



Maths Programme of Study – Year 2



	Autumn	Spring	Summer
Place Value and a Sense of Number	<p>Recall and use number bonds to 20 fluently.</p> <p>Recognise the place value of each digit in a two-digit number (tens and ones).</p> <p>Read and write numbers to at least 100 in numerals.</p> <p>Compare and order numbers from 0 up to 100.</p> <p>Estimate numbers using a number line.</p> <p>Count in steps of 2 from any given whole number.</p> <p>Use place value and known number facts to solve problems.</p> <p>Count in steps of 5 from 0 forward and backward.</p> <p>Read and write numbers to at least 100 in numerals and words.</p>	<p>Generate new number facts from known facts, using 'nearly' numbers. (If $15 - 5 = 10$; then $15 - 6 = 9$).</p> <p>Count in steps of 2 or 5 from any given number.</p> <p>Count in steps of 3 from zero.</p> <p>Count in steps of 3 from zero, forwards or backward.</p>	<p>Know that the position (place) of a digit in a number determines its value. Show understanding by partitioning into hundreds, tens and ones.</p> <p>Recall (or derive) and use addition and subtraction facts to 20 and 100.</p> <p>Count in steps of 2, 3 and 5 from 0 and in 10s from any number (fwd and back).</p> <p>Compare and order numbers using $<$, $>$ and $=$.</p> <p>Know that the position (place) of a digit in a number determines its value. Show understanding by partitioning into hundreds, tens and ones. Use partitioning and Dienes to support an appreciation of the structure of calculation.</p> <p>Doubling and halving.</p> <p>Using steps of 2 to see steps of 4.</p>
Problem Solving and Reasoning	<p>Solve addition and subtraction problems using concrete and pictorial representations alongside number recordings, including in the context of money of the same unit.</p> <p>Solve problems involving multiplication and</p>	<p>Solve addition and subtraction problems using concrete and pictorial representations alongside number recordings, including in the context of money, including given change.</p> <p>Solve problems involving multiplication and</p>	<p>Use place value and number facts to solve problems involving measure and in other real life contexts, using multiple representations.</p> <p>Solve contextual problems involving</p>

	<p>division using materials, arrays and repeated addition.</p> <p>Solve addition and subtraction problems using concrete and pictorial representations alongside number recordings, including in the context of measure.</p> <p>Solve problems involving multiplication and division using materials, arrays and repeated addition, including in the context of money.</p>	<p>division using materials, arrays and repeated addition.</p> <p>Solve missing number problems for addition and subtraction using a bar model to support use of inverse.</p> <p>Solve multiplicative problems in practical contexts such as recipes (doubling, halving, five times as many, shared into three).</p>	<p>multiplication and division facts, using materials, arrays, repeated addition and known facts. Include fractions (e.g. I have one metre of ribbon, I want to cut it into five equal pieces, how long is each piece?). Reasoning problems such as 'What comes next?'</p> <p>$41+5=46$ $46+5=51$ $51+5=56$</p> <p>Developing patterning as a PS heuristic. Reasoning problems such as 'spot the mistake' with counting on or back in regular steps eg. 45,40,35,25 and 'True or false' such as I start at 3 and count in 3s. I will say 13.</p>
Calculations	<p><u>Addition and Subtraction</u></p> <p>Use and apply known number facts to 20.</p> <p>Add and subtract whole numbers using concrete and pictorial representations, including:</p> <ul style="list-style-type: none"> - a two-digit number and ones (27+3) - a two digit number and tens (27+30) <p>Add and subtract whole numbers using concrete and pictorial representations, including:</p> <ul style="list-style-type: none"> -three one-digit numbers <p>(9 + 7 + 1 = 10 + 7 ; 10 = 7 = 17)</p> <p><u>Multiplication and Division</u></p> <p>Recall and use multiplication and division facts for the 2 and 10 times tables.</p>	<p><u>Addition and Subtraction</u></p> <p>Add and subtract whole numbers using concrete and pictorial representations, including:</p> <ul style="list-style-type: none"> - two two-digit numbers with support <p>Show that the addition of two numbers can be done in any order (commutative) using groups of objects and jumps on a number line.</p> <p>Recall and use facts to 20 fluently.</p> <p>Derive and use related facts to 100.</p> <p>(3+6 = 9 ; 30+60 = 90 and 31+59 = 90 (one more, one less))</p> <p>Add and subtract two two-digit numbers with informal jottings and concrete and visual resources.</p>	<p><u>Addition and Subtraction</u></p> <p>Calculate with two digit numbers, showing an understanding of the commutative law and use of the inverse as an alternative representation using the idea of whole and part (bar models and other representations).</p> <p>When adding three or more numbers, look for pairs that are easy to add (8+5+2 is better organised as 8+2+5 to give 15 as the bond to 10 is clear.</p> <p>Using known facts to derived related facts using patterning:</p> <p>$90=100-10$ $80=100-20$</p>

