

Pentagon Partnership Year 2 Overview



Year 2 End of Year Expectations			
Strand	Autumn	Spring	Summer
Number and Place Value	<ul style="list-style-type: none"> <li>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</li> <li>recognise the place value of each digit in a two-digit number (tens, ones)</li> <li>identify, represent and estimate numbers using different representations.</li> <li>use place value and number facts to solve problems.</li> <li>Using materials and a range of representations, pupils practise counting, reading, writing and comparing numbers to at least 100 and solving a variety of related problems to develop fluency.</li> <li>Pupils should partition numbers in different ways (for example, <math>23 = 20 + 3</math> and <math>23 = 10 + 13</math>) to support subtraction.</li> <li>They begin to understand zero as a placeholder.</li> </ul>	<ul style="list-style-type: none"> <li>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</li> <li>recognise the place value of each digit in a two-digit number (tens, ones)</li> <li>read and write numbers to at least 100 in numerals and in words (previously included reading and writing 3 digit numbers)</li> <li>compare and order numbers from 0 up to 100; use <math>&lt;</math>, <math>&gt;</math> and <math>=</math> signs</li> <li>identify, represent and estimate numbers using different representations, including the number line</li> <li>round any number to the nearest 10</li> <li>use place value and number facts to solve problems.</li> <li>Using materials and a range of representations, pupils practise counting, reading, writing and comparing numbers to at least 100 and solving a variety of related problems to develop fluency.</li> <li>They understand zero as a placeholder.</li> </ul>	<ul style="list-style-type: none"> <li>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</li> <li>recognise the place value of each digit in a two-digit number (tens, ones)</li> <li>compare and order numbers from 0 up to 100; use <math>&lt;</math>, <math>&gt;</math> and <math>=</math> signs</li> <li>use place value and number facts to solve problems.</li> <li>They count in multiples of three to support their later understanding of a third.</li> <li>As they become more confident with numbers up to 100, pupils are introduced to larger numbers to develop further their recognition of patterns within the number system and represent them in different ways, including spatial representations.</li> <li>become fluent and apply their knowledge of numbers to reason with, discuss and solve problems that emphasise the value of each digit in two-digit numbers.</li> <li>know zero as a placeholder.</li> </ul>
Addition and Subtraction	<ul style="list-style-type: none"> <li>solve problems with addition and subtraction:</li> <li>***using concrete objects and pictorial representations, including those involving numbers, quantities and measures (with number lines or jottings),</li> <li>recall and use addition and subtraction facts to 20 (previously just pairs that make 20 and facts to 10)</li> </ul>	<ul style="list-style-type: none"> <li>solve problems with addition and subtraction:</li> <li>***using concrete objects and pictorial representations, including those involving numbers, quantities and measures (with number lines or jottings),</li> <li>applying their increasing knowledge of mental and written methods including:</li> <li>a two-digit number &amp; ones</li> <li>a two-digit number and tens</li> </ul>	<ul style="list-style-type: none"> <li>solve problems with addition and subtraction:</li> <li>using concrete objects and pictorial representations, including those involving numbers, quantities and measures (with number lines or jottings),</li> <li>applying their increasing knowledge of mental and written methods including:</li> <li>a two-digit number &amp; ones</li> <li>a two-digit number and tens</li> </ul>

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	<ul style="list-style-type: none"> <li>• show that addition of two numbers can be done in any order (commutative) e.g. <math>5+2+1= 2+1+5= 1+5+2=</math> and subtraction of one number from another cannot</li> <li>• Understand subtraction as taking away or finding the difference.</li> </ul>	<ul style="list-style-type: none"> <li>• two two-digit numbers</li> <li>• adding three one-digit numbers</li> <li>• Refer to VCP for methods.</li> <li>• Finding small difference using number lines</li> <li>• recall and use addition and subtraction facts to 20 (previously just pairs that make 20 and facts to 10), and derive and use related facts up to 100 e.g. <math>3+7=10</math> so <math>30+70=100</math></li> <li>• show that addition of two numbers can be done in any order (commutative) e.g. <math>5+2+1= 2+1+5= 1+5+2=</math> and subtraction of one number from another cannot</li> <li>• Extend understanding of language to include sum and difference</li> </ul>	<ul style="list-style-type: none"> <li>• two two-digit numbers</li> <li>• adding three one-digit numbers</li> <li>• Refer to VCP for methods.</li> <li>• Finding small difference using number lines</li> <li>• recall and use addition and subtraction facts to 20 (previously just pairs that make 20 and facts to 10) fluently, and derive and use related facts up to 100 e.g. <math>3+7=10</math> so <math>30+70=100</math></li> <li>• recognise and use the inverse relationship between addition &amp; subtraction and use this to check calculations and solve missing number problems.</li> <li>• Extend understanding of language to include sum and difference</li> <li>• Pupils practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using <math>3 + 7 = 10</math>; <math>10 - 7 = 3</math> and <math>7 = 10 - 3</math> to calculate <math>30 + 70 = 100</math>; <math>100 - 70 = 30</math> and <math>70 = 100 - 30</math>. They check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (for example, <math>5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5</math>). This establishes commutativity and associativity of addition.</li> <li>• Recording addition and subtraction in columns supports place value and prepares for formal written methods with larger numbers</li> </ul>
<b>Multiplication and Division</b>	<ul style="list-style-type: none"> <li>• Use a variety of language to describe multiplication and division</li> <li>• recall and use multiplication and division facts for the 2, 5 and 10 multiplication</li> </ul>	<ul style="list-style-type: none"> <li>• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</li> </ul>	<ul style="list-style-type: none"> <li>• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</li> </ul>

