



# End Points: Mathematics

	<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
<b>Year 1</b>	<p><b>Unit 1: Numbers to 10</b></p> <ul style="list-style-type: none"> <li>identify and represent numbers using concrete objects and pictorial representations including the number line, and use the language of equal to, more than, less than (fewer), most, least</li> <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; count in multiples of twos, fives and tens</li> <li>read and write numbers from 1 to 20 in numerals and words</li> <li>given a number, identify one more and one less</li> </ul> <p><b>Unit 2: Part-whole within 10</b></p> <ul style="list-style-type: none"> <li>represent and use number bonds and related subtraction facts within 20</li> <li>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</li> </ul> <p><b>Unit 3: Addition and subtraction within 10 (1)</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 solve missing number problems such as <math>7 = ? - 9</math></li> </ul> <p><b>Unit 4: Addition and subtraction within 10 (2)</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> </ul>	<p><b>Unit 7: Addition within 20</b></p> <ul style="list-style-type: none"> <li>add and subtract one-digit and two-digit numbers to 20, including zero</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</li> </ul> <p><b>Unit 8: Subtraction within 20</b></p> <ul style="list-style-type: none"> <li>add and subtract one-digit and two-digit numbers to 20, including zero</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</li> </ul> <p><b>Unit 9: Numbers to 50</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>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</li> <li>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</li> <li>given a number, identify one more and one less</li> <li>recognise the place value of each digit in a two-digit number (tens, ones) (Year 2)</li> <li>represent and use number bonds and related subtraction facts within 20</li> <li>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</li> </ul> <p><b>Unit 10: Introducing length and height</b></p>	<p><b>Unit 12: Multiplication</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>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</li> </ul> <p><b>Unit 13: Division</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p><b>Unit 14: Halves and quarters</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> <p><b>Unit 16: Numbers to 100</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>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</li> <li>recognise the place value of each digit in a two-digit number (tens, ones) (Year 2)</li> <li>given a number, identify one more and one less</li> <li>compare and order numbers from 0 up to 100; use <math>&gt;</math>, <math>&lt;</math> and <math>=</math> signs (Year 2)</li> <li>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens</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>



# End Points: Mathematics

	<ul style="list-style-type: none"> <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> <li>• add and subtract one-digit and two-digit numbers to 20, including zero</li> </ul> <p><b>Unit 5: 2 and 3 d shapes</b></p> <ul style="list-style-type: none"> <li>• recognise and name common 2D and 3D shapes, including 2D shapes [for example, rectangles (including squares), circles and triangles]; 3D shapes [for example, cuboids (including cubes), pyramids and spheres]</li> </ul> <p><b>Unit 6: Numbers to 20</b></p> <ul style="list-style-type: none"> <li>• identify and represent numbers using concrete objects and pictorial representations, including the number line, and use the language of equal to, more than, less than (fewer), most, least</li> <li>• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</li> </ul>	<ul style="list-style-type: none"> <li>• compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]</li> <li>• measure and begin to record lengths and heights</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>Unit 11: Introducing weight and volume</b></p> <ul style="list-style-type: none"> <li>• compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]</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> <li>• measure and begin to record mass/weight</li> <li>• measure and begin to record capacity and volume</li> </ul>	<p><b>Unit 15: 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> <li>• non-statutory guidance: pupils use the language of position, direction and motion, including left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside</li> </ul> <p><b>Unit 17: Time</b></p> <ul style="list-style-type: none"> <li>• sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</li> <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> <li>• measure and begin to record time (hours, minutes, seconds)</li> <li>• compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later]</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>Unit 18: Money</b></p> <ul style="list-style-type: none"> <li>• recognise and know the value of different denominations of coins and notes count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens</li> </ul>
<p><b>Year 2</b></p>	<p><b>Unit 1: Numbers to 100</b></p> <ul style="list-style-type: none"> <li>• identify, represent and estimate numbers using different representations, including the number line</li> </ul>	<p><b>Unit 6: Multiplication and division (2)</b></p> <ul style="list-style-type: none"> <li>• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs</li> </ul>	<p><b>Unit 11: Position and direction</b></p> <ul style="list-style-type: none"> <li>• use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as</li> </ul>



