

Year Two
Mathematics Progression
Mapping

Year Two Autumn

Number and Place Value (NPV)	Addition and Subtraction (AS)	Multiplication and Division (MD)	Fractions, Decimals, Ratio and Percentages (FDRP)	Measures (MEA)	Geometry (GEO)	Statistics (STA)
Count in steps of 2 and 5 from 0, and in tens from any number, forward and backward. Example: Jack jumps in 10s along the beaded number line. Jack makes three jumps. Where does he land? Jemma jumps in 5s. Where will she land if she makes five jumps? 47, 57, 67; 91, 81, 71, 61; 23, 33, 43	Know all the pairs of numbers which make the numbers up to 10. Example: $5 = 5 + 0, 4 + 1, 3 + 2$ $8 = 8 + 0, 7 + 1, 6 + 2,$ $5 + 3, 4 + 4$ $9 = 9 + 0, 8 + 1, 7 + 2,$ $6 + 3, 5 + 4$	Begin to find doubles and near doubles of numbers to 15.		Understand the need for a standard unit. Example: We could measure with crayons, but as the crayons are all different lengths, we do not know if the item is 10 long crayons long or 10 short crayons long. We need all the crayons to be the same length.	Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line. Example: Triangle: three straight sides, no right angles, has line symmetry Pentagon: five straight sides, no right angles, has line symmetry.	Sort objects using Venn diagrams and two-way Carroll diagrams and understand the overlap in a Venn diagram. Example: Sort 2D shapes in a Venn diagram: Symmetrical / Triangles / Both / Neither
Begin to compare and order numbers from 0 to 100 using <, > and = signs, and work systematically to find all possible inequalities. Example: $85 > 44$ $27 < 51$ Children write the numbers 23, 57, 84 and 75 in order from smallest to largest. They then write as many inequalities as they can using these four numbers.	Begin to understand the inverse relationship between addition and subtraction. Example: $5 + 4 = 9$, so $9 - 5 = 4$ $2 + 6 = 8$, so $8 - 2 = 6$ $2 + 5 = 7$, so $7 - 2 = 5$	Count in 2s, 5s and 10s from 0 to learn multiples of 2, 5 and 10.		Begin to know whether to measure in cm or m. Example: Do you think it would be good to measure the length of your finger in metres? Why not? What would be better?	Compare and sort common 2D shapes and everyday objects.	
Locate and place 1- and 2-digit numbers on a beaded and landmarked line and a 1-100 square.	Solve problems with addition and subtraction applying their increasing knowledge of mental and written methods.			Begin to estimate and measure in cm. Example: What might be smaller than 1 cm long? Between 1 cm and 5 cm long?	Use mathematical vocabulary to describe position, direction and movement including movement in a straight line. Example: Turn a half turn clockwise. Take a step to the left. Move three steps backwards.	
Begin to recognise the place value of each digit in a 2-digit number and find and record all possible amounts using a given number of 10p and 1p coins. Example: $45 = 40 + 5$, four 10s and five 1s $36 = 30 + 6$, three 10s and six 1s	Say all bonds to 10 and know them by heart. Example: $10 = 10 + 0, 9 + 1, 8 + 2, 7 + 3, 6 + 4, 5 + 5$			Begin to estimate and measure in m. Example: How long do you think the classroom might be? Is the length less than 5 m, between 5 and 10 m or more than 10 m? Is a car more than 1 m long or less than 1 m long?	Distinguish between rotation as a turn and in terms of right angles for quarter, half and three quarter turns (clockwise and anticlockwise).	
	Use number facts to solve related subtractions. Example: Use $9 - 4$ to work out $39 - 4$ and $99 - 4$ Use $7 - 5$ to work out $27 - 5$ and $47 - 5$ Use $6 - 3$ to work out $36 - 3$ and $27 - 3$			Combine amounts to make a particular value up to £1.00. Example: $10p + 2p + 2p = 14p$ $10p + 10p + 5p = 25p$		

