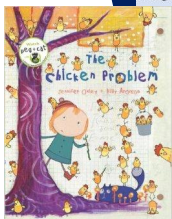
Count forwards or backwards in steps of powers of 10 for any given number up to 1000000.

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

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.



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.

New vocabulary



Number	Pair
Zero, one, two, three to twenty, and beyond	Units, ones, tens
None	Ten more/less
Count (on/up/to/from/down)	Digit
Before, after	Numerical
More, less, many, few, fewer, least, fewest, smallest, greater, lesser	Figure(s)
Equal to, the same as	Compare
Odd, even	(In) order/a different order
	Size
	Value
	Between, halfway between
	Above, below

Numbers to one hundred
Hundreds
Partition, recombine
Hundred more/less

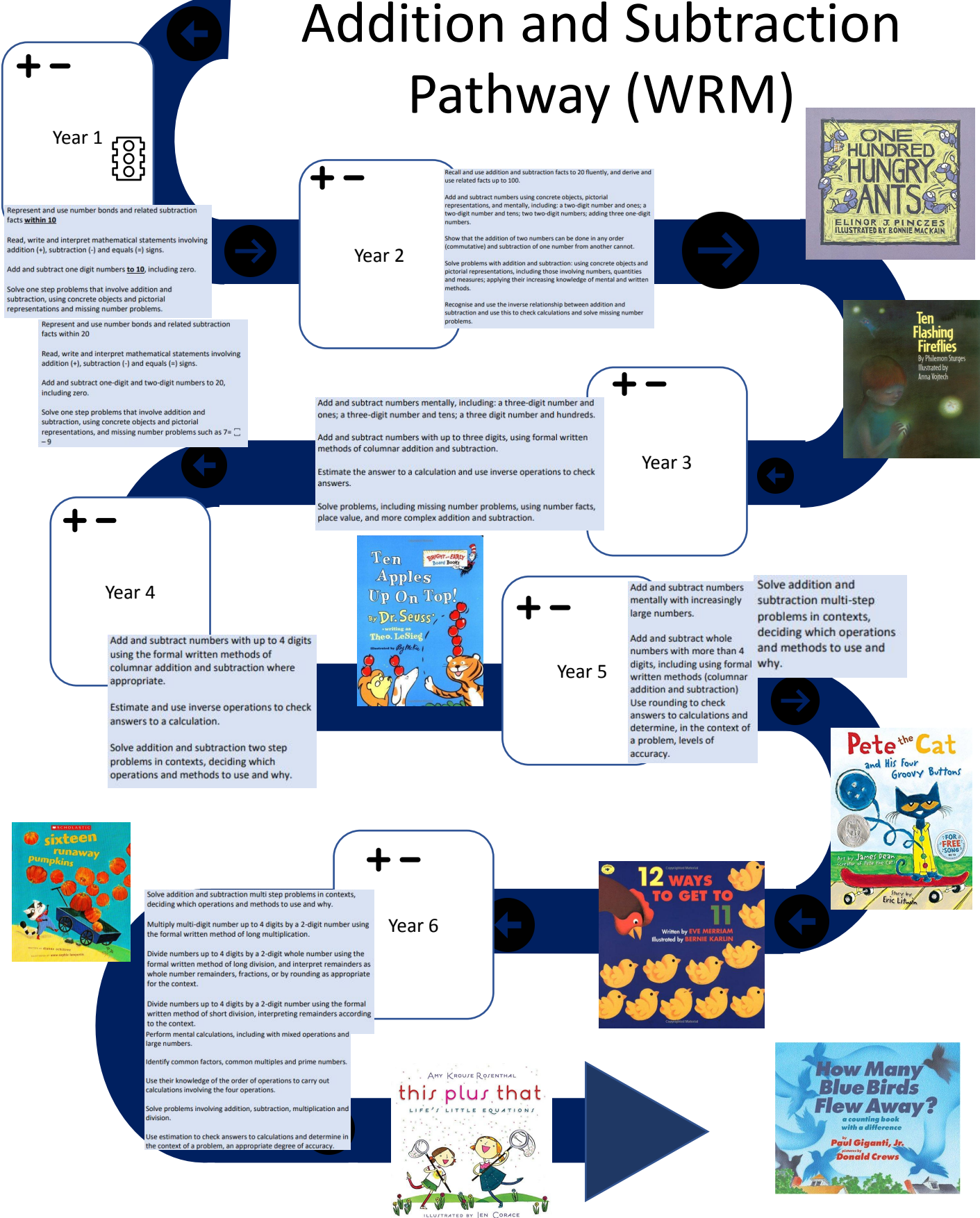
Numbers to one thousand

Tenths, hundredths
Decimal (places)
Round (to nearest)
Thousand more/less than
Negative integers
Count through zero
Roman numerals (I to C)

Powers of 10

Numbers to ten million

Addition and Subtraction Pathway (WRM)



New vocabulary

+ **-**

Number line

Add, more, plus, make, sum, total, altogether

Double

Half, halve

Equals, is the same (including equals sign)

How many more to make...? How many more is... then...? How much more is...?

Subtract, take away, minus.

+ **-**

Number bonds, number line

Add, more, plus, make, sum, total, altogether

Inverse

Double, near double

Half, halve

Equals, is the same as (including equals sign)

Difference between

How many more to

how much more is..?

Subtract, take away, minus

How many fewer is...than..?, how much less is..?

+ **-**

Column addition and subtraction

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.

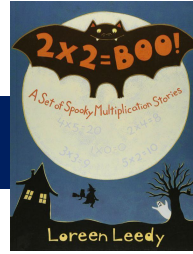
Year 2

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

