



St John's Mathematics Calculation Policy

Year 1

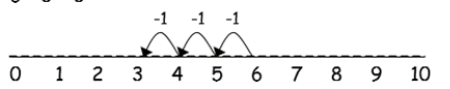
Addition

Year Group	Number Facts Pupils should be taught to:	Written Calculations and Appropriate Models and Images to Support Conceptual Understanding	
1	<ul style="list-style-type: none"> Represent and use number bonds and related subtraction facts within 20 (rapid recall) Children to understand that addition can be done in any order (commutative) 	<p>Children are encouraged to count on using practical resources e.g. using fingers, cubes, Numicon, beads to solve addition sentences including missing numbers. Children to record their number sentence.</p> <p>Children to draw pictorially to solve addition problems. Children to use base 10 apparatus (e.g. egg boxes) to solve number facts up to 20 including bridging through 10 e.g. $8+4=$ Children to record their number sentence.</p> <p>Children to use a number line to count on in ones. They also use to bridge through 10 in larger jumps applying knowledge of number facts</p> <p>Children to add by partitioning e.g. $2 + 4 = 6$ $12 + 4 = 16$</p> <p>Children to solve number sentences involving missing numbers and where the number sentence starts with the answer e.g. $15 = 10 + 5$</p>	<p>Visual models for addition including dot grids, abacus, egg boxes, number lines, and number bonds.</p> <p>Equations: $5 + 2 = 7$, $3 + 1 = 4$, $8 + 5 =$, $9 + 6 = 15$</p> <p>Missing number problems: $5 + \square = 11$ $8 + \square = 12$</p>

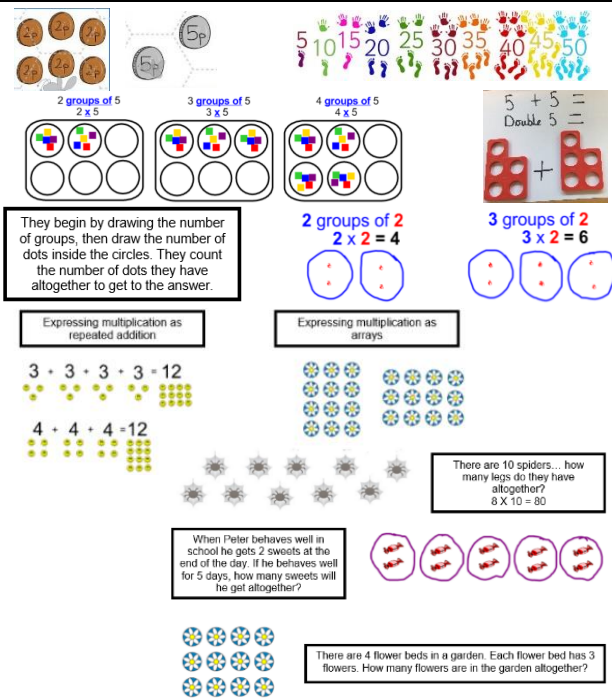
Subtraction

Year Group	Number Facts Pupils should be taught to:	Written Calculations and Appropriate Models and Images to Support Conceptual Understanding	
1	<ul style="list-style-type: none"> Represent and use number bonds and related subtraction facts within 20 (rapid recall) Understand that subtraction must have the largest number first 	<ul style="list-style-type: none"> Children are encouraged to count back using practical resources e.g. using fingers, cubes, Numicon, beads to solve subtraction sentences including missing number. Children to draw pictorially to solve subtraction problems. 	<p>Visual models for subtraction including cubes, fingers, and number bonds.</p> <p>Equations: $20 - 5 = ?$, $20 - ? = 5$, $8 - 3 =$, $20 - \square = 10$</p>



		<ul style="list-style-type: none"> Children to subtract using a number line starting with the largest number and counting back in ones (subtracting a one digit number) The number line should also be used to show that $6 - 3$ means the 'difference between 6 and 3' or 'the difference between 3 and 6' and how many jumps they are apart. Children to use base 10 apparatus e.g. egg boxes to bridge through 10. Children to also show on a number line. Children to use their knowledge of place value to partition a number to subtract 1 digit from 2 digit. 	<p>$6 - 3 = 3$</p>  <p>$6 - 4 =$ $6 - 4 = 2$ so $16 - 4 = 12$</p>
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Multiplication

Year Group	Number Facts Pupils should be taught to:	Written Calculations and Appropriate Models and Images to Support Conceptual Understanding	
1	<ul style="list-style-type: none"> Children count in steps of 2, 5 and 10 	<ul style="list-style-type: none"> Children to use numicon and other appropriate resources to count in 2s, 5s and 10s Children to use laminated sheets with circles (groups) on them, children group objects using the correct mathematical vocabulary. Children to begin to use jottings of simple multiplication with the associated vocabulary. Children to use numicon, cubes, beads, and any other appropriate apparatus. Children are exposed to the different ways in which multiplication can be expressed using the concrete materials and linking it to real life situations. They <u>begin</u> to understand that repeated addition can also be expressed as multiplication using concrete materials. Children begin to commit multiples of 2, 5, 10 to memory and use these facts to solve problems Children will draw their own arrays using dots to represent objects. 	 <p>2 groups of 5 $2 \times 5 = 10$</p> <p>3 groups of 5 $3 \times 5 = 15$</p> <p>4 groups of 5 $4 \times 5 = 20$</p> <p>5 + 5 = Double 5 =</p> <p>They begin by drawing the number of groups, then draw the number of dots inside the circles. They count the number of dots they have altogether to get to the answer.</p> <p>Expressing multiplication as repeated addition $3 + 3 + 3 + 3 = 12$ $4 + 4 + 4 = 12$</p> <p>Expressing multiplication as arrays $2 \times 2 = 4$ $3 \times 2 = 6$</p> <p>There are 10 spiders... how many legs do they have altogether? $8 \times 10 = 80$</p> <p>When Peter behaves well in school he gets 2 sweets at the end of the day. If he behaves well for 5 days, how many sweets will he get altogether?</p> <p>There are 4 flower beds in a garden. Each flower bed has 3 flowers. How many flowers are in the garden altogether?</p>



Division

Year Group	Number Facts Pupils should be taught to:	Written Calculations and Appropriate Models and Images to Support Conceptual Understanding
1	<ul style="list-style-type: none"> Children count in steps of 2, 5 and 10 	<ul style="list-style-type: none"> Children to use Numicon, cubes, beads, and any other appropriate apparatus to share amounts within 20. They will then be able to group within 20. Children to share objects practically Children use grouping to solve problems involving division. With the help of laminated sheets children place the given number of objects into groups using the correct mathematical vocabulary. Grouping with the use of jottings. Children first draw the total number of items using dots, then put circles around the given number of dots. They count the number of groups to obtain an answer. Children will draw their own arrays using dots to represent objects. <div data-bbox="1523 327 2116 877"> </div>