	<p>Begin to write word problems and relate known number bonds to context-based problems.</p> <p>Example: A bird lays 10 eggs. A snake sneaks up to the nest and steals three eggs. How many are left? A superhero has been trapped by her enemy who plans to take all her super powers. The enemy knows six of the superhero's super powers. The hero has ten powers in total. How many more powers does she have?</p>			<p>Find different combinations of coins that equal the same amounts of money up to £1.00.</p>
	<p>Recognise and work out multiple of 10 bonds to 100, using bonds to 10.</p> <p>Example: $10 = 10 + 0, 9 + 1, 8 + 2, 7 + 3, 6 + 4, 5 + 5$ $100 = 100 + 0, 90 + 10, 80 + 20, 70 + 30, 60 + 40, 50 + 50$</p>			
	<p>Show that addition of two numbers can be done in any order (commutative).</p> <p>Example: $5 + 2 = 2 + 5$ $18 + 2 = 2 + 18$ $45 + 21 = 21 + 45$</p>			
	<p>Recall and use addition and subtraction facts to 20 fluently.</p> <p>Example: $20 = 20 + 0, 19 + 1, 18 + 2, 17 + 3, 16 + 4, 15 + 5, 14 + 6, 13 + 7, 12 + 8, 11 + 9, 10 + 10$</p>			
	<p>Use number facts to solve related additions and begin to think and record systematically.</p> <p>Example: Use 5 + 3 to work out 25 + 3 and 85 + 3 Use 4 + 7 to work out 14 + 7 and 34 + 7 Use 6 + 4 to work out 16 + 4 and 16 + 5</p>			
	<p>Add and subtract mentally a 2-digit number and tens, including adding or subtracting 10 to and from any number up to 100 (positive answers only).</p> <p>Example: $43 + 10$ $51 + 30$ $62 - 10$ $47 - 20$</p>			
	<p>Solve problems with addition and subtraction using concrete objects and pictorial representations.</p> <p>Example: Work out 44p + 21p by using and counting coins.</p>			
	<p>Begin to add and subtract two 2-digit numbers by counting on or back in 10s and 1s.</p>			