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.

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



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.

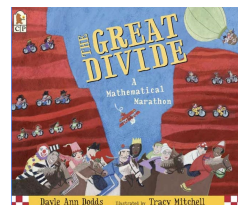
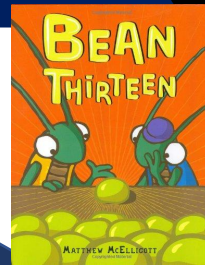
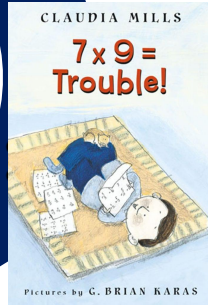
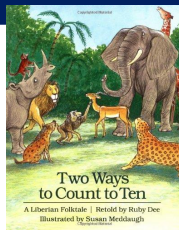
Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.

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

Multiply 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.

New vocabulary

\times \div

Odd, even

Count in twos, threes, fives

Count in tens (forwards from/backwards from)

How many times?

Lots of, groups of

Once, twice, three times, five times

Multiple of, times, multiply, multiply by

Repeated addition

Array, row, column

Double, halve

Share, share equally

Group in pairs, threes, etc.

Equal groups of

Divide, divided by, left, left over

\times \div

Product

Multiples of four, eight, fifty and one hundred

Scale up

\times \div

Multiplication facts (up to 12×12)

Division facts

Inverse

Derive

\times \div

Factor pairs

Composite numbers, prime number, prime factors, square number, cubed number

Formal written method

\times \div

Order of operations

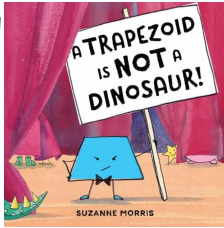
Common factors, common multiples

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.

KENNETH KRAEGL

THIS IS A BOOK OF SHAPES



Year 5

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

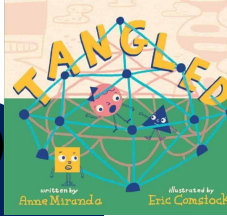
Use the properties of rectangles to deduce related facts and find missing lengths and angles.

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°

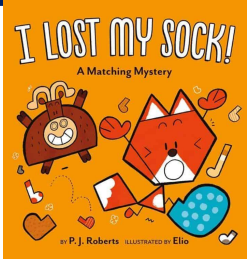
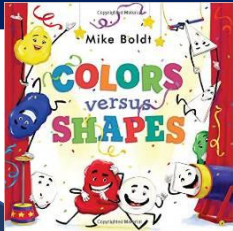


Year 6

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.



