

**Maths Progression Document**

	FS	Y1	Y2	Y3	Y4	Y5	Y6
Autumn Spring Summer Thankfulness Love Courage		Fire and Ice (T) Wild and Wonderful (L) Atlantis (C)	Fire and Ice (T) Wild and Wonderful (L) Splish, Splash, Splosh (C)	I'm in Otter Class, get me out of here! (T) Remember when (L) Tribal Tales (C) I am Warrior! (C)	Frozen Kingdom (T) Chopsticks and Lanterns (L) Home and Away (C)	Conflict (T) Eco Heroes (L) Stargazers (L) Traders and Raiders (C)	Toga-Tastic! (T) Fallen Stars (T) Survival of the fittest (L) Dream Big (C)
<b>National Curriculum Area: Number and Place Value</b>							

<p><b>PV: Counting</b></p>	<p><b>See EYFS (Mathematics) progression document for information on EYFS curriculum.</b></p>	<p>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</p> <p>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens</p> <p>given a number, identify one more and one less</p>	<p>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward</p>	<p>count from 0 in multiples of 4, 8, 50 and 100;</p> <p>find 10 or 100 more or less than a given number</p>	<p>count backwards through zero to include negative numbers</p> <p>count in multiples of 6, 7, 9, 25 and 1 000</p> <p>find 1000 more or less than a given number</p>	<p>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</p> <p>count forwards or backwards in steps of powers of 10 for any given number up to 1000 000</p>	<p>use negative numbers in context, and calculate intervals across zero</p>
<p><b>PV: Comparing Numbers</b></p>		<p>use the language of: equal to, more than, less than (fewer), most, least</p>	<p>compare and order numbers from 0 up to 100; use &lt;, &gt; and = signs</p>	<p>compare and order numbers up to 1 000</p>	<p>order and compare numbers beyond 1 000</p> <p><i>compare numbers with the same number of decimal places up to two decimal places (copied from Fractions)</i></p>	<p>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)</p>	<p>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)</p>

<b>PV: Identifying, representing and estimating</b>		identify and represent numbers using objects and pictorial representations including the number line	identify, represent and estimate numbers using different representations, including the number line	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations		
<b>PV: Reading and writing numbers</b>		read and write numbers from 1 to 20 in numerals and words.	read and write numbers to at least 100 in numerals and in words	read and write numbers up to 1 000 in numerals and in words  <i>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</i> (copied from Measurement)	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.	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Comparing Numbers)  read Roman numerals to 1 000 (M) and recognise years written in Roman numerals.	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value)
<b>PV: Understanding place value</b>			recognise the place value of each digit in a two-digit number (tens, ones)	recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)  <i>find the effect of dividing a one- or two-digit number by 10 and 100,</i>	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)  <i>recognise and use thousandths and</i>	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)  <i>identify the value of each digit to three</i>

					<i>identifying the value of the digits in the answer as units, tenths and hundredths (copied from Fractions)</i>	<i>relate them to tenths, hundredths and decimal equivalents (copied from Fractions)</i>	<i>decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places (copied from Fractions)</i>
<b>PV: Rounding</b>					round any number to the nearest 10, 100 or 1000  <i>round decimals with one decimal place to the nearest whole number (copied from Fractions)</i>	round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000  <i>round decimals with two decimal places to the nearest whole number and to one decimal place (copied from Fractions)</i>	round any whole number to a required degree of accuracy  <i>solve problems which require answers to be rounded to specified degrees of accuracy (copied from Fractions)</i>
<b>PV: Problem solving</b>			use place value and number facts to solve problems	solve number problems and practical problems involving these ideas.	solve number and practical problems that involve all of the above and with increasingly large positive numbers	solve number problems and practical problems that involve all of the above	solve number and practical problems that involve all of the above
<b>PV: Key Vocabulary</b>	Zero, ones, tens, hundreds, thousands, ten thousands, hundred thousands, millions, ten millions, hundred millions, tenths, hundredths, thousandths. Place Value, place holder, number, numerals, digits, count, equal to, least, more, more than, less than, before, after, compare, same as, order, fewest, smallest, greatest, greater, smaller, odd, even, value, partition, recombine, multiples, factors. Estimate, decimal, negative numbers, positive numbers, Roman Numerals, rounding, sequencing, approximate, difference.						