Year Two Spring

<p>Estimate a quantity, less than 100, within given ranges.</p> <p>Example: Are there 0–10, 11–20, 21–50 or 51–100? Are there 0–10, 11–25, 26–50, 51–75 or 76–100?</p>	<p>Use bonds to 10 and 20 to subtract from 10 and 20.</p> <p>Example: $10 - 6 = 4$ $20 - 9 = 11$ $20 - 14 = 6$</p>	<p>Double numbers to double 15 and find related halves.</p> <p>Example: $6 + 6 = 12$ Half of 14 is 7. Double 11 is 22.</p>	<p>Understand mixed numbers and place halves on a number line.</p> <p>Example: One whole and one half = $1 \frac{1}{2}$ Four wholes and one quarter = $4 \frac{1}{4}$ Three wholes and one half = $3 \frac{1}{2}$</p>	<p>Find change from 10p and 20p, £10 and £20, by counting up in ones and knowing bonds to 10 and 20.</p> <p>Example: $7p + 3p = 10p$ $12p + 8p = 20p$ $£17 + £13 = £20$</p>	<p>Identify and describe the properties of 3D shapes including the number of edges, vertices and faces.</p> <p>Example: Cube: twelve edges, eight vertices, six faces Cylinder: two edges, no vertices, three faces</p>	<p>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.</p> <p>Example: Construct a block graph showing how many times each child in the class can write their name in one minute.</p>
<p>Locate and place 2-digit numbers on a landmark line and a 1-100 square and use this knowledge to compare and order numbers.</p>	<p>Solve missing number problems involving the inverse relationship between addition and subtraction.</p> <p>Example: Use $10 - 4 = 6$ to work out $\square + 4 = 10$ $5 + 2 = 7$ so $7 - 5 = 2$, so $27 - 5 = 22$ $5 + 3 = 8$ so $8 - 5 = 3$ so $38 - 5 = 33$</p>	<p>Recognise odd and even numbers.</p> <p>Example: Even numbers end in 0, 2, 4, 6 or 8 Odd numbers end in 1, 3, 5, 7 or 9</p>	<p>Recognise, find, name and write fractions $\frac{1}{3}$ and $\frac{2}{3}$ of a shape.</p>	<p>Tell and write the time quarter past/to the hour on analogue and digital clocks and draw the hands on a clock face to show these analogue times.</p> <p>Example: Quarter to 5 8:15</p>	<p>Identify 2D shapes on the surface of 3D shapes; for example, a circle on a cylinder and a triangle on a pyramid.</p> <p>Example: A square and a rectangle on a cuboid. A circle on a cone.</p>	
<p>Recognise the place value of each digit in a 2-digit number.</p> <p>Example: $21 = 20 + 1$, two 10s and one 1 $55 = 50 + 5$, five 10s and five 1s $82 = 80 + 2$, eight 10s and two 1s</p>	<p>Add numbers using concrete objects and pictorial representations, e.g. number lines, to add 1- and 2-digit numbers.</p> <p>Example: Work out $52 + 16$ on a bead string by counting on one 10 (to 62) and then six 1s (63, 64, 65, 66, 67, 68). So $52 + 16 = 68$</p>	<p>Begin to know the 2, 5 and 10 times tables and investigate multiplications with the same answer.</p> <p>Example: $1 \times 2 = 2$, $2 \times 2 = 4$, $3 \times 2 = 6$, $4 \times 2 = 8 \dots$ $1 \times 5 = 5$, $2 \times 5 = 10$, $3 \times 5 = 15$, $4 \times 5 = 20 \dots$ $1 \times 10 = 10$, $2 \times 10 = 20$, $3 \times 10 = 30$, $4 \times 10 = 40$ $2 \times 10 = 20$; $4 \times 5 = 20$; $10 \times 2 = 20$</p>	<p>Recognise, find, name and write fractions $\frac{1}{4}$ and $\frac{2}{4}$ ($\frac{1}{2}$) of a shape.</p>	<p>Know units of time: minutes, hours, days, weeks, months and years.</p>	<p>Compare and sort common 3D shapes and everyday objects.</p>	
<p>Round 2-digit numbers to the nearest 10.</p> <p>Example: 42 rounds to 40 25 rounds to 30 67 rounds to 70</p>	<p>Add mentally two 2-digit numbers by counting on in 10s and 1s.</p> <p>Example: To work out $65 + 23$, start with 65 and count on 20 in 10s, then add 3. To work out $71 + 16$, start with 71 and count on 10 in 10s, then add 6. To work out $34 + 33$, start with 34 and count on 30 in 10s, then add 4.</p>	<p>Calculate mathematical statements for multiplication within the multiplication tables, to go with hops on number lines and with arrays, and write them using the multiplication (\times), division (\div) and equals (=) signs.</p> <p>Example: A two by five array shows $2 \times 5 = 10$ Three hops of 5 show $3 \times 5 = 15$ Seven hops of 10 show $7 \times 10 = 70$</p>	<p>Recognise, find, name and write fractions $\frac{2}{4}$ ($\frac{1}{2}$) of a set of objects or quantity, including finding half of odd numbers.</p> <p>Example: Half of 16 is 8. Half of 15 is $7 \frac{1}{2}$. Half of 68 is 34.</p>	<p>Know the relationship between seconds and minutes and minutes and hours, including the number of minutes in an hour and the number of hours in a day.</p>	<p>Order and arrange combinations of mathematical objects, including 2D and 3D shapes, in repeating patterns and sequences.</p>	