# End Points: Mathematics

<ul style="list-style-type: none"><li>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens (Year 1 revision)</li><li>count in steps of 2, 3, and 5 from 0, and in tens from any number, forwards and backwards</li><li>recognise the place value of each digit in a two-digit number (tens, ones)</li></ul> <p>compare and order numbers from 0 up to 100; use <math>&lt;</math>, <math>=</math> and <math>&gt;</math> signs</p> <p><b>Unit 2: Addition and subtraction (1)</b></p> <ul style="list-style-type: none"><li>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</li><li>recognise the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</li><li>show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</li><li>add and subtract numbers using concrete objects, pictorial representations and mentally, including a two-digit number and ones</li><li>count in steps of 2, 3, and 5 from 0, and in tens from any number, forwards and backwards</li><li>solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li></ul> <p><b>Unit 3: Addition and subtraction (2)</b></p> <ul style="list-style-type: none"><li>add and subtract numbers using concrete objects, pictorial representations and mentally, including two two-digit numbers</li><li>solve problems with addition and subtraction, applying increasing knowledge of mental and written methods</li><li>solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li></ul> <p><b>Unit 4: Money</b></p>	<ul style="list-style-type: none"><li>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</li><li>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context.</li></ul> <p><b>Unit 7: Statistics</b></p> <ul style="list-style-type: none"><li>interpret and construct simple pictograms, tally charts, block diagrams and simple tables</li><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>Unit 8: Length and height</b></p> <ul style="list-style-type: none"><li>compare and order lengths, mass, volume/capacity and record the results using <math>G</math>, <math>q</math> and <math>=</math></li><li>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (<math>^{\circ}\text{C}</math>); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</li><li>solve problems with addition and subtraction, using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li></ul> <p><b>Unit 9: Properties of shape</b></p> <ul style="list-style-type: none"><li>compare and sort common 2D and 3D shapes and everyday objects</li><li>identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line</li><li>order and arrange combinations of mathematical objects in patterns and sequences</li><li>identify and describe the properties of 3D shapes, including the number of edges, vertices and faces</li></ul>	<p>a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)</p> <ul style="list-style-type: none"><li>order and arrange combinations of mathematical objects in patterns and sequences</li></ul> <p><b>Unit 12: Problem solving and efficient methods</b></p> <ul style="list-style-type: none"><li>use place value and number facts to solve problems</li><li>solve problems with addition and subtraction, using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li><li>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</li><li>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context</li><li>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</li></ul> <p><b>Unit 13: Time</b></p> <ul style="list-style-type: none"><li>compare and sequence intervals of time</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. (Year 1)</li><li>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</li><li>know the number of minutes in an hour and the number of hours in a day</li></ul> <p><b>Unit 14: Weight, volume and temperature</b></p> <ul style="list-style-type: none"><li>compare and order lengths, mass, volume/capacity and record the results using <math>G</math>, <math>q</math> and <math>=</math></li><li>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (<math>^{\circ}\text{C}</math>); capacity (litres/ml) to the nearest appropriate unit,</li></ul>
---	--	---



# End Points: Mathematics

	<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>recognise and know the value of different denominations of coins and notes (Year 1)</li> <li>find different combinations of coins that equal the same amounts of money</li> <li>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</li> </ul> <p><b>Unit 5: Multiplication and division (1)</b></p> <ul style="list-style-type: none"> <li>solve one-step problems involving multiplication and division, by using concrete objects, pictorial representations and arrays, with the support of the teacher (Year 1)</li> <li>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (<math>=</math>) signs</li> <li>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context</li> <li>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</li> </ul>	<p><b>Unit 10: 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 (Year 1)</li> <li>recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity</li> <li>write simple fractions, for example <math>\frac{1}{2}</math> of <math>6 = 3</math>, and recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math></li> <li>non-statutory guidelines: pupils should count in fractions up to 10, starting from any number</li> </ul>	<p>using rulers, scales, thermometers and measuring vessels</p>
<p><b>Year 3</b></p>	<p><b>Unit 1: Place Value within 1000</b></p> <ul style="list-style-type: none"> <li>recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</li> <li>read and write numbers up to 1,000 in numerals and in words</li> <li>identify, represent and estimate numbers using different representations</li> <li>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</li> <li>solve number problems and practical problems involving these ideas</li> </ul>	<p><b>Unit 5: Multiplication and Division (2)</b></p> <ul style="list-style-type: none"> <li>write and calculate mathematical statements for multiplication and division 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>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 division, including positive integer scaling problems and correspondence problems in which <math>n</math> objects are connected to <math>m</math> objects</li> </ul>	<p><b>Unit 10: Fractions</b></p> <ul style="list-style-type: none"> <li>recognise and show, using diagrams, equivalent fractions with small denominators</li> <li>recognise and use fractions as numbers; unit fractions and non-unit fractions with small denominators</li> <li>add and subtract fractions with the same denominator within one whole [for example, <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math>]</li> <li>compare and order unit fractions and fractions with the same denominator</li> <li>solve problems that involve all of the above</li> </ul>



