



	Autumn Term	Spring Term	Summer Term
<b>Year 1</b>	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</li> <li>Count read and write numbers to 100 in numerals</li> <li>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 and least.</li> <li>Identify one more and one less than a given number.</li> </ul> <p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>Read, write and interpret mathematical statements involving addition, subtraction and equals signs.</li> <li>Represent and use number bonds and related subtraction facts within 20.</li> <li>Add and subtract one-digit and two-digit numbers to 20, including 0.</li> <li>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations.</li> </ul> <p><b>Properties of shape</b></p> <ul style="list-style-type: none"> <li>Recognise and name common 2-D shapes, for example, rectangles (including squares), circles and triangles</li> <li>Recognise and name common 3-D shapes, for example, cuboids (including cubes), pyramids and spheres.</li> </ul>	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</li> <li>Count read and write numbers to 100 in numerals</li> <li>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 and least.</li> <li>Identify one more and one less than a given number.</li> </ul> <p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>Read, write and interpret mathematical statements involving addition, subtraction and equals signs.</li> <li>Add and subtract one-digit and two-digit numbers to 20, including zero</li> <li>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = ? - 9</math></li> </ul> <p><b>Measurement (time)</b></p> <ul style="list-style-type: none"> <li>Measure and begin to record time (hours, minutes, seconds)</li> <li>Compare, describe and solve practical problems for time (quicker, slower, earlier and later)</li> <li>Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</li> </ul>	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens</li> <li>Read and write numbers from 1 to 20 in numerals and words.</li> </ul> <p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</li> <li>Represent and use number bonds and related subtraction facts within 20</li> <li>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = ? - 9</math></li> </ul> <p><b>Measurement (money)</b></p> <ul style="list-style-type: none"> <li>Recognise and know the value of different denominations of coins and notes</li> </ul> <p><b>Multiplication and division</b></p> <ul style="list-style-type: none"> <li>Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</li> </ul> <p><b>Fractions</b></p> <ul style="list-style-type: none"> <li>Recognise, find and name a half as one of two equal parts of an object, shape or quantity</li> <li>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity</li> </ul>

		<ul style="list-style-type: none"> <li>Recognise and use language relating to dates, including days of the week, weeks, months and years</li> <li>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</li> </ul> <p><b>Multiplication and division</b></p> <ul style="list-style-type: none"> <li>Solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</li> </ul> <p><b>Measurement (length/height)</b></p> <ul style="list-style-type: none"> <li>Compare, describe and solve practical problems for length/height (for example, long/short, longer/shorter, tall/short, double/half)</li> <li>Measure and begin to record mass/weight</li> </ul> <p><b>Measurement (mass/weight)</b></p> <ul style="list-style-type: none"> <li>Compare, describe and solve practical problems for mass/weight [for example, heavy/light, heavier than, lighter than]</li> <li>Measure and begin to record mass/weight</li> </ul> <p><b>Position and Direction</b></p> <ul style="list-style-type: none"> <li>describe position, direction and movement, including whole, half, quarter and three-quarter turns.</li> </ul>	<p><b>Measurement (capacity and volume)</b></p> <ul style="list-style-type: none"> <li>Compare, describe and solve practical problems for capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]</li> <li>Measure and begin to record capacity and volume</li> </ul>
Year 2	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>Count in steps of 2 and 5 from 0, and in tens from any number, forward and backward</li> <li>Recognise the place value of each digit in a two-digit number (tens, ones)</li> </ul>	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</li> <li>Identify, represent and estimate numbers using different representations, including the number line</li> </ul>	<p><b>Measurement (money)</b></p> <ul style="list-style-type: none"> <li>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</li> <li>Find different combinations of coins that equal the same amounts of money</li> </ul>

- Identify, represent and estimate numbers using different representations, including the number line
- Compare and order numbers from 0 up to 100; use  $<$ ,  $>$  and  $=$  signs
- Read and write numbers to at least 100 in numerals and in words (all year practise)
- Use place value and number facts to solve problems.

#### 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
- Show that 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

#### Properties of 2D shapes

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

#### Measurement (length and height)

- Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm), using rulers

- Compare and order numbers from 0 up to 100; use  $<$ ,  $>$  and  $=$  signs
- Read and write numbers to at least 100 in numerals and in words
- Use place value and number facts to solve problems.