	<p>Add and subtract 10 in order to add or subtract 9 or 11 to and from a 2-digit number.</p> <p>Example: Use $45 + 10$ to work out $45 + 9$ or $45 + 11$ Use $74 + 10$ to work out $74 + 9$ or $74 + 11$ Use $28 - 10$ to work out $28 - 9$ or $28 - 11$</p>	<p>Arrange objects into arrays, write the corresponding multiplication and investigate all possible arrays for a given number of cubes.</p> <p>Example: Children use 12 interlocking cubes to make as many different arrays as they can. Repeat for 18 cubes and then for 24 cubes.</p>	<p>Count in steps of $\frac{1}{2}$ and $\frac{1}{4}$.</p>	<p>Recognise and use symbols for pounds (£) and pence (p) with no zeros in the 10p place and use coins to solve simple problems involving addition.</p> <p>Example: $65p + 32p$ $25p + 59p$ $27p + 67p$</p>		
	<p>Use place value and number facts to solve problems, for example using bonds to 10 to find complements to the next multiple of 10.</p> <p>Example: $36 + \square = 40$ $45 + \square = 50$ $78 + \square = 80$</p>	<p>Begin to write divisions as multiplications with a missing number.</p> <p>Example: $12 \div 4 = \square$, $\square \times 4 = 12$ $15 \div 3 = \square$, $3 \times \square = 15$ $14 \div 2 = \square$, $\square \times 2 = 14$</p>		<p>Recognise and know the values of all coins and notes up to £20.</p> <p>Example: 1p, 2p, 5p, 10p, 20p, 50p, £1, £2, £5, £10, £20</p>		
		<p>Understand division as grouping.</p> <p>Example: $\square \times 2 = 10$: ten socks divided into pairs will make five pairs. $\square \times 6 = 30$: thirty pencils divided into pots of six pencils will fill five pots. $\square \times 4 = 24$: twenty-four buns divided into packs of four will make six full packs.</p>		<p>Find all possible amounts using three coins (1p–£2).</p> <p>Example: Children find all the possible amounts with three coins of different colours; gold, silver and copper (not including 5p).</p>		
		<p>Solve problems involving multiples of 2, 5 and 10 in a practical context, using coins and objects.</p> <p>Example: There are two baby birds sitting in each nest. There are three nests in the tree. How many baby birds? There are 10 petals on each flower. There are four flowers. How many petals? An apple costs 12p. If you only had two pence coins, how many would you need to pay for the apple?</p>				