	<p>Recognise odd and even numbers (using Numicon to see the even and odd shape). Know that multiplication of two numbers can be done in any order (commutative) using an array and practical materials. (2 rows of 5 is equivalent to 5 rows of 2). Recall and use multiplication and division facts for the 5x table. Calculate and record multiplication statements using x and = signs (demonstrating understanding using an array, concrete or pictorial). <u>Fractions</u> Recognise, find, name and write $\frac{1}{3}$ and $\frac{1}{4}$ of a length, shape, set of objects or quantity.</p>	<p>Recognise and use the inverse relationship between + and – to check and solve missing number problems. (use a bar model) <u>Multiplication and Division</u> Recall and use multiplication and division facts for the 5x table. Recognise odds and evens. Calculate and record multiplication statements using x and = signs (compare with repeated addition). Calculate division problems using known multiplication facts and an array. Record using \div sign. Use an array and groups of objects to show that multiplication of two numbers is commutative but division is not. <u>Fractions</u> Recognise, find, name and write fractions for $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shapes, set of objects or quantity. Calculate simple fractions of amounts such as $\frac{1}{2}$ of 6 = 3 by using concrete sharing and pictorial representations.</p>	<p>Continue Start with a different number and make a similar pattern. Which number sentences link these numbers: 100, 67, 33? Draw a bar model and show on a number-line. <u>Multiplication and Division</u> Explore patterns in multiples to develop an understanding of links and relationships to generate new facts from known. (e.g. 5x is half of 10x). Use the inverse as an alternative representation (\times/\div). Explore the similarities and difference between sharing and grouping. Use counting in 2s to identify odds (1,3,5..) and evens (2,4,6...) <u>Fractions</u> Recognise and find fractions of a length, shapes or quantity ($\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$). Describe $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ turns in terms of right angles in a practical situation such as a clock. Count in fractions up to 10 using a number line ~ use the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence to help.</p>
Measurement	<p>Find different combinations of coins that equal the same amount of money. Compare and sequence intervals of time. Compare and order lengths, record the</p>	<p>Tell and write the time to quarter to and past the hour. Draw the hands on a clock face to show these times.</p>	<p>Add and subtract money of the same unit, including giving change. Accurately draw two lines and compare the lengths using cm (draw a line that is twice</p>

	<p>results using $>$, $<$ and $=$.</p> <p>Identify and describe properties of 3-D shapes, including the number of faces, edges and vertices.</p> <p>Recognise and use symbols for £ and p.</p> <p>Combine amounts to make a particular value.</p>	<p>Know the number of minutes in an hour and hours in a day.</p> <p>Write and tell the time to 5 minutes.</p> <p>Compare and order mass and volume/capacity, introducing standard units and recording the results using $>$, $<$ and $=$.</p> <p>Choose and use appropriate standard units to estimate and measure mass (kg/g); temperature ($^{\circ}$C); capacity (l/ml), using scales, thermometers and measuring vessels ~ perhaps when cooking.</p>	<p>as long, half as long).</p> <p>Keep a diary of your day, record the time you wake up, eat breakfast....</p> <p>Compare with your friend.</p> <p>Work out how long you are in school, watch the TV, are asleep.etc. in hours and minutes.</p> <p>You have 50p in your purse. How many coins could you have, what could they be? (heuristic: being systematic, listing all possibilities).</p>
Geometry	<p>Identify and describe the properties of 2-D shapes including the number of sides and symmetry in a vertical line.</p> <p>Identify 2-D shapes on the surface of 3-D shapes (circle on a cylinder, triangle on a pyramid).</p> <p>Order and arrange combinations of mathematical objects in patterns.</p> <p>Identify and describe properties of 3-D shapes, including the number of faces, edges and vertices.</p>	<p>Use mathematical vocabulary to describe position, direction and movement (give instructions on turn and travel to other pupils, programme a Beebot.</p> <p>Compare and sort common 2-D and 3-D shapes.</p> <p>Know that rotation is a turn and know that a quarter, half and three quarter turn represent a right angle (clockwise and anti-cws).</p>	<p>Add and subtract money of the same unit, including giving change.</p> <p>Use position and direction on a grid to give a set of instructions to a pirate to find his treasure.</p>
Statistics		<p>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</p> <p>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.</p> <p>Answer questions about totals and comparison of discrete data.</p>	<p>Interpret and construct simple tables, pictograms, block diagrams and tally charts from given data (e.g. a picture of a large number of different sea creatures in a tank to be counted and categorised).</p> <p>Count and categorise small collections of items (e.g. counters or smarties). Ask and answer questions about the data and</p>

			compare with another child's data.
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