# End Points: Mathematics

## Unit 2: Addition and Subtraction (1)

- add and subtract numbers mentally, including a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
- add and subtract numbers with up to three digits using formal written methods of columnar addition and subtraction
- add and subtract numbers mentally, including a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds

## Unit 3: Addition and Subtraction (2)

- add and subtract numbers mentally, including a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds
- solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
- estimate the answer to a calculation and use inverse operations to check answers
- add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
- add and subtract numbers mentally, including a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds

## Unit 4: Multiplication and Division (1)

- write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and

- solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

## Unit 6: Money

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

## Unit 7: 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

## Unit 8: Length

- measure, compare, add and subtract lengths (m/cm/mm), mass (kg/g), volume/capacity (l/ml)
- measure the perimeter of simple 2D shapes

## Unit 9: Fractions

- recognise and use fractions as numbers; unit fractions 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 by 10
- compare and order unit fractions, and fractions with the same denominators
- solve problems that involve all of the above

## Unit 11: Time

- know the number of seconds in a minute and the number of days in each month, year and leap year
- 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
- tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
- compare durations of events [for example to calculate the time taken for particular events or tasks]

## Unit 12: Angles and properties of shapes

- 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 make a complete turn; identify whether angles are greater than or less than a right angle
- draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them
- identify horizontal and vertical lines and pairs of perpendicular and parallel lines

## Unit 13: Mass

- 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 make a complete turn; identify whether angles are greater than or less than a right angle
- draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them
- identify horizontal and vertical lines and pairs of perpendicular and parallel lines



# End Points: Mathematics

	correspondence problems in which $n$ objects are connected to $m$ objects		<b>Unit 14: Capacity</b> <ul style="list-style-type: none"> <li>measure, compare, add and subtract lengths (m/cm/mm), mass (kg/g), volume/capacity (l/ml)</li> </ul>
Year 4	<b>Unit 1: Place Value – 4 digit numbers</b> <ul style="list-style-type: none"> <li>recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones)</li> <li>identify, represent and estimate numbers using different representations</li> <li>round any number to the nearest 10, 100 or 1,000</li> <li>count in multiples of 6, 7, 9, 25 and 1,000</li> <li>find 1,000 more or less than a given number</li> <li>order and compare numbers beyond 1,000</li> </ul> <b>Unit 2: Place Value – 4 digit numbers</b> <ul style="list-style-type: none"> <li>find 1,000 more or less than a given number</li> <li>order and compare numbers beyond 1000</li> <li>identify, represent and estimate numbers using different representations</li> <li>round any number to the nearest 10, 100 or 1,000</li> <li>count in multiples of 6, 7, 9, 25 and 1,000</li> <li>solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> <li>count in multiples of 6, 7, 9, 25 and 1,000</li> <li>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</li> <li>count backwards through zero to include negative numbers</li> </ul> <b>Unit 3: Addition and Subtraction</b> <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>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</li> <li>round any number to the nearest 10, 100 or 1,000</li> <li>estimate and use inverse operations to check answers to a calculation</li> </ul>	<b>Unit 6: Multiplication and division (2)</b> <ul style="list-style-type: none"> <li>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> <li>multiply two-digit and three-digit numbers by a one-digit number using a formal written layout</li> <li>recognise and use factor pairs and commutativity in mental calculations</li> <li>multiply two-digit and three-digit numbers by a one-digit number using a formal written layout</li> <li>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</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 problems such as <math>n</math> objects are connected to <math>m</math> objects</li> </ul> <b>Unit 7: Measure – Area</b> <ul style="list-style-type: none"> <li>find the area of rectilinear shapes by counting squares</li> <li>estimate, compare and calculate different measures, including money in pounds and pence</li> </ul> <b>Unit 8: Fractions (1)</b> <ul style="list-style-type: none"> <li>count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten</li> </ul>	<b>Unit 11: Decimals (2)</b> <ul style="list-style-type: none"> <li>recognise and write decimal equivalents of any number of tenths or hundredths</li> <li>add and subtract fractions with the same denominator</li> <li>compare numbers with the same number of decimal places up to two decimal places</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>round decimals with one decimal place to the nearest whole number</li> <li>recognise and write decimal equivalents to <math>1/4</math>, <math>1/2</math>, <math>3/4</math></li> <li>solve simple measure and money problems involving fractions and decimals to two decimal places</li> </ul> <b>Unit 12: Money</b> <ul style="list-style-type: none"> <li>estimate, compare and calculate different measures, including money in pounds and pence</li> <li>solve simple measure and money problems involving fractions and decimals to two decimal places</li> </ul> <b>Unit 13: Time</b> <ul style="list-style-type: none"> <li>Convert between different units of measure [for example, kilometre to metre, hour to minute]</li> </ul> <b>Unit 14: Statistics</b> <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>