Year Two Summer

<p>Identify, represent and estimate numbers using different representations, including the number line; beginning to move beyond 100.</p>	<p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.</p> <p>Example: $45 + 21$ is the same as $21 + 45$, but $45 - 21$ is not the same as $21 - 45$ $12 + 47$ is the same as $47 + 12$, but $12 - 47$ is not the same as $47 - 12$</p>	<p>Recall and use multiplication and division facts for the 2, 5, and 10 times-tables.</p> <p>Example: $20 \div 2 = \square$</p> <p>Sam has four 5p coins. How much money does he have? Scarlet has saved 10p a week for six weeks. How much has she saved?</p>	<p>Recognise, find, name and write fractions $\frac{1}{4}$ and $\frac{2}{4}$ ($\frac{1}{2}$), and begin to recognise, find, name and write $\frac{1}{3}$ and $\frac{3}{4}$, of a set of objects or quantity.</p> <p>Example: $\frac{3}{4}$ of 16 = 12 $\frac{1}{3}$ of 12 = 4</p>	<p>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass/weight (kg/g); temperature ($^{\circ}\text{C}$); capacity (l/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels.</p> <p>Example: A bag of flour weighs 1 kg. How long is your hand in cm?</p>		<p>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity, and ask and answer questions about totalling and comparing categorical data.</p> <p>Example: Create a pictogram showing how children in our class like to come to school and use it to answer questions such as: How many children prefer to walk?</p>
<p>Compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs.</p>	<p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p> <p>Example: $32 + 54 = 86$, so $86 - 32 = 54$ $22 + 75 = 97$, so $97 - 75 = 22$ $53 + 33 = 86$, so $87 - 53 = 33$</p>	<p>Calculate mathematical statements for multiplication and division within the multiplication tables, to go with hops on number lines and with arrays, and write them using the multiplication (\times), division (\div) and equals ($=$) signs.</p> <p>Example: A four by three array shows $4 \times 3 = 12$ A five by four array shows $5 \times 4 = 20$</p>	<p>Write simple fractions.</p> <p>Example: $\frac{1}{2}$ of 6 = 3 $\frac{1}{4}$ of 12 = 3 $\frac{1}{3}$ of 12 = 4</p>	<p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.</p> <p>Example: I buy something for £6 and I pay with a £10 note. How much change do I get?</p>		
<p>Use place value and number facts to solve problems.</p> <p>Example: $47 - 39 = \square$ $50\text{p} - 37\text{p} = \square$</p> <p>There are 17 cars in a car park and 3 more cars arrive. How many cars?</p>	<p>Subtract mentally two 2-digit numbers, including working out small differences between two 2-digit numbers using knowledge of complements to 10 and place value.</p> <p>Example: $60 - 52$ by adding 8 $52 - 46$ by counting up from 46 to 50, to 52 $66 - 32$ by counting back 30, and then 2</p>	<p>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.</p> <p>Example: $3 \times 6 = 18$ is the same as $6 \times 3 = 18$ but $18 \div 3$ is not the same as $3 \div 18$ $3 \times 9 = 27$ is the same as $9 \times 3 = 27$ but $27 \div 9$ is not the same as $9 \div 27$</p>	<p>Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.</p> <p>Example: $1 \frac{2}{4} = 1 \frac{1}{2}$</p>	<p>Recognise and use symbols for pounds (£) and pence (p) and find more than one way to solve a money problem (£1, 10p and 1p coins).</p> <p>Example: Children investigate what amounts of money they can make using five coins from piles of £1, 10p and 1p coins. What is the largest amount of money you can make? And the smallest?</p>		
<p>Count in steps of 3 from 0, forward and backward.</p> <p>Example: Jamal jumps in 3s. Where will Jamal be after five jumps? Where will he be after seven jumps? How many jumps will Jamal need to...</p>	<p>Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving quantities and measures.</p> <p>Example: $50 - 46$ $43 - 38$ $54\text{p} + 73\text{p}$</p>	<p>Solve problems involving multiplication and division using materials, arrays, repeated addition, 'clever counting', mental methods and multiplication and division facts, including problems in contexts.</p> <p>Example: The monsters have five legs each. There are 25 shoes. How many...</p>	<p>Find a quarter of numbers, up to 40, by halving twice.</p> <p>Example: $\frac{1}{4}$ of 20 = 5 $\frac{1}{4}$ of 24 = 6 $\frac{1}{4}$ of 40 = 10</p>	<p>Compare and order lengths, mass and capacities and record the results using $>$, $<$ and $=$.</p> <p>Example: Pencil 12 cm $>$ crayon 8 cm Apple 100 g $<$ potato 200 g 1000 g = 1 kg</p>		

