



Maths National Curriculum Coverage.

	Year 3	Year 4						
<p>Number and Place Value</p> <table border="1"><caption>PLACE VALUE CHART</caption><thead><tr><th>Hundreds</th><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td>4</td><td>7</td><td>9</td></tr></tbody></table>	Hundreds	Tens	Ones	4	7	9	<ul style="list-style-type: none">• count from 0 in multiples of 4, 8, 50 and 100• find 10 or 100 more or less than a given number• recognise the place value of each digit in a three-digit number (hundreds, tens, ones)• compare and order numbers up to 1000• read and write numbers up to 1000 in numerals and in words <ul style="list-style-type: none">• identify, represent and estimate numbers using different representations <ul style="list-style-type: none">• solve number problems and practical problems involving these ideas.	<ul style="list-style-type: none">• count in multiples of 6, 7, 9, 25 and 1000• find 1000 more or less than a given number• recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)• order and compare numbers beyond 1000 <ul style="list-style-type: none">• identify, represent and estimate numbers using different representations <ul style="list-style-type: none">• solve number and practical problems that involve all of the above and with increasingly large positive numbers
Hundreds	Tens	Ones						
4	7	9						



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Negative Numbers

- count backwards through zero to include negative numbers

Rounding

- **round** any number to the nearest **10, 100 or 1000**


Roman Numerals

- 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.

Roman numerals should be put in their historical context so pupils understand that there have been different ways to write whole numbers and that the important concepts of zero and place value were introduced over a period of time.




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<p>Addition, subtraction,</p> 	<p>add and subtract numbers mentally, including:</p> <ul style="list-style-type: none">• a three-digit number and ones a three-digit number and tens a three-digit number and hundreds• add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction• estimate the answer to a calculation and use inverse operations to check answers• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	<ul style="list-style-type: none">• 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. <p><i>Pupils continue to practise both mental methods and columnar addition and subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1).</i></p>





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Multiplication and Division 	<ul style="list-style-type: none">recall and use multiplication and division facts for the 3, 4 and 8 multiplication tableswrite 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 methodssolve 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.	<ul style="list-style-type: none">recall multiplication and division facts for multiplication tables up to 12 × 12use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1;multiplying together three numbersrecognise and use factor pairs and commutativity in mental calculationsmultiply two-digit and three-digit numbers by a one-digit number using formal written layoutsolve 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. <p>Pupils write statements about the equality of expressions (for example, use the distributive law $39 \times 7 = 30 \times 7 + 9 \times 7$ and associative law $(2 \times 3) \times 4 = 2 \times (3 \times 4)$). They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, $2 \times 6 \times 5 = 10 \times 6 = 60$.</p>



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<p>Fractions & Decimals</p>  	<ul style="list-style-type: none">• count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 • recognise and show, using diagrams, equivalent fractions with small denominators	<ul style="list-style-type: none">• count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.• recognise and write decimal equivalents of any number of tenths or hundredths• 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 • recognise and show, using diagrams, families of common equivalent fractions




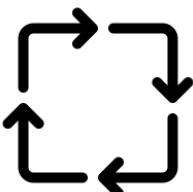
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	<ul style="list-style-type: none">• add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]• recognise, find and write fractions of a discrete set of objects: unit fractions and non- unit fractions with small denominators• recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • compare and order unit fractions, and fractions with the same denominators• solve problems that involve all of the above. <p>Pupils connect tenths to place value, decimal measures and to division by 10. They begin to understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence. They should go beyond the [0, 1] interval, including relating this to measure.</p> <p>Pupils understand the relation between unit fractions as operators (fractions of), and division by integers. They continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity.</p>	<ul style="list-style-type: none">• add and subtract fractions with the same denominator • Solve simple measure and money problems involving fractions and decimals to two decimal places • 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 <p>They practise counting using simple fractions and decimals, both forwards and backwards.</p> <p>Pupils learn decimal notation and the language associated with it, including in the context of measurements. They make comparisons and order decimal amounts and quantities that are expressed to the same number of decimal places. They should be able to represent numbers with one or two decimal places in several ways, such as on number lines</p>
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<p>Measurement</p> 	<ul style="list-style-type: none">• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) <p>Pupils continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed units (for example, 1 kg and 200g) and simple equivalents of mixed units (for example, 5m = 500cm).</p> <p>The comparison of measures includes simple scaling by integers (for example, a given quantity or measure is twice as long or five times as high) and this connects to multiplication.</p>	<ul style="list-style-type: none">• Convert between different units of measure [for example, kilometre to metre; hour to minute]• estimate, compare and calculate different measures, including money in pounds and pence <p>Pupils use multiplication to convert from larger to smaller units</p>
	<p><u>Perimeter</u></p> <ul style="list-style-type: none">• measure the perimeter of simple 2-D shapes.	<p><u>Perimeter and Area</u></p> <ul style="list-style-type: none">• measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres <p>Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit.</p> <ul style="list-style-type: none">• find the area of rectilinear shapes by counting squares <p>Pupils relate area to arrays and multiplication</p>