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	<p>tables, including recognising odd and even numbers</p> <ul style="list-style-type: none"> <li>• Doubling and halving numbers 1-20</li> <li>• show that multiplication of two numbers can be done in any order (commutative) e.g. <math>3 \times 5 = 5 \times 3</math> and division of one number by another cannot e.g. <math>15 \div 3 \neq 3 \div 15</math></li> <li>• Begin to relate multiplication and division to fractions e.g. <math>\frac{1}{2}</math> is the same as <math>\div 2</math></li> <li>•</li> <li>• Pupils are introduced to the multiplication tables. <math>\times 2</math>, <math>\times 5</math>, <math>\times 10</math> They practise to become fluent in the 2, 5 and 10 multiplication tables and connect them to each other.</li> </ul>	<ul style="list-style-type: none"> <li>• Use a variety of language to describe multiplication and division</li> <li>• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</li> <li>• Doubling and halving numbers 1-20</li> <li>• show that multiplication of two numbers can be done in any order (commutative) e.g. <math>3 \times 5 = 5 \times 3</math> and division of one number by another cannot e.g. <math>15 \div 3 \neq 3 \div 15</math></li> <li>• Introduce the concept of remainders</li> <li>• calculate mathematical statements for multiplication and division grouping within the multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (=) signs</li> <li>• Connect the 10 multiplication table to place value, and the 5 multiplication table to the divisions on the clock face. They begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.</li> </ul>	<ul style="list-style-type: none"> <li>• Use a variety of language to describe multiplication and division</li> <li>• Counting in 3s, 4s and 8s</li> <li>• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</li> <li>• Introduce the concept of remainders</li> <li>• calculate mathematical statements for multiplication and division grouping within the multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (=) signs</li> <li>• Pupils work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. They begin to relate these to fractions and measures (for example, <math>40 \div 2 = 20</math>, 20 is a half of 40). They use commutativity and inverse relations to develop multiplicative reasoning (for example, <math>4 \times 5 = 20</math> and <math>20 \div 5 = 4</math>).</li> </ul>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Fractions</b></p>	<ul style="list-style-type: none"> <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>• Sharing and division link</li> <li>• They connect unit fractions to equal sharing and grouping, to numbers when they can be calculated, and to measures, finding fractions of lengths, quantities, sets of objects or shapes.</li> </ul>	<ul style="list-style-type: none"> <li>• write simple fractions for example, <math>\frac{1}{2}</math> of 6 = 3 and recognise the equivalence of <math>\frac{2}{4}</math> &amp; <math>\frac{1}{2}</math>.</li> <li>• Order simple fractions on a numberline.</li> <li>• Use <math>\lt</math> &amp; <math>\gt</math> with simple fractions</li> <li>• Counting in <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{3}</math> up to 10.</li> <li>• Add <math>\frac{1}{4}</math> <math>\frac{1}{3}</math> e.g. <math>\frac{1}{4} + \frac{2}{4}</math> Also, <math>1 \frac{1}{3} + \frac{1}{3} = 1 \frac{2}{3}</math></li> </ul>	<ul style="list-style-type: none"> <li>• Practical problem solving + and - fractions above - e.g. pizza, cake, chocolate bars etc.</li> </ul>

