

**Progression of Knowledge, Skills and Vocabulary**

**Year 4**

	Number and place value	Addition and subtraction	Multiplication and Division	Fractions	Measurement	Position and Direction	Geometry: Shape	Statistics
<b>I know...</b>	<p>Each digit in a number represents a different value and can identify them all to one million.</p> <p>Ones round to tens, tens round to hundreds, hundreds round to thousands, thousands round to hundred thousands and hundred thousands round to millions.</p> <p>Numbers can be smaller than zero and how they are represented as negatives.</p> <p>Numbers can be represented as numerals and that M = 1000, C = 100, X = 10 and V = 5.</p>	<p>Problems require different methods of calculation and how column addition/subtraction is applied for larger numbers.</p> <p>Mental calculation strategies can help with additions and subtractions less than three digits.</p> <p>Inverse can be used to check problems and which calculation to select. I.e. add/subtract, subtract/subtract.</p>	<p>The short multiplication columnar method and the grid method and how to apply them.</p> <p>Short division requires the bus stop calculation.</p> <p>Factor pairs are found by dividing a number and that multiples are found by multiplying a number.</p> <p>My times tables for 1 – 12 and their division facts.</p>	<p>Fractions can be equal even if they have different denominators.</p> <p>Whole numbers can be divided/multiplied to find fractions of amounts.</p> <p>Common denominators must be used to add/subtract fractions.</p> <p>Decimal places are a continuation of a whole number and operate infinitely.</p> <p>Fractions and decimals can hold the same value and know that <math>\frac{1}{2}=0.5</math> etc.</p> <p>A whole number can be divided by 10 and 100 and how its place value may move into tenths and hundredths and how to identify them.</p> <p>A tenth follows a one, a hundredth follows a tenth and how to compare their value</p> <p>A tenth would be used to round to the nearest one</p>	<p>Metric measurements relate to one another and g/kg represent weight, cm,m,km represent distance/height and that ml,l represent capacity.</p> <p>Kilo means 1000. Cent means 100 and milli means 1000 and this can help solve problems of conversion.</p> <p>Area is the space inside a 2d shape and can be found with the squares inside.</p> <p>A pound has 100 pence and we can multiply/divide to convert between the two.</p> <p>There are 24 hours in a day, 12 months in a year, seven days in a week, 60 minutes in an hour and 60 seconds in a minute.</p>	<p>I know that: a grid must be read on the x axis followed by the y axis.</p> <p>I know that: shapes can be moved through a grid and how these move directionally, i.e. left/right, up/down whilst still retaining their original shape.</p> <p>I know that: to plot a point accurately we must plot the x coordinate before the y coordinate.</p>	<p>Triangles can be scalene, equilateral, right angle and isosceles and the differences between them.</p> <p>A right angle is 90 degrees.</p> <p>An acute angle is smaller than 90 degrees.</p> <p>An obtuse angle is bigger than 90 degrees but smaller than 180 degrees.</p> <p>Lines of symmetry can be found in the centre of a 2d shape either diagonally, vertically or horizontally and that the shape should appear identical across the line to be symmetrical.</p>	<p>Bar charts represent concrete data.</p> <p>Bar charts are used to compare data and how to interpret them accordingly.</p>

<p><b>So I can...</b></p>	<p>Count in multiples of 6, 7, 9, 25 and 1000</p> <p>Find 1000 more or less than a given number</p> <p>Count backwards through zero to include negative numbers</p> <p>Recognise the place value of each digit in a four-digit number.</p> <p>Order and compare numbers beyond 1000</p> <p>Identify, represent and estimate numbers using different representations</p> <p>Round any number to the nearest 10, 100 or 1000</p>	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p> <p>Estimate and use inverse operations to check answers to a calculation</p> <p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p>	<p>Recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></p> <p>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</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p> <p>Multiply two-digit and three-digit numbers by a one-digit number using</p>	<p>Recognise and show, using diagrams, families of common equivalent fractions</p> <p>Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</p> <p>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> <p>Add and subtract fractions with the same denominator</p> <p>Recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>Recognise and write decimal equivalents to <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math></p>	<p>Convert between different units of measure [for example, kilometre to metre; hour to minute]</p> <p>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p>Find the area of rectilinear shapes by counting squares</p> <p>Estimate, compare and calculate different measures, including money in pounds and pence</p>	<p>Describe positions on a 2-D grid as coordinates in the first quadrant</p> <p>Describe movements between positions as translations of a given unit to the left/right and up/down</p> <p>Plot specified points and draw sides to complete a given polygon.</p>	<p>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</p> <p>Identify acute and obtuse angles and compare and order angles up to two right angles by size</p> <p>Identify lines of symmetry in 2-D shapes presented in different orientations</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry.</p>	<p>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.</p> <p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p>
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	<p>Solve number and practical problems that involve all of the above and with increasingly large positive numbers</p> <p>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.</p>		<p>formal written layout</p> <p>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.</p>	<p>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</p> <p>Round decimals with one decimal place to the nearest whole number</p> <p>Compare numbers with the same number of decimal places up to two decimal places</p> <p>Solve simple measure and money problems involving fractions and decimals to two decimal places.</p>	<p>Read, write and convert time between analogue and digital 12- and 24- hour clocks</p> <p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p>			
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<b>Vocabulary I will use...</b>	Thousands, ten thousand, hundred thousand numeral one thousand more/less round to the nearest 10...100...1000 integer positive integer, positive number negative integer, negative number above zero, below zero, minus next consecutive sort, classify, property Roman numerals to 100 (I to C)	increase decrease Inverse	factor factor pair divisible by	fifth, tenth, twentieth, proportion, in every, for every, decimal, decimal fraction,  decimal point, decimal place	measurement standard unit metric unit  breadth  area  square centimetre (cm <sup>2</sup> ) square metre (m <sup>2</sup> )  pint  measuring cylinder convert  millennium  date of birth	origin coordinates north-east, north-west, south-east, south-west  (NE, NW, SE, SW)  Rotate, degree, set square  angle measurer, compasses, translation  first quadrant, plot  x and y	construct, sketch base, square-based concave, convex open, closed spherical, cylindrical,  tetrahedron, polyhedron equilateral triangle isosceles triangle scalene triangle heptagon, polygon parallelogram rhombus trapezium  line symmetry, reflect	survey questionnaire time graph interpret
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