<p>Begin to see that when counting from 100–200, the numbers replicate the pattern from 0–100.</p>	<p>Subtract numbers using concrete objects and pictorial representations, e.g. number lines, to subtract 1- and 2-digit numbers (positive answers only).</p> <p>Example: Work out $76 - 35$ using Fly on the 100-square to count back three 10s first (to 46) and then five 1s (45, 44, 43, 42, 41). So $76 - 35 = 41$.</p>	<p>Solve missing number multiplications by counting up in steps.</p> <p>Example: $\square \times 2 = 14$ $\square \times 5 = 20$ $\square \times 3 = 12$</p>		<p>Tell and write the time to 5 minutes past the hour on analogue and digital clocks and draw the hands on a clock face to show these analogue times.</p> <p>Example: Five minutes past 8 2:30 Six forty-five</p>
<p>Begin to recognise the place value of each digit in a 3-digit number.</p> <p>Example: $457 = 400 + 50 + 7$, four 100s, five 10s and seven 1s $214 = 200 + 10 + 4$, two 100s, one 10 and four 1s $739 = 700 + 30 + 9$, seven 100s, three 10s and nine 1s</p>	<p>Add mentally a 2-digit number and ones, including adding any 1-digit number to a 2-digit number using number facts or bridging 10.</p> <p>Example: $34 + 3$ $34 + 7$ $38 + 6$</p>	<p>Double and halve multiples of 10 and 5 and 2-digit numbers ending in 1, 2, 3 or 4, answers less than 100.</p> <p>Example: Double 15 is 30. Double 40 is 80. Double 23 is 46.</p>		<p>Tell and write the time to 5 minutes to the hour on analogue and digital clocks and draw the hands on a clock face to show these analogue times.</p> <p>Example: Twenty minutes to 3 Ten to 4 1:35</p>
<p>Read and write numbers to at least 100 in numerals and in words.</p>	<p>Subtract mentally a 2-digit number and ones, including subtracting any 1-digit number from a 2-digit number using number facts or bridging 10.</p> <p>Example: $45 - 8$ $65 - 6$ $72 - 3$</p>	<p>Count in 3s, multiply and divide by 3 using arrays, representations and concrete objects, and begin to know the 3 times table.</p> <p>Example: $1 \times 3 = 3$, $2 \times 3 = 6$, $3 \times 3 = 9$, $4 \times 3 = 12 \dots$</p>		<p>Find the time 10 minutes later; use 10 minutes as an interval of time; begin to compare and sequence intervals of time.</p> <p>Example: 5:45, 5:55 9:30, 9:40 6:10, 6:20</p>
	<p>Add mentally two 2-digit numbers, using partitioning and number facts.</p> <p>Example: $31 + 26 = 50 + 7 = 57$ $38 + 47 = 70 + 15 = 85$ $76 + 16 = 80 + 12 = 92$</p>	<p>Use mathematical reasoning to identify and explain patterns and use these to predict answers.</p> <p>Example: 3×2, 3×3, 3×4, 3×5, 3×10 4×2, 4×3, 4×4, 4×5, 4×10 5×2, 5×3, 5×4, 5×5, 5×10</p>		
	<p>Subtract mentally two 2-digit numbers, including subtracting one 2-digit number from another by counting back in 10s and 1s, not crossing 10s.</p>	<p>Understand that division and multiplication are inverse operations.</p> <p>Example: $9 \div 3 = 3$ and $3 \times 3 = 9$ $5 \times 3 = 15$ and $15 \div 3 = 5$ $7 \times 5 = 35$ and $35 \div 5 = 7$</p>		

Add mentally three 1-digit numbers, using known number facts and doubles.

Example:

$$7 + 5 + 3$$

$$8 + 4 + 8$$

$$7 + 9 + 1$$

Understand subtraction as difference and find this by adding to the next multiple of 10, using bonds to 10.

Example:

$$40 - 36 \quad (36 + 4 = 40)$$

$$30 - 27 \quad (27 + 3 = 30)$$

$$90 - 84 \quad (84 + 6 = 90)$$

Use addition and subtraction and number bonds to 10 and 20 to solve problems in number stories.

Example:

Six baby elephants follow four adult elephants. How many elephants?

$$6 + 4 = 10$$

Oscar bakes 8 cakes and Lukas bakes 12 cakes. How many cakes? $8 +$

$$12 = 20$$

Derive and use related facts up to 100.

Example:

$$70 + 30$$

$$65 + 35$$

The temperature is 83°C. How much does the temperature need to rise by to reach 100°C?