# End Points: Mathematics

	<p><b>Unit 4: Measure – Perimeter</b></p> <ul style="list-style-type: none"> <li>convert between different units of measure [for example, kilometre to metre, hour to minute]</li> <li>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</li> </ul> <p><b>Unit 5: Multiplication and Division (1)</b></p> <ul style="list-style-type: none"> <li>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</li> <li>recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></li> <li>solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.</li> </ul>	<ul style="list-style-type: none"> <li>recognise and show, using diagrams, families of common equivalent fractions</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> <li>add and subtract fractions with the same denominator</li> </ul> <p><b>Unit 9: Fractions (2)</b></p> <ul style="list-style-type: none"> <li>add and subtract fractions with the same denominator</li> <li>solve problems involving increasingly harder fractions to calculate quantities, and use fractions to divide quantities, including non-unit fractions where the answer is a whole number</li> </ul> <p><b>Unit 10: Decimals (1)</b></p> <ul style="list-style-type: none"> <li>recognise and write decimal equivalents of any number of tenths or hundredths</li> <li>solve simple measure and money problems involving fractions and decimals to two decimal places</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>recognise and write decimal equivalents of any number of tenths or hundredths</li> <li>count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten</li> </ul>	<p><b>Unit 15: Geometry – Angles and 2D shapes</b></p> <ul style="list-style-type: none"> <li>identify acute and obtuse angles and compare and order angles up to two right angles by size</li> <li>compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</li> <li>identify lines of symmetry in 2D shapes presented in different orientations</li> <li>complete a simple symmetric figure with respect to a specific line of symmetry</li> </ul> <p><b>Unit 16: Geometry – Position and Direction</b></p> <ul style="list-style-type: none"> <li>describe positions on a 2D grid as coordinates in the first quadrant</li> <li>plot specified points and draw sides to complete a given polygon</li> <li>describe movements between positions as translations of a given unit to the left/right and up/down</li> </ul>
<p><b>Year 5</b></p>	<p><b>Unit 1: Place Value within 100,000</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> </ul>	<p><b>Unit 7: Multiplication and Division (2)</b></p> <ul style="list-style-type: none"> <li>multiply and divide numbers mentally drawing upon known facts</li> <li>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</li> </ul>	<p><b>Unit 12: Decimals</b></p> <ul style="list-style-type: none"> <li>solve problems that require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25</li> </ul>



## End Points: Mathematics

	<ul style="list-style-type: none"> <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, 1,000, 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 1,000 (M) and recognise years written in Roman numerals</li> </ul> <p><b>Unit 2: Place Value within 1,000,000</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>solve number problems and practical problems that involve all of the above</li> <li>round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000</li> <li>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</li> <li>count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000</li> <li>solve number problems and practical problems that involve all of the above</li> </ul>	<ul style="list-style-type: none"> <li>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</li> </ul> <p><b>Unit 8: Fractions (1)</b></p> <ul style="list-style-type: none"> <li>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>recognise mixed numbers and improper fractions and convert from one form to the other</li> <li>and write mathematical statements G 1 as a mixed number [for example, <math>2/5 + 4/5 = 6/5 = 1 \frac{1}{5}</math>]</li> <li>compare and order fractions whose denominators are all multiples of the same number</li> </ul> <p><b>Unit 9: Fractions (2)</b></p> <ul style="list-style-type: none"> <li>add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <li>recognise mixed numbers and improper fractions and convert from one form to the other</li> <li>and write mathematical statements G 1 as a mixed number [for example, <math>2/5 + 4/5 = 6/5 = 1 \frac{1}{5}</math>]</li> </ul> <p><b>Unit 10: Fractions (3)</b></p> <ul style="list-style-type: none"> <li>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</li> </ul>	<ul style="list-style-type: none"> <li>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>solve problems involving number up to three decimal places</li> <li>read, write, order and compare numbers with up to three decimal places</li> <li>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> </ul> <p><b>Unit 13: Geometry – Properties of shapes 1</b></p> <ul style="list-style-type: none"> <li>identify: <ul style="list-style-type: none"> <li>angles at a point and one whole turn (total <math>360^\circ</math>)</li> <li>angles at a point on a straight line and <math>1/2</math> a turn (total <math>180^\circ</math>)</li> <li>other multiples of <math>90^\circ</math></li> </ul> </li> <li>know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles</li> <li>draw given angles, and measure them in degrees (<math>^\circ</math>)</li> <li>use the properties of rectangles to deduce related facts and find missing lengths and angles</li> </ul> <p><b>Unit 14: Geometry – Properties of shapes 2</b></p> <ul style="list-style-type: none"> <li>identify: <ul style="list-style-type: none"> <li>angles at a point and one whole turn (total <math>360^\circ</math>)</li> </ul> </li> </ul>
--	--	---	---