#### Addition and subtraction

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

#### Properties of 3D shapes

- 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.

#### Measurement (time)

- Compare and sequence intervals of time

- Solve simple problems in a practical context involving addition and subtraction of money of the same unit.

#### Measurement (mass)

- Choose and use appropriate standard units to estimate and measure mass (kg/g) to the nearest appropriate unit, using scales.
- Compare and order mass and record the results using  $>$ ,  $<$  and  $=$
- Read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are given

#### Multiplication and division (including fractions) consolidation

- Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
- \*\*Begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.

#### Temperature

- Choose and use appropriate standard units to estimate and measure temperature ( $^{\circ}\text{C}$ ); the nearest appropriate unit, using thermometers and measuring vessels

#### Measurement (time)

- Compare and sequence intervals of 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

- Compare and order lengths and record the results using >, < and =
- Read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are given

- Tell and write the time 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

### Multiplication and division

- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
- \*\*Begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.

### Fractions

- 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  $\frac{1}{2}$ .

### Properties of shapes

- Identify and describe the properties of 2-D shapes, including the number of sides and line of 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]

### Position and direction

- Order and arrange combinations of mathematical objects in patterns and sequences
- 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).

### Measurement (volume and capacity)

- Choose and use appropriate standard units to estimate and measure capacity (litres/ml) to the nearest appropriate unit, using measuring vessels
- Compare and order volume/capacity and record the results using >, < and =
- Read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are given

### Statistics

- Interpret and construct simple pictograms, tally charts and simple tables

			<ul style="list-style-type: none"> <li>• Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</li> <li>• Ask and answer questions about totalling and comparing categorical data.</li> </ul>
<p><b>Year 3</b></p>	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>• Identify, represent and estimate numbers using different representations</li> <li>• Find 10 or 100 more or less than a given number</li> <li>• Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</li> <li>• Compare and order numbers up to 1000</li> <li>• Read and write numbers up to 1000 in numerals and in words.</li> <li>• Solve number problems and practical problems</li> </ul> <p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>• Practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100. *(Non-statutory)</li> <li>• Add and subtract numbers mentally, including: <ul style="list-style-type: none"> <li>○ a three-digit number and ones</li> <li>○ a three-digit number and tens</li> <li>○ a three-digit number and hundreds</li> </ul> </li> <li>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</li> <li>• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> </ul> <p><b>Multiplication and division</b></p> <ul style="list-style-type: none"> <li>• Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</li> <li>• Solve problems, including missing number problems, involving multiplication and</li> </ul>	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>• Count from 0 in multiples of 4, 8, 50 and 100</li> <li>• Find 10 or 100 more or less than a given number</li> <li>• Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</li> <li>• Compare and order numbers up to 1000.</li> <li>• Read and write numbers up to 1000 in numerals and in words.</li> <li>• Solve number problems and practical problems</li> </ul> <p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</li> <li>• Estimate the answer to a calculation and use inverse operations to check answers</li> <li>• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> </ul> <p><b>Measurement: money</b></p> <ul style="list-style-type: none"> <li>• Add and subtract amounts of money to give change, using both £ and p in practical contexts</li> </ul> <p><b>Multiplication and division</b></p> <ul style="list-style-type: none"> <li>• Use mental and formal written methods to solve multiplication number sentences</li> <li>• Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-</li> </ul>	<p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</li> <li>• Estimate the answer to a calculation and use inverse operations to check answers</li> <li>• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> <li>• Solve problems that involve all of the above.</li> </ul> <p><b>Multiplication and division</b></p> <ul style="list-style-type: none"> <li>• Use mental and formal written methods to solve multiplication number sentences</li> <li>• Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</li> <li>• Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects</li> </ul> <p><b>Fractions</b></p> <ul style="list-style-type: none"> <li>• Recognise and show, using diagrams, equivalent fractions with small denominators</li> </ul>

- division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects
- Write and calculate number statements for multiplication and division using the times tables that they know

### Fractions (including decimals)

- Recognise and use fractions as numbers: unit and non-unit fractions with small denominators
- 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 of 10

### Measurement: length

- Measure, compare, add and subtract lengths (m/cm/mm)

### 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; 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]

digit numbers, using mental and progressing to formal written methods.