New vocabulary

Group, sort

Direction

Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square

Journey
Left, right, up, down, forwards, backwards, sideways

Shape

Across

Flat, curved, straight, round

Close, far, near

Hollow, solid

Along, through

Corner (point, pointed)

To, from, towards, away from

Face, side, edge

Movement

Make, build, draw

Slide, roll, turn, whole turn, half turn

Stretch, bend

Size

Bigger, larger, smaller

Symmetrical, line of symmetry

Fold

Match

Mirror line, reflection

Pattern, repeating pattern

Horizontal, vertical, perpendicular and parallel lines

Vertically opposite (angles)

Circumference, radius, diameter

Fractions Pathway (WRM)

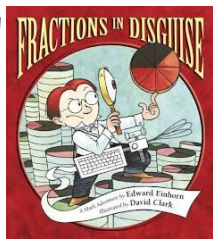
Year 1

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)

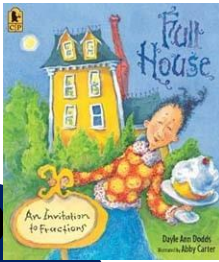
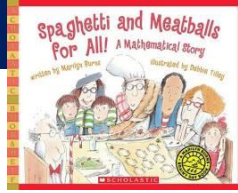
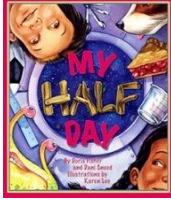
Compare, describe and solve practical problems for: mass/weight (for example, heavy/light, heavier than, lighter than); capacity and volume (for example, full/empty, more than, less than, half, half full, quarter)



Year 2

Recognise, find, name and write fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{4}$ 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 $\frac{1}{2}$.



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 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 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 $\frac{4}{5} + \frac{6}{5} = 1\frac{2}{5}$]

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

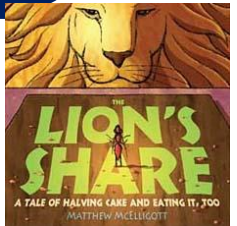
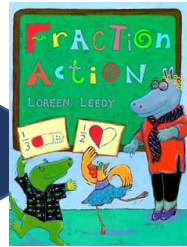
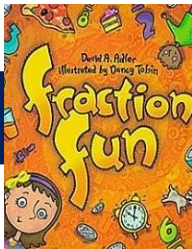
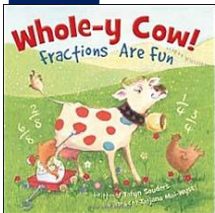
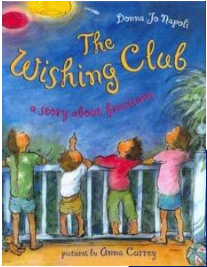
Generate and describe linear number sequences (with fractions)

Add and subtract fractions with different 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 $\frac{2}{4} \times \frac{1}{2} = \frac{1}{4}$]

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.



New vocabulary



Whole

Equal parts, four equal parts

One half, two halves

A quarter, two quarters



Three quarters, one third, a third

Equivalence, equivalent



Numerator, denominator

Unit fraction, non-unit fraction

Compare and order

Tenths



Equivalent decimals and fractions



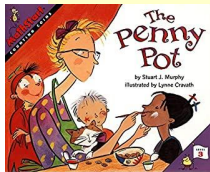
Degree of accuracy

Simplify

Money Pathway (WRM)

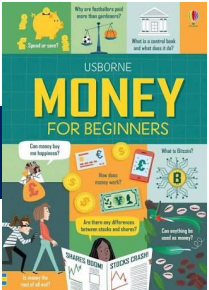
Year 1

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



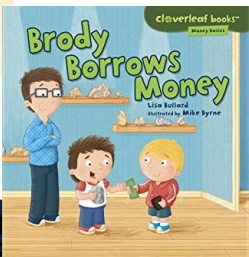
Year 2

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.