## End Points: Mathematics

	<p><b>Unit 3: Addition and Subtraction</b></p> <ul style="list-style-type: none"><li>• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li><li>• use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li><li>• add and subtract numbers mentally with increasingly large numbers</li><li>• solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why</li><li>• estimate and use inverse operations to check answers to a calculation</li></ul> <p><b>Unit 4: Graphs and Tables</b></p> <ul style="list-style-type: none"><li>• complete, read and interpret information in tables, including timetables</li><li>• solve comparison, sum and difference problems using information presented in a line graph</li></ul> <p><b>Unit 5: Multiplication and Division (1)</b></p> <ul style="list-style-type: none"><li>• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li><li>• solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes</li></ul>	<ul style="list-style-type: none"><li>• recognise mixed numbers and improper fractions and convert from one form to the other</li><li>• write mathematical statements <math>G \ 1</math> as a mixed number [for example, <math>2/5 + 4/5 = 6/5 = 1 \ 1/5</math>]</li></ul> <p><b>Unit 11: Decimals and percentages</b></p> <ul style="list-style-type: none"><li>• read, write, order and compare numbers with up to three decimal places</li><li>• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li><li>• round decimals with two decimal places to the nearest whole number and to one decimal place</li><li>• recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred',</li><li>• and write percentages as a fraction with denominator 100, and as a decimal</li></ul>	<ul style="list-style-type: none"><li>○ angles at a point on a straight line and <math>1/2</math> a turn (total <math>180^\circ</math>)</li><li>○ other multiples of <math>90^\circ</math></li><li>• draw given angles, and measure them in degrees (<math>^\circ</math>)</li><li>• use the properties of rectangles to deduce related facts and find missing lengths and angles</li><li>• distinguish between regular and irregular polygons based on reasoning about equal sides and angles</li><li>• identify 3D shapes, including cubes and other cuboids, from 2D representations</li><li>• 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</li></ul> <p><b>Unit 15: Geometry Position and direction</b></p> <ul style="list-style-type: none"><li>• identify, describe and represent the position of a shape following a reflection or translation, using appropriate language, and know that the shape has not changed</li></ul> <p><b>Unit 16: Measure – converting units</b></p> <ul style="list-style-type: none"><li>• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</li></ul>
--	---	---	--



## End Points: Mathematics

	<ul style="list-style-type: none"> <li>• know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>• establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>• recognise and use square numbers and cube numbers, and the notation for squared (<math>^2</math>) and cubed (<math>^3</math>), identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li> <li>• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> <li>• multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000</li> </ul> <p><b>Unit 6: Measure – Area and Perimeter</b></p> <ul style="list-style-type: none"> <li>• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</li> <li>• calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (<math>\text{cm}^2</math>) and square metres (<math>\text{m}^2</math>) and estimate the area of irregular shapes</li> </ul>		<ul style="list-style-type: none"> <li>• use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling</li> <li>• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</li> <li>• solve problems involving converting between units of time</li> </ul> <p><b>Unit 17: Measure – Volume and capacity</b></p> <ul style="list-style-type: none"> <li>• estimate volume [for example, using <math>1 \text{ cm}^3</math> blocks to build cuboids (including cubes)] and capacity [for example, using water]</li> </ul>
<b>Year 6</b>	<p><b>Unit 1: Place Value within 10,000,000</b></p> <ul style="list-style-type: none"> <li>• read, write, order and compare numbers up to</li> </ul>	<p><b>Unit 7: Decimals</b></p> <ul style="list-style-type: none"> <li>• identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10,</li> </ul>	<p><b>Unit 13: Geometry – properties of shape</b></p> <ul style="list-style-type: none"> <li>• draw 2D shapes using given dimensions and angles</li> </ul>