**National Curriculum Area: Addition and Subtraction**

<p><b>A&amp;S: Number bonds</b></p>	<p><b>See EYFS (Mathematics) progression document for information on EYFS curriculum.</b></p>	<p>represent and use number bonds and related subtraction facts within 20</p>	<p>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p>				
<p><b>A&amp;S: Mental calculation</b></p>		<p>add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)</p>	<p>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> <li>* a two-digit number and ones</li> <li>* a two-digit number and tens</li> <li>* two two-digit numbers</li> <li>* adding three one-digit numbers</li> </ul> <p>show that addition of two numbers can be done in any order</p>	<p>add and subtract numbers mentally, including:</p> <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>		<p>add and subtract numbers mentally with increasingly large numbers</p>	<p>perform mental calculations, including with mixed operations and large numbers</p> <p>use their knowledge of the order of operations to carry out calculations involving the four operations</p>

			(commutative) and subtraction of one number from another cannot				
<b>A&amp;S: Written methods</b>		read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	
<b>A&amp;S: Inverse operations, estimating and checking</b>			recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	estimate the answer to a calculation and use inverse operations to check answers	estimate and use inverse operations to check answers to a calculation	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
<b>A&amp;S: Problem solving</b>		solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing	solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers,	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why  Solve problems involving addition,

		number problems such as $7 = \square - 9$	quantities and measures * applying their increasing knowledge of mental and written methods  <i>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)</i>				subtraction, multiplication and division
<b>Key vocabulary</b>	Addition: add, more, plus, sum, total, altogether, increase, Subtraction: subtract, minus, leave, less, take away, difference between, decrease, fewer						
<b>National Curriculum Area: Multiplication and Division</b>							
<b>M&amp;D: Facts (Times tables)</b>	<b>See EYFS (Mathematics) progression document for information on EYFS curriculum.</b>	<i>count in multiples of twos, fives and tens (copied from Number and Place Value)</i>	<i>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value)</i>  recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including	<i>count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value)</i>  recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	<i>count in multiples of 6, 7, 9, 25 and 1000 (copied from Number and Place Value)</i>  recall multiplication and division facts for multiplication tables up to $12 \times 12$	<i>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (copied from Number and Place Value)</i>	

			recognising odd and even numbers				
<b>M&amp;D: Mental calculation</b>			show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	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 (appears also in Written Methods)	use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers  recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)	multiply and divide numbers mentally drawing upon known facts  multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	perform mental calculations, including with mixed operations and large numbers  <i>associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. <math>\frac{3}{8}</math>)</i> (copied from Fractions)
<b>M&amp;D Written calculation</b>			calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ( $\times$ ),	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	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 multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

			<p>division (<math>\div</math>) and equals (=) signs</p>	<p>numbers, using mental and progressing to formal written methods (appears also in Mental Methods)</p>		<p>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</p>	<p>divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context 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</p> <p><i>use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals))</i></p>
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<p><b>M&amp;D: Properties of numbers</b></p>					<p>recognise and use factor pairs and commutativity in mental calculations (repeated)</p>	<p>identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</p> <p>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>recognise and use square numbers and cube numbers, and the notation for squared (<sup>2</sup>) and cubed (<sup>3</sup>)</p>	<p>identify common factors, common multiples and prime numbers</p> <p><i>use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions)</i></p> <p><i>calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units such as mm<sup>3</sup> and km<sup>3</sup> (copied from Measures)</i></p>
<p><b>M&amp;D: Order of operations</b></p>							<p>use their knowledge of the order of operations to carry out</p>

							calculations involving the four operations
<b>M&amp;D: Inverse, estimating and checking</b>				<i>estimate the answer to a calculation and use inverse operations to check answers</i> (copied from Addition and Subtraction)	<i>estimate and use inverse operations to check answers to a calculation</i> (copied from Addition and Subtraction)		use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy
<b>M&amp;D: Problem solving</b>		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	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	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	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	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes  solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	solve problems involving addition, subtraction, multiplication and division  <i>solve problems involving similar shapes where the scale factor is known or can be found</i> (copied from Ratio and Proportion)

							solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates
<b>Key vocabulary</b>	Multiplication: multiply, times, lots of, groups of, repeated addition, product, multiplied by, array Division: divided by, share, divisible by, share equally, divide, group, divide into						
<b>National Curriculum Area: Fractions, Decimals and Percentages</b>							
<b>F: Counting fractions in steps</b>	<b>See EYFS (Mathematics) progression document for information on EYFS curriculum.</b>		<i>Pupils should count in fractions up to 10, starting from any number and using the 1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)</i>	count up and down in tenths	count up and down in hundredths		
<b>F: Recognising fractions</b>		recognise, find and name a half as one of two equal parts of an object, shape or quantity  recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	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	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators  recognise that tenths arise from dividing an object into 10 equal parts	recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence)	

				and in dividing one – digit numbers or quantities by 10.  recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators			
<b>F: Comparing fractions</b>				compare and order unit fractions, and fractions with the same denominators		compare and order fractions whose denominators are all multiples of the same number	compare and order fractions, including fractions >1
<b>F: Comparing decimals</b>					compare numbers with the same number of decimal places up to two decimal places	read, write, order and compare numbers with up to three decimal places	identify the value of each digit in numbers given to three decimal places
<b>F: Rounding</b>					round decimals with one decimal place to the nearest whole number	round decimals with two decimal places to the nearest whole number and to one decimal place	solve problems which require answers to be rounded to specified degrees of accuracy
<b>F: Equivalence</b>			write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise	recognise and show, using diagrams, equivalent fractions with	recognise and show, using diagrams, families of common	identify, name and write equivalent fractions of a given fraction, represented	use common factors to simplify fractions; use common multiples to express

			the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ .	small denominators	<p>equivalent fractions</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>visually, including tenths and hundredths</p> <p>read and write decimal numbers as fractions (e.g. <math>0.71 = \frac{71}{100}</math>)</p> <p>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>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 as a decimal fraction</p>	<p>fractions in the same denomination</p> <p>associate a fraction with division and calculate decimal equivalents (e.g. 0.375) for a simple fraction (e.g. <math>\frac{3}{8}</math>)</p> <p>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p>
<b>F: Addition &amp; subtraction of fractions</b>				add and subtract fractions with the same denominator	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator	add and subtract fractions with different denominators and

				<p>within one whole (e.g. <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math>)</p>		<p>and multiples of the same number</p> <p>recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number (e.g. <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math>)</p>	<p>mixed numbers, using the concept of equivalent fractions</p>
<p><b>F:</b> <b>Multiplication &amp; division of fractions</b></p>						<p>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p>	<p>multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>)</p> <p>multiply one-digit numbers with up to two decimal places by whole numbers</p> <p>divide proper fractions by whole</p>

							numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$ )
<b>F: Multiplication &amp; division of decimals</b>					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>multiply one-digit numbers with up to two decimal places by whole numbers</p> <p>multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places</p> <p>identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places</p> <p>associate a fraction with division and</p>

							<p>calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. <math>\frac{3}{8}</math>)</p> <p>use written division methods in cases where the answer has up to two decimal places</p>
<b>F: Problem solving</b>				<p>solve problems that involve all of the above</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>solve simple measure and money problems involving fractions and decimals to</p>	<p>solve problems involving numbers up to three decimal places</p> <p>solve problems which 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 with a denominator of a multiple of 10 or 25.</p>	

					two decimal places.		
<b>Key vocabulary</b>	<p>Whole, half, third, quarter, fifth, sixth, seventh, eighth, ninth, tenth. Numerator, denominator, common denominator, equivalent fraction, proper fraction, improper fraction, unit fraction, mixed number, lowest common denominator, simplify, reduce.</p> <p>Decimal, decimal fraction, decimal number, infinite decimal number, recurring decimal number, rounding, round down, round up.</p> <p>Percent, percentage %.</p>						
<b>National Curriculum Area: Ratio and Proportion</b>							
<b>R&amp;P</b>	<p><b>See EYFS (Mathematics) progression document for information on EYFS curriculum.</b></p>						<p>solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</p> <p>solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison</p> <p>solve problems involving similar</p>