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

### Fractions (including decimals)

- Recognise and use fractions as numbers: unit and non-unit fractions with small denominators.
- Compare and order unit fractions as numbers and fractions with the same denominator
- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- Add and subtract fractions with the same denominator within one whole e.g.  $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$
- 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 of 10
- Solve problems that involve all of the above.

### Measurements: mass and capacity

- Measure, compare, add and subtract: mass (kg/g)

### Properties of shape

- Recognise angles as a property of shape or a description of a turn
- Identify right angles, recognise that 2 right angles make a half-turn, 3 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

- Add and subtract fractions with the same denominator within one whole e.g.  $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$
- Compare and order unit fractions and fractions with the same denominator
- Solve problems that involve all of the above

### Measurement: time

- Know the number of seconds in a minute and the number of days in each month, year and leap year
- Record and compare time in terms of seconds, minutes and hours
- Compare durations of events [for example to calculate the time taken by particular events or tasks]

### Measurements: length and perimeter

- Measure the perimeter of simple 2-D shapes

### Properties of shape

- Draw 2D shapes
- Make 3D shapes using modelling materials
- Recognise 3D shapes in different orientations and describe them

### Measurements: volume and capacity

- Measure, compare, add and subtract: volume/capacity (l/ml)

		<p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>• Interpret and present data using bar charts, pictograms and tables</li> <li>• 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</li> </ul>	
Year 4	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>• Find 1000 more or less than a given number</li> <li>• Recognise the place value of each digit in a four- digit number (thousands, hundreds, tens, and ones)</li> <li>• Order and compare numbers beyond 1000</li> <li>• Identify, represent and estimate numbers using different representations</li> <li>• Count backwards through zero to include negative numbers</li> <li>• Count in multiples of 6, 7, 9</li> <li>• Count in multiples 25 and 1000</li> <li>• 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</li> </ul> <p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>• Practise mental methods with increasingly large numbers to aid fluency</li> <li>• Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li> <li>• Add and subtract numbers mentally with increasingly large numbers</li> <li>• Estimate and use inverse operations to check answers to a calculation</li> <li>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</li> </ul> <p><b>Multiplication and division</b></p>	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>• Find 1000 more or less than a given number</li> <li>• Recognise the place value of each digit in a four- digit number (thousands, hundreds, tens, and ones)</li> <li>• Order and compare numbers beyond 1000</li> <li>• Identify, represent and estimate numbers using different representations</li> <li>• Count backwards through zero to include negative numbers</li> <li>• Count in multiples of 6, 7, 9, 7</li> <li>• Count in multiples 25 and 1000</li> <li>• Solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> </ul> <p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>• Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> <li>• Estimate and use inverse operations to check answers to a calculation</li> <li>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</li> </ul> <p><b>Multiplication and division</b></p> <ul style="list-style-type: none"> <li>• Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></li> <li>• Recognise and use factor pairs and commutativity in mental calculations</li> <li>• Multiply two-digit numbers by a one-digit number using formal written layout</li> </ul>	<p><b>Number and place value</b></p> <ul style="list-style-type: none"> <li>• Round any number to the nearest 10, 100 or 1000</li> <li>• Solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> </ul> <p><b>Addition and subtraction</b></p> <ul style="list-style-type: none"> <li>• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</li> <li>• Estimate and use inverse operations to check answers to a calculation</li> <li>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</li> <li>• Add and subtract numbers mentally with increasingly large numbers</li> </ul> <p><b>Multiplication and division</b></p> <ul style="list-style-type: none"> <li>• Multiply two-digit numbers by a one-digit number using formal written layout</li> <li>• Multiply three-digit numbers by a one-digit number using formal written layout</li> <li>• 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</li> </ul>

- Use place value, known and derived facts to multiply mentally, including multiplying by 0 and 1, multiplying together three numbers
- Recall multiplication and division facts for multiplication tables up to  $12 \times 12$
- Recognise and use factor pairs and commutativity in mental calculations
- Multiply two-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

#### Measurement (length, perimeter and area)

- Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- Find the area of rectilinear shapes by counting squares
- Estimate, compare and calculate different measures
- Convert between different units of measure [for example, kilometre to metre]

#### Fractions and decimals

- 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
- Use factors and multiples to recognise equivalent fractions and simplify where appropriate [for example:  $\frac{6}{9} = \frac{2}{3}$  or  $\frac{1}{4} = \frac{2}{8}$  ] \*
- Add and subtract fractions with the same denominator
- Extend the use of a number line to connect fractions, numbers and measures.