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	<p><u>Time</u></p> <ul style="list-style-type: none">• tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks• estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight• know the number of seconds in a minute and the number of days in each month, year and leap year• compare durations of events [for example to calculate the time taken by particular events or tasks]. <p>Pupils use both analogue and digital 12-hour clocks and record their times. In this way they become fluent in and prepared for using digital 24-hour clocks in year 4.</p>	<p><u>Time</u></p> <ul style="list-style-type: none">• 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.
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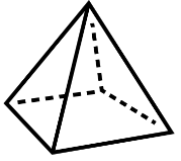

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<p>£</p>	<p>Money</p> <ul style="list-style-type: none">• add and subtract amounts of money to give change, using both £ and p in practical contexts <p>Pupils continue to become fluent in recognising the value of coins, by adding and subtracting amounts, including mixed units, and giving change using manageable amounts. They record £ and p separately. The decimal recording of money is introduced formally in year 4.</p>	<p>Pupils build on their understanding of place value and decimal notation to record metric measures, including money</p>
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<p>Geometry Properties of shape</p>  	<ul style="list-style-type: none">• draw 2-D shapes and make 3-D shapes using modelling materials;• recognise 3-D shapes in different orientations and describe them <p>Pupils should be able to describe the properties of 2-D and 3-D shapes using accurate language, including lengths of lines and acute and obtuse for angles greater or lesser than a right angle.</p> <p>Pupils connect decimals and rounding to drawing and measuring straight lines in centimetres, in a variety of contexts</p> <ul style="list-style-type: none">• identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	<ul style="list-style-type: none">• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes <p>Pupils continue to classify shapes using geometrical properties, extending to classifying different triangles (for example, isosceles, equilateral, scalene) and quadrilaterals (for example, parallelogram, rhombus, trapezium).</p> <p><u>Symmetry</u></p> <ul style="list-style-type: none">• identify lines of symmetry in 2-D shapes presented in different orientations• complete a simple symmetric figure with respect to a specific line of symmetry. <p>Pupils draw symmetric patterns using a variety of media to become familiar with different orientations of lines of symmetry; and recognise line symmetry in a variety of diagrams, including where the line of symmetry does not dissect the original shape.</p>




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	<p><u>Angles</u></p> <ul style="list-style-type: none">• recognise angles as a property of shape or a description of a turn• identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn;• identify whether angles are greater than or less than a right angle	<p><u>Angles</u></p> <ul style="list-style-type: none">• identify acute and obtuse angles and compare and order angles up to two right angles by size <p>Pupils compare and order angles in preparation for using a protractor and compare lengths and angles to decide if a polygon is regular or irregular.</p>
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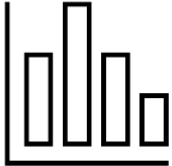


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<p>Geometry Position and direction</p> 		<p><u>Co-ordinates</u></p> <ul style="list-style-type: none">• describe positions on a 2-D grid as coordinates in the first quadrant• plot specified points and draw sides to complete a given polygon. <p><u>Translations</u></p> <ul style="list-style-type: none">• describe movements between positions as translations of a given unit to the left/right and up/down <p>Pupils draw a pair of axes in one quadrant, with equal scales and integer labels. They read, write and use pairs of coordinates, for example (2, 5), including using coordinate- plotting ICT tools</p>



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<p>Statistics</p> 	<ul style="list-style-type: none">• 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. <p>Pupils understand and use simple scales (for example, 2, 5, 10 units per cm) in pictograms and bar charts with increasing accuracy.</p>	<ul style="list-style-type: none">• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.• solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. <p>Pupils understand and use a greater range of scales in their representations. Pupils begin to relate the graphical representation of data to recording change over time.</p>
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