							<p>shapes where the scale factor is known or can be found</p> <p>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p>
<b>Key vocabulary</b>	Fraction, one for every, percent, percentage, proportion, proportionality, ratio, scale, unequal grouping, unequal sharing.						
<b>National Curriculum Area: Measurement</b>							
<b>M: Comparing &amp; estimating</b>	<b>See EYFS (Mathematics) progression document for information on EYFS curriculum.</b>	<p>compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> <li>* lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]</li> <li>* mass/weight [e.g. heavy/light, heavier than, lighter than]</li> <li>* capacity and volume [e.g. full/empty,</li> </ul>	<p>compare and order lengths, mass, volume/capacity and record the results using &gt;, &lt; and =</p> <p>compare and sequence intervals of time</p>	<p>compare durations of events, for example to calculate the time taken by particular events or tasks</p> <p>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as</p>	<p>estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)</p>	<p>calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes (also included in measuring)</p> <p>estimate volume (e.g. using 1 cm<sup>3</sup> blocks to build</p>	<p>calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm<sup>3</sup>) and cubic metres (m<sup>3</sup>), and extending to other units such as mm<sup>3</sup> and km<sup>3</sup>.</p>

		<p>more than, less than, half, half full, quarter]</p> <p>* time [e.g. quicker, slower, earlier, later]</p> <p>sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p>		<p>a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time)</p>		<p>cubes and cuboids) and capacity (e.g. using water)</p>	
<b>M: Measuring &amp; calculating</b>		<p>measure and begin to record the following:</p> <ul style="list-style-type: none"> <li>* <b>lengths and heights</b></li> <li>* <b>mass/weight</b></li> <li>* <b>capacity and volume</b></li> <li>* <b>time</b> (hours, minutes, seconds)</li> </ul> <p>recognise and know the value of different denominations of <b>coins and notes</b></p>	<p>choose and use appropriate standard units to estimate and measure <b>length/height</b> in any direction (m/cm); <b>mass</b> (kg/g); <b>temperature</b> (°C); <b>capacity</b> (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</p>	<p>measure, compare, add and subtract: <b>lengths</b> (m/cm/mm); <b>mass</b> (kg/g); <b>volume/capacity</b> (l/ml)</p> <p>measure the <b>perimeter</b> of simple 2-D shapes</p> <p>add and subtract amounts of <b>money</b> to give change, using both £ and p</p>	<p>estimate, compare and calculate <b>different measures</b>, including <b>money in pounds and pence</b> (appears also in Comparing)</p> <p>measure and calculate the <b>perimeter</b> of a rectilinear figure (including squares) in centimetres and metres</p>	<p>use all four operations to solve problems involving measure (e.g. <b>length, mass, volume, money</b>) using decimal notation including scaling.</p> <p>measure and calculate the <b>perimeter</b> of composite rectilinear shapes in centimetres and metres</p>	<p>solve problems involving the calculation and conversion of <b>units of measure</b>, using decimal notation up to three decimal places where appropriate (appears also in Converting)</p> <p>recognise that shapes with the same areas can have different</p>

			<p>recognise and use symbols for pounds (<b>£</b>) and pence (<b>p</b>); combine amounts to make a particular value</p> <p>find different combinations of coins that equal the same amounts of money</p> <p><b>solve simple problems</b> in a practical context involving addition and subtraction of money of the same unit, including giving change</p>	in practical contexts	find the area of rectilinear shapes by counting squares	<p>calculate and compare the area of squares and rectangles 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</p> <p><i>recognise and use square numbers and cube numbers, and the notation for squared (<math>^2</math>) and cubed (<math>^3</math>) (copied from Multiplication and Division)</i></p>	<p><b>perimeters</b> and vice versa</p> <p>calculate the area of parallelograms and triangles</p> <p>calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (<math>\text{cm}^3</math>) and cubic metres (<math>\text{m}^3</math>), and extending to other units [e.g. <math>\text{mm}^3</math> and <math>\text{km}^3</math>]. recognise when it is possible to use formulae for area and volume of shapes</p>
<b>M: Telling the time</b>		tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and	read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)	solve problems involving converting between units of time	

		recognise and use language relating to dates, including days of the week, weeks, months and years	<p>face to show these times.</p> <p>know the number of minutes in an hour and the number of hours in a day. (appears also in Converting)</p>	<p>12-hour and 24-hour clocks</p> <p>estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating)</p>	<p>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting)</p>		
<b>M: Converting</b>			<p>know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time)</p>	<p>know the number of seconds in a minute and the number of days in each month, year and leap year</p>	<p>convert between different units of measure (e.g. kilometre to metre; hour to minute)</p> <p>read, write and convert time between analogue and digital 12 and 24-hour clocks</p>	<p>convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>solve problems involving</p>	<p>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</p>