- Multiply 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

#### Measurement (time)

- Convert between different units of measure (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

#### Decimals

- Extend understanding of the number system and decimal place value to tenths \*
- Round decimals with one decimal place to the nearest whole number
- Compare numbers with the same number of decimal places up to two decimal places
- Solve simple measure problems involving decimals to two decimal places
- Recognise and write decimal equivalents of any number of hundredths
- Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- 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

#### Measurement (volume and capacity)

- Convert between different units of measure (ml to litres)

problems such as  $n$  objects are connected to  $m$  objects

- Practise to become fluent in the formal written method of short division with exact answers \*

#### Fractions and decimals

- Extend understanding of the number system and decimal place value to tenths and then hundredths\*
- Recognise and write decimal equivalents of any number of tenths or hundredths
- 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
- Recognise and write decimal equivalents to  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$
- Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- Round decimals with one decimal place to the nearest whole number
- Compare numbers with the same number of decimal places up to two decimal places
- Solve simple measure and money problems involving decimals to two decimal places

#### Measurement (money)

- Estimate, compare and calculate different measures, including money in pounds and pence
- Solve simple measure and money problems involving decimals to two decimal places
- Convert between different units of measure (hour to minute)

	<ul style="list-style-type: none"> <li>Understand the relation between non-unit fractions and multiplication and division of quantities.</li> <li>Recognise and write decimal equivalents of any number of hundredths</li> <li>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths</li> <li>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</li> </ul> <p><b>Position and direction</b></p> <ul style="list-style-type: none"> <li>Describe positions on a 2-D grid as coordinates in the first quadrant</li> <li>Describe movements between positions as translations of a given unit to the left/right/up/down</li> <li>Plot specified points and draw sides to complete a given polygon</li> </ul>	<ul style="list-style-type: none"> <li>Estimate, compare and calculate different measures</li> </ul> <p><b>Properties of shapes</b></p> <ul style="list-style-type: none"> <li>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</li> <li>Identify lines of symmetry in 2-D shapes presented in different orientations</li> <li>Complete a simple symmetric figure with respect to a specific line of symmetry</li> </ul>	<p><b>Properties of shapes</b></p> <ul style="list-style-type: none"> <li>Identify acute and obtuse angle and compare and order angles, up to two right angles by size</li> </ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</li> <li>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</li> </ul> <p><b>Measurement (time)</b></p> <ul style="list-style-type: none"> <li>Convert between different units of measure (hour to minute)</li> <li>Read, write and convert time between analogue and digital 12- and 24-hour clocks</li> <li>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</li> </ul>
Year 5	<p><b>Number and Place Value</b></p> <ul style="list-style-type: none"> <li>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</li> <li>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</li> <li>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> <li>Solve number problems and practical problems that involve all of the above</li> <li>Read Roman numerals to 1000(M) and recognise years written in Roman numerals</li> </ul>	<p><b>Number and Place Value</b></p> <ul style="list-style-type: none"> <li>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</li> <li>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</li> <li>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</li> <li>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> </ul>	<p><b>Number and Place Value</b></p> <ul style="list-style-type: none"> <li>Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</li> <li>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</li> <li>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</li> <li>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> </ul>

### Addition and Subtraction

- 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
- Add numbers mentally with increasingly large numbers
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

### Multiplication and Division

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- 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 and divide whole numbers and those involving decimals by 10, 100 and 1000
- Recognise and use square numbers and cube numbers, and the notation for squared and cubed
- Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes

### Properties of Shape

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

### Position and Direction

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

- Solve number problems and practical problems that involve all of the above

### Addition and Subtraction

- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- Practise using the formal written methods of columnar addition and subtraction with increasing large numbers to aid fluency\*\*
- 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
- Add and subtract numbers mentally with increasingly large numbers
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Practice adding and subtracting decimals, including a mix of whole numbers and decimals \*\*

### Multiplication and Divide

- Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- Multiply and divide numbers mentally drawing upon known facts
- 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, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

### Geometry – Properties of Shape

- 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.