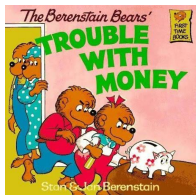
Year 3

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

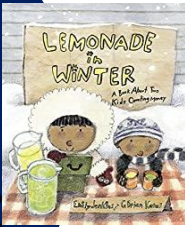


Year 4

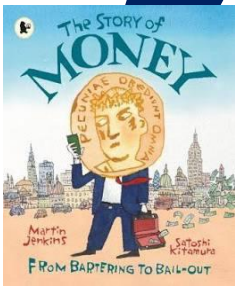
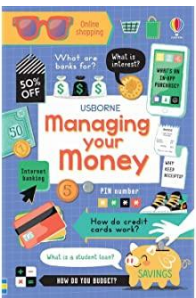
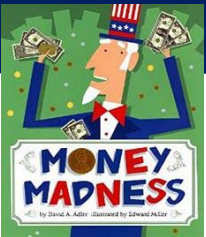
Estimate, compare and calculate different measures, including money in pounds and pence.
Solve simple measure and money problems involving fractions and decimals to two decimal places.



Year 5



Year 6

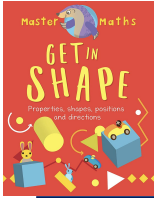


Position and direction

Pathway (WRM)

Year 1

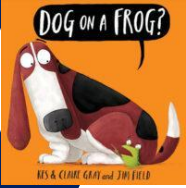
Describe position, direction and movement, including whole, half, quarter and three quarter turns



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



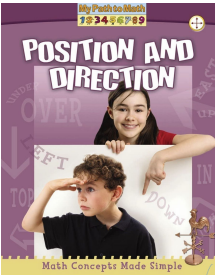
Year 3

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.

New vocabulary



Position

Over, under, underneath, above, below, top, bottom, side

on, in, outside, inside

around, in front, behind

Front, back

Before, after

Beside, next to, Opposite

Apart

Between, middle, edge, centre

Corner

Direction

Journey

Left, right, up, down, forwards, backwards, sideways

Across

Close, far, near

Along, through

To, from, towards, away from

Movement

Slide, roll, turn, whole turn, half turn

Stretch, bend



Rotation

Clockwise, anticlockwise

Straight line

Ninety degree turn, right angle



Greater/less than ninety degrees

Orientation (same orientation, different orientation)



Coordinates

Translation

Quadrant

x-axis, y-axis

Perimeter and area



Reflex angle

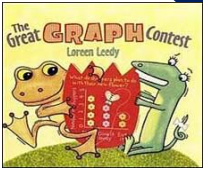
Dimensions



Four quadrants (for coordinates)

Statistics Pathway (WRM)

Year 1

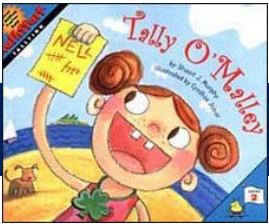


Year 2

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.

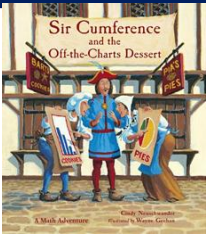
Ask and answer questions about totalling and comparing categorical data.



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

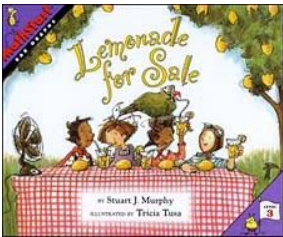
Interpret and present data using bar charts, pictograms and tables.

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.

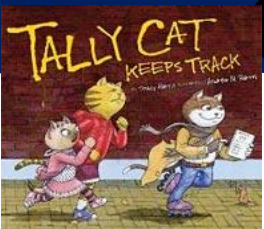


Year 6

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.



New vocabulary



Count, tally, sort
Vote
Graph, block graph, pictogram,
Represent
Group, set, list, table
Label, title
Most popular, most common, least popular, least common



Chart, bar chart, frequency table, Carroll diagram, Venn diagram
Axis, axes
Diagram



Continuous data
Line graph



Mean
Pie chart
Construct