					(appears also in Converting)  solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)	converting between units of time  understand and use equivalences between metric units and common imperial units such as inches, pounds and pints	to 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 (appears also in Measuring and Calculating)  convert between miles and kilometres
<b>Key vocabulary</b>	<p>Length - kilometre, metre, centimetre, millimetre, inches, feet, yards, miles.  Capacity - millilitres, centilitres, litres, fluid ounces, pints, gallons  Mass - kilograms, grams, ounces, pounds, stone  Temperature - Celsius, Fahrenheit  Time - seconds, minutes, hours, days, weeks, months, years, decade, century. O'clock, half past, quarter past, quarter to, minutes past the hour, minutes to the hour. Digital, analogue. 24 hour clock. AM, PM, time intervals.  Currency - pounds, pence.  Area, perimeter, rectilinear shape.</p>						
<b>National Curriculum Area: Geometry - Properties of Shape</b>							
PoS: Identifying	<b>See EYFS (Mathematics)</b>	recognise and name common 2-D	identify and describe the		identify lines of symmetry in 2-D	identify 3-D shapes, including	recognise, describe and build

<p>shapes &amp; their properties</p>	<p><b>progression document for information on EYFS curriculum.</b></p>	<p>and 3-D shapes, including:  * 2-D shapes [e.g. rectangles (including squares), circles and triangles]  * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].</p>	<p>properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</p> <p>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</p> <p>identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]</p>		<p>shapes presented in different orientations</p>	<p>cubes and other cuboids, from 2-D representations</p>	<p>simple 3-D shapes, including making nets (appears also in Drawing and Constructing)</p> <p>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p>
<p>PoS: Drawing &amp; constructing</p>				<p>draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them</p>	<p>complete a simple symmetric figure with respect to a specific line of symmetry</p>	<p>draw given angles, and measure them in degrees (<math>^{\circ}</math>)</p>	<p>draw 2-D shapes using given dimensions and angles</p> <p>recognise, describe and build simple 3-D shapes, including making nets (appears also</p>

							in Identifying Shapes and Their Properties)
PoS: Comparing & classifying			compare and sort common 2-D and 3-D shapes and everyday objects		compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	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	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
PoS: Angles				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 acute and obtuse angles and compare and order angles up to two right angles by size	know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles  identify: * angles at a point and one whole turn (total $360^\circ$ ) * angles at a point on a straight line	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

				<p>identify whether angles are greater than or less than a right angle</p> <p>identify horizontal and vertical lines and pairs of perpendicular and parallel lines</p>		<p>and <math>\frac{1}{2}</math> a turn (total <math>180^\circ</math>)</p> <p>* other multiples of <math>90^\circ</math></p>	
Key vocabulary	<p>2D Shapes - Circle, square, triangle, rectangle, oval, isosceles triangle, right angled triangle, equilateral triangle, scalene triangle, kite, rhombus, trapezium, parallelogram, pentagon, hexagon, heptagon, octagon, decagon, quadrilateral, polygon, regular, irregular.</p> <p>3D Shapes - sphere, cone, cube, cuboid, pyramid, triangular prism, dodecahedron, face, vertices, sides.</p> <p>Angle - obtuse, acute, right angle, reflex, straight angle, degree.</p> <p>Parallel lines, perpendicular lines.</p>						
<b>National Curriculum Area: Geometry - Position and Direction</b>							
P&D: Position, direction & movement	<p><b>See EYFS (Mathematics) progression document for information on EYFS curriculum.</b></p>	<p>describe position, direction and movement, including half, quarter and three-quarter turns.</p>	<p>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</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</p>	<p>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</p>	<p>describe positions on the full coordinate grid (all four quadrants)</p> <p>draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</p>

			anti-clockwise)		sides to complete a given polygon		
P&D: Pattern			order and arrange combinations of mathematical objects in patterns and sequences				
Key vocabulary	Co-ordinates, axis, vertices, point, translate, reflect, parallel, perpendicular, up, down, left, right, half turn, quarter turn, full turn, clockwise, anti-clockwise, rotation.						
<b>National Curriculum Area: Statistics</b>							
S: Interpreting, constructing & presenting data	<b>See EYFS (Mathematics) progression document for information on EYFS curriculum.</b>		interpret and construct simple pictograms, tally charts, block diagrams and simple tables  ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity  ask and answer questions about totalling and comparing categorical data	interpret and present data using bar charts, pictograms and tables	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	complete, read and interpret information in tables, including timetables	interpret and construct pie charts and line graphs and use these to solve problems