### Addition and Subtraction

- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- Practise using the formal written methods of columnar addition and subtraction with increasingly large numbers to aid fluency\*\*
- 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
- Add and subtract numbers mentally with increasingly large numbers
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Practice adding and subtracting decimals, including a mix of whole numbers and decimals \*\*

### 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 two-digit numbers
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and

- Describe movements between positions as translations of a given unit to the left/right and up/down
- Plot specified points and draw sides to complete a given polygon.

### Fractions

- Compare and order fractions whose denominators are all multiples of the same number
- Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- Develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities \*\*
- Practise counting forwards and backwards in simple fractions \*\*
- Recognise and describe linear number sequences, including those involving fractions and find the term-to-term rule \*\*

### Decimals

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

- 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  $360^{\circ}$ )
  - angles at a point on a straight line and  $\frac{1}{2}$  a turn (total  $180^{\circ}$ )
  - other multiples of  $90^{\circ}$
- 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.

### Fractions

- Compare and order fractions whose denominators are all multiples of the same number
- 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,  $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$  ]
- Add and subtract fractions with the same denominator and denominators that are multiples of the same number

### Decimals and percentages

- Read and write decimal numbers as fractions [for example,  $0.71 = \frac{71}{100}$  ]
- 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
- Read, write, order and compare numbers with up to three decimal places

interpret remainders appropriately for the context

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

### 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.

### Properties of Shape

- Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- Draw given angles, and measure them in degrees ( $^{\circ}$ )
- Identify:
  - angles at a point and one whole turn (total  $360^{\circ}$ )
  - angles at a point on a straight line and  $\frac{1}{2}$  a turn (total  $180^{\circ}$ )
  - other multiples of  $90^{\circ}$
- 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.

### Fractions and Percentages

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

- Solve problems involving number up to three decimal places
- Solve problems which require knowing percentage and decimal equivalents of  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{5}$ ,  $\frac{2}{5}$ ,  $\frac{4}{5}$  and those fractions with a denominator of a multiple of 10 or 25.
- Practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places and complements of 1 \*\*
- Mentally add and subtract tenths, and one-digit whole numbers and tenths \*\*

#### Measurement

- convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes
- estimate volume [for example, using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)] and capacity [for example, using water]
- solve problems involving converting between units of time
- use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- 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  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{5}$ ,  $\frac{2}{5}$ ,  $\frac{4}{5}$  and those fractions with a denominator of a multiple of 10 or 25.
- Make connections between percentages, fractions and decimals \*\*
- Connect equivalent fractions more than 1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions \*\*

#### Decimals

- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
- Read, write, order and compare numbers with up to 3 decimal places
- Solve problems involving numbers up to 3 decimal places
- Practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places and complements of 1 \*\*

#### Measurement (volume and capacity)

- Convert between different units of metric measure (for example, litre and millilitre)

			<ul style="list-style-type: none"> <li>• Understand and use approximate equivalences between metric units and common imperial units such as pints</li> <li>• Estimate volume [for example, using 1 cm<sup>3</sup> blocks to build cuboids (including cubes) and capacity [for example, using water]</li> <li>• Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.</li> </ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"> <li>• Solve comparison, sum and difference problems using information presented in a line graph</li> <li>• Complete, read and interpret information in tables, including timetables</li> </ul>
<p><b>Year 6</b></p>	<p><b>Number and place Value</b></p> <ul style="list-style-type: none"> <li>• Read, write, order and compare numbers up to 10000000 and determine the value of each digit</li> <li>• Round any whole number to a required degree of accuracy</li> <li>• Solve number and practical problems</li> </ul> <p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>• Perform mental calculations, including with mixed operations and large numbers</li> <li>• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>• Solve problems involving addition and subtraction</li> <li>• Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</li> <li>• Use formal methods to solve multi-step problems</li> </ul> <p><b>Multiplication</b></p>	<p><b>Number and place Value</b></p> <ul style="list-style-type: none"> <li>• Use negative numbers in context and calculate intervals across zero</li> </ul> <p><b>Addition, Subtraction, Multiplication, Division</b></p> <ul style="list-style-type: none"> <li>• Perform mental calculations, including with mixed operations and large numbers</li> <li>• Use their knowledge of the order of operations to carry out Calculations involving the four operations</li> <li>• Practise addition, subtraction, multiplication and division for larger numbers, using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>• Solve problems involving addition, subtraction, multiplication and division</li> </ul> <p><b>Multiplication and Division (decimals)</b></p> <ul style="list-style-type: none"> <li>• Multiply decimals by whole numbers, starting with the simplest cases, such as <math>0.4 \times 2 =</math></li> </ul>	<p><b>Addition, Subtraction, Multiplication and Division</b></p> <ul style="list-style-type: none"> <li>• Perform mental calculations, including with mixed operations and large numbers</li> <li>• Use their knowledge of the order of operations to carry out calculations involving the four operations</li> <li>• Solve problems involving addition, subtraction, multiplication and division</li> <li>• Use estimation to check answers to calculations</li> </ul> <p><b>Multiplication and Division</b></p> <ul style="list-style-type: none"> <li>• Identify common factors and common multiples</li> <li>• Solve problems involving addition, subtraction, multiplication and division</li> <li>• Solve problems which require answers to be rounded to specified degrees of accuracy Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</li> </ul>

- Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- Perform mental calculations, including with mixed operations and large numbers
- 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

### Division

- Divide numbers up to 4 digits by a two-digit number using the formal written method of long division where appropriate, interpreting remainders according to the context
- Perform mental calculations, including with mixed operations and large numbers
- Identify common factors, common multiples and prime numbers
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- Solve problems involving addition, subtraction, multiplication and division

### Fractions

- Use common factors to simplify fractions
- Use common multiples to express fractions in the same denomination
- Compare and order fractions, including fractions  $> 1$
- Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

### Decimals

- Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
- Round any whole number to a required degree of accuracy

- 0.8, and in practical contexts, such as measures and money
- Perform mental calculations, including with mixed operations and large numbers
- Use estimation to check answers to calculations
- Perform mental calculations, including with mixed operations and large numbers
- Divide numbers up to 4 digits by a two-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
- Practise division for larger numbers, using the formal written method of long division
- Solve problems involving addition, subtraction, multiplication and division
- Use estimation to check answers to calculations
- Use written division methods in cases where the answer has up to two decimal places

### Fractions, decimals and percentages

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

- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
- Multiply decimals by whole numbers, starting with the simplest cases, such as  $0.4 \times 2 = 0.8$ , and in practical contexts, such as measures and money
- Divide numbers up to 4 digits by a two-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
- Practise division for larger numbers, using the formal written method of long division
- Use written division methods in cases where the answer has up to two decimal places

### Fractions, decimals and percentages

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- 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,  $\frac{3}{8}$  ]
- Solve problems which require answers to be rounded to specified degrees of accuracy

### Properties of Shape

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

### Position and Direction

- Describe positions on the full coordinate grid (all four quadrants)
- Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

### Statistics

- Interpret and construct pie charts and line graphs and use these to solve problems
- Draw graphs relating two variables
- Calculate and interpret the mean as an average

### Measurement

- solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
- convert between miles and kilometres

- Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison

### Ratio and Proportion

- Recognise proportionality in contexts when the relations between quantities are in the same ratio (for example, similar shapes and recipes).
- Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
- Consolidate their understanding of ratio when comparing quantities, sizes and scale drawings by solving a variety of problems.
- 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.

### Measurement (perimeter and area)

- Recognise that shapes with the same areas can have different perimeters and vice versa
- Recognise when it is possible to use formulae for area and volume of shapes
- Calculate the area of parallelograms and triangles

### 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

- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
- Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison

### Geometry – Properties of Shape

- draw 2-D shapes using given dimensions and angles
- recognise, describe and build simple 3-D shapes, including making nets
- compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
- illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
- recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

### Measurement (volume and capacity)

- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- Use, read, write and convert between standard units, converting measurements of volume from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
- Recognise when it is possible to use formulae for volume of shapes

			<ul style="list-style-type: none"><li>• Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units [for example, mm<sup>3</sup> and km<sup>3</sup>].</li></ul> <p><b>Algebra</b></p> <ul style="list-style-type: none"><li>• Use simple formulae</li><li>• Generate and describe linear number sequences</li><li>• Express missing number problems algebraically</li><li>• Find pairs of numbers that satisfy an equation with two unknowns</li><li>• Enumerate possibilities of combinations of two variables</li></ul> <p><b>Statistics</b></p> <ul style="list-style-type: none"><li>• Interpret and construct pie charts and line graphs and use these to solve problems</li><li>• Draw graphs relating two variables</li><li>• Calculate and interpret the mean as an average</li></ul>
--	--	--	---