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	<ul style="list-style-type: none"> <li>• They meet as the first example of a non-unit fraction. A non-unit fraction has a numerator that isn't 1.</li> <li>• Pupils should count in fractions up to 10, starting from any number and using the <math>\frac{1}{2}</math> and <math>\frac{2}{4}</math> equivalence on the number line (for example, <math>1\frac{1}{4}</math>, <math>1\frac{2}{4}</math> (or <math>1\frac{1}{2}</math>), <math>1\frac{3}{4}</math>, 2). This reinforces the concept of fractions as numbers and that they can add up to more than one.</li> </ul>		
Ratio and Proportion	<ul style="list-style-type: none"> <li>• Recognise simple regular patterns and comment on them.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise simple regular patterns and comment on them.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise simple regular patterns and comment on them.</li> </ul>
Measurement	<ul style="list-style-type: none"> <li>• compare and order lengths and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math> (include comparison using multiples e.g twice as wide).</li> <li>• choose and use appropriate standard units to estimate and measure using standard abbreviations) length/height in any direction (m/cm); to the nearest appropriate unit, using rulers etc.</li> <li>• compare and sequence intervals of time</li> <li>• recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</li> <li>• Pupils use standard units of measurement with increasing accuracy, using their knowledge of the number system. They use the appropriate language and record using standard abbreviations.</li> </ul>	<ul style="list-style-type: none"> <li>• compare and order lengths, mass, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math> (include comparison using multiples e.g twice as wide).</li> <li>• choose and use appropriate standard units to estimate and measure using standard abbreviations); mass (kg/g); temperature (<math>^{\circ}\text{C}</math>); capacity (litres/ml) to the nearest appropriate unit, using, scales, thermometers and measuring vessels.</li> <li>• find different combinations of coins that equal the same amounts of money</li> <li>• know the number of minutes in an hour and the number of hours in a day. Comparing measures includes simple multiples such as 'half as high'; 'twice as wide'.</li> </ul>	<ul style="list-style-type: none"> <li>• compare and order lengths, mass, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math> (include comparison using multiples e.g twice as wide).</li> <li>• capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math> (include comparison using multiples e.g twice as wide).</li> <li>• choose and use appropriate standard units to estimate and measure using standard abbreviations) 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 simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. Pupils become fluent in counting and recognising coins. They read and say amounts of money confidently and use the</li> </ul>

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			<p>symbols £ and p accurately, recording pounds and pence separately.</p> <ul style="list-style-type: none"> <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>• They become fluent in telling the time on analogue clocks and recording it.</li> </ul>
<b>Geometry (Properties of Shape)</b>	<ul style="list-style-type: none"> <li>• identify and describe the properties of 2-D shapes, including the number of sides</li> <li>• identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</li> <li>• Pupils draw lines and shapes using a straight edge</li> </ul>	<ul style="list-style-type: none"> <li>• identify 2-D shapes on the surface of 3-D shapes. Pupils handle and name a wide variety of common 2-D and 3-D shapes including: quadrilaterals and polygons, and cuboids, prisms and cones, and identify the properties of each shape (for example, number of sides, number of faces. Pupils read and write names for shapes that are appropriate for their word reading and spelling.</li> <li>• compare and sort common 2-D and 3-D shapes and everyday objects. ). Pupils identify, compare and sort shapes on the basis of their properties and use vocabulary precisely, such as sides, edges, vertices and faces.</li> </ul>	<ul style="list-style-type: none"> <li>• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</li> <li>•</li> </ul>
<b>Geometry (Position and Direction)</b>		<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 a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). (for example, pupils themselves moving in turns, giving instructions to other pupils to do so, and programming robots using instructions given in right angles).</li> </ul>	<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 a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).</li> <li>• order and arrange combinations of mathematical objects in patterns and sequences</li> </ul>

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		<ul style="list-style-type: none"> <li>order and arrange combinations of mathematical objects in patterns and sequences</li> </ul>	
<b>Statistics</b>	<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 &amp; comparing categorical data.</li> </ul>		<ul style="list-style-type: none"> <li>Pupils record, interpret, collate, organise and compare information (for example, using many-to-one correspondence in pictograms with simple ratios 2, 5, 10).</li> </ul>
<b>Algebra</b>	<ul style="list-style-type: none"> <li>Counting games with different start numbers and step sizes, with support such as 100 square and bead string</li> <li>Understanding 'inverses'</li> <li>Describing a sequence, term to term, using/ understanding times tables as 'terms' of a sequence</li> </ul>		<ul style="list-style-type: none"> <li>Recording terms of a 'sequence'</li> <li>Generating +ve and -ve sequences</li> <li>Balance puzzles</li> </ul>