S: Solving problems				solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	solve comparison, sum and difference problems using information presented in a line graph	calculate and interpret the mean as an average
Key vocabulary	Pictogram, bar graph, line graph, tally chart, time graphs, data handling, collecting, continuous data, scale, average.						
<b>National Curriculum Area: Algebra</b>							
A: Equations	<b>See EYFS (Mathematics) progression document for information on EYFS curriculum.</b>	<i>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and <b>missing number problems</b> such as <math>7 = \square - 9</math></i> (copied from Addition and Subtraction)  <i>represent and use number bonds and related subtraction facts within 20</i> (copied from Addition and Subtraction)	<i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and <b>missing number problems</b>.</i> (copied from Addition and Subtraction)  <i>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</i> (copied from Addition and Subtraction)	solve problems, including <b>missing number problems</b> , using number facts, place value, and more complex addition and subtraction. (copied from Addition and Subtraction)  solve problems, including missing number problems, involving multiplication and division, including integer scaling (copied from Multiplication and Division)		<i>use the properties of rectangles to deduce related facts and find <b>missing lengths and angles</b></i> (copied from Geometry: Properties of Shapes)	express missing number problems algebraically  find pairs of numbers that satisfy number sentences involving two unknowns  enumerate all possibilities of combinations of two variables

A: Formulae					<p><i>Perimeter can be expressed algebraically as <math>2(a + b)</math> where <math>a</math> and <math>b</math> are the dimensions in the same unit.</i> (Copied from NSG measurement)</p>		<p>use simple formulae</p> <p><i>recognise when it is possible to use <b>formulae</b> for area and volume of shapes</i> (copied from Measurement)</p>
A: Sequences		<p><i>sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening</i> (copied from Measurement)</p>	<p><i>compare and sequence intervals of time</i> (copied from Measurement)</p> <p><i>order and arrange combinations of mathematical objects in patterns</i> (copied from Geometry: position and direction)</p>				<p>generate and describe linear number sequences</p>
Key vocabulary	Equation, formula, formulae, sequences, expression, variable, term to term rule, substitution, linear number sequence.						
Assessment	<p>Continual teacher assessment - daily.</p> <p>Half termly PUMA assessments.</p> <p>Half termly White Rose Arithmetic assessment.</p> <p>'Have a go' task at the beginning of each unit.</p> <p>White Rose end of unit assessments.</p>						

Value Links	<p style="text-align: center;"><b><u>Thankfulness</u></b></p> <p>I am thankful for the opportunities I have to learn and develop my number skills. I am thankful for the resources I can use in class to help me.</p>	<p style="text-align: center;"><b><u>Love</u></b></p> <p>I am supportive towards others. I will include and encourage others in all our learning. I will celebrate the success of others and my own.</p>	<p style="text-align: center;"><b><u>Courage</u></b></p> <p>I have the courage to keep going and try again. I have the courage to try new activities. I have the courage to be resilient when I find things hard.</p>
Metacognition Links	<p><b><u>EYFS and KS1</u></b></p> <p>Cooperation – I can work in pairs and small groups. Cooperation – I can share my ideas with others. Perseverance – If something is difficult, I will keep trying. Perseverance – I make good choices so I can concentrate. Independence - I can listen to and follow instructions. Motivation – I am motivated to do my best. Curiosity – I am keen to learn new skills. Creativity – I can find different ways to do things.</p>		<p><b><u>KS2</u></b></p> <p>Cooperation – I can work in pairs, small groups and teams. Cooperation – I can share my ideas and opinions with others. Cooperation – I respect and value everyone’s ideas. Perseverance – If something is difficult, I will keep trying. Perseverance – I will try my hardest from beginning to end. Independence – I will listen and follow instructions, ensuring that my behaviour is respectable and safe. Independence – I take responsibility for my learning. Independence – I try to organise myself. Motivation – I can self-motivate and motivate others. Motivation – I can challenge myself. Motivation – I always look at how I can improve Curiosity – I can ask questions to further my knowledge and understanding. Curiosity – I try to discover and problem solve for myself. Creativity - I can think deeply about problems and look at different ways to solve them. Creativity – I like to find different ways to do things.</p>