## End Points: Mathematics

	<p>10,000,000 and determine the value of each digit</p> <ul style="list-style-type: none"><li>• solve number and practical problems that involve all of the above</li><li>• round any whole number to a required degree of accuracy</li><li>• use negative numbers in context, and calculate intervals across zero</li></ul> <p><b>Unit 2: Four Operations (1)</b></p> <ul style="list-style-type: none"><li>• solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why</li><li>• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</li><li>• divide numbers up to 4 digits by a two-digit number using the formal written method of short division, where appropriate, interpreting remainders according to the context</li><li>• 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</li></ul> <p><b>Unit 3: Four Operations (2)</b></p> <ul style="list-style-type: none"><li>• identify common factors, common multiples and prime numbers</li></ul>	<p>100 and 1,000 giving answers up to three decimal places</p> <ul style="list-style-type: none"><li>• associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, <math>\frac{3}{8}</math>]</li><li>• use written division methods in cases where the answer has up to two decimal places</li><li>• multiply one-digit numbers with up to two decimal places by whole numbers</li><li>• solve problems that require answers to be rounded to specified degrees of accuracy</li></ul> <p><b>Unit 8: Percentages</b></p> <ul style="list-style-type: none"><li>• recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</li><li>• solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison</li><li>• multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>]</li><li>• multiply one-digit numbers with up to two decimal places by whole numbers</li><li>• compare and order fractions, including fractions greater than 1</li></ul>	<ul style="list-style-type: none"><li>• compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons</li><li>• recognise angles where they meet at a point, are on a straight line or are vertically opposite, and find missing angles</li><li>• illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</li><li>• recognise, describe and build simple 3D shapes, including making nets</li><li>• identify 3D shapes, including cubes and other cuboids, from 2D representations</li></ul> <p><b>Unit 14: Problem Solving</b></p> <ul style="list-style-type: none"><li>• use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</li><li>• solve problems involving addition, subtraction, multiplication and division</li><li>• solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why</li></ul>
--	--	---	---



## End Points: Mathematics

- recognise and use square numbers and cube numbers, and the notation for squared ( $^2$ ) and cubed ( $^3$ ) (Year 5)
- use their knowledge of the order of operations to carry out calculations involving the four operations
- perform mental calculations, including with mixed operations and large numbers
- solve problems involving addition, subtraction, multiplication and division

### **Unit 4: Fractions (1)**

- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including fractions greater than 1
- add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

### **Unit 5 Fractions (2)**

- multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- multiply simple pairs of proper fractions, writing the answer in its simplest form [for example,  $1/4 \times 1/2 = 1/8$ ]
- divide proper fractions by whole numbers [for example,  $1/3 \div 2 = 1/6$  ]

- solve problems that require answers to be rounded to specified degrees of accuracy
- solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison

### **Unit 9: Algebra**

- generate and describe linear number sequences
- use simple formulae
- express missing number problems algebraically
- use simple formulae
- find pairs of numbers that satisfy an equation with two unknowns
- enumerate possibilities of combinations of two variables

### **Unit 10: Measure – Imperial and Metric Measures**

- 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 up to three decimal places
- solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places, where appropriate
- convert between miles and kilometres

- use knowledge of the order of operations to carry out calculations involving the four operations
- solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
- solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

### **Unit 15: Statistics**

- calculate and interpret the mean as an average
- interpret and construct pie charts and line graphs and use these to solve problems



## End Points: Mathematics

- add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- use their knowledge of the order of operations to carry out calculations involving the four operations
- use written division methods in cases where the answer has up to two decimal places

### **Unit 6: Geometry-Position and Direction**

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

### **Unit 11: Measure \_perimeter, Area and volume**

- recognise that shapes with the same areas can have different perimeters and vice versa
- recognise when it is possible to use formulae for area and volume of shapes
- calculate the area of parallelograms and triangles
- calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres ( $\text{cm}^3$ ) and cubic metres ( $\text{m}^3$ ), and extending to other units [for example,  $\text{mm}^3$  and  $\text{km}^3$ ]

### **Unit 12: Ratio and Proportion**

- solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
- solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
- solve problems involving similar shapes where the scale factor is known or can be found