



St. Mary's Calculation Policy KS1: ADDITION: Summer 2020

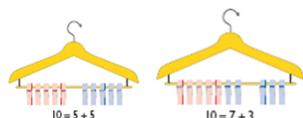
<p><b>EYFS</b></p> <p><b>Appendix 2:</b> Pupil target grids</p>	<p><b>Reception: ELG</b> Numbers to 20: place them in order and say which number is one more or one less than a given number . Using quantities and objects, <b>they add</b> and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.</p> <p><b>Exceeding:</b> Estimation and checking quantities by counting up to 20. Combining groups of 2, 5 or 10 or sharing into equal groups.</p>	
<p>Year</p>	<p>1</p>	<p>2</p>
<p>Layers of vocabulary</p>  <p><b>Appendix 1a</b> Beck's Tiers of Vocabulary</p> <p><b>Appendix 1b:</b> Vocabulary book</p>	<p><b>Basic to subject specific (Beck's Tiers):</b> +, add, more, plus, make, sum, total, altogether, score, double, near double, one more, two more... ten more... <b>How many more to make...? How many more is... than...? How much more is...?</b></p> <p><b>Instructional vocabulary:</b> start from, start with, start at, look at, point to, show me...</p> <p><b>NFER– language of tests and questions</b> match, tick, draw, complete, write, circle, share, jumps, count on, use a ruler</p>	<p><b>Basic to subject specific (Beck's Tiers):</b> +, add, addition, more, plus, make, sum, total, altogether, score, double, near double, one more, two more... ten more... one hundred more... how many more to make...? <b>How many more is... than...? How much more is...?</b></p> <p><b>Instructional vocabulary:</b> tell me, describe, name, pick out, discuss, talk about, explain, explain your method, explain how you got your answer, give an example of... show how you...</p> <p><b>NFER– language of tests and questions</b> tick, match, count, tick two, circle, write, draw, complete, use these numbers, shade, write, make, choose, circle the three, complete, write, tick all, complete the number sentence, put a digit, <b>How many...?</b></p>
<p>NC 2014</p>	<p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.</p>	<p>Recording addition in columns supports place value and prepares for formal written methods with larger numbers.</p>
	<p>Concrete, pictorial, abstract</p>	<p>Concrete, pictorial, abstract</p>



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Developing Conceptual/ Procedural Understanding

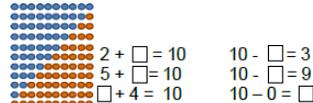
**Number bonds**



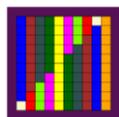
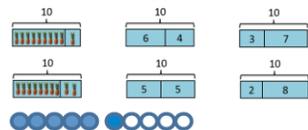
We have 10 pegs on the coathangers, how can we split them into 2 groups? Is there another way? How can we be sure we have got them all?



Numicon Ten Frame



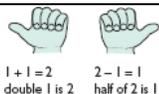
Use the pattern to complete the number sentences.



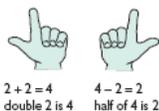
Use bonds of 10 to calculate bonds of 20.

$6 + 4 = 10$

$16 + \_\_\_\_ = 20$



$1 + 1 = 2$  double 1 is 2  
 $2 - 1 = 1$  half of 2 is 1



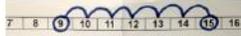
$2 + 2 = 4$  double 2 is 4  
 $4 - 2 = 2$  half of 4 is 2



Count all

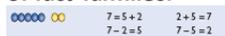


Count on

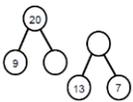
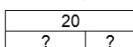


Count on, on number track in 1s.

Develop knowledge of fact families.



**Whole-part model**



Fill in the missing numbers

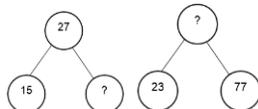
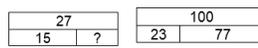
Balance image for concept of equality.



**Multilink /unifix**

Picture

**Whole-part model**



Fill in the missing numbers

All answers to be recorded in a number sentence following any informal recording.

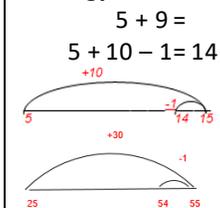
**Adding more than two numbers**

Strategy to include looking for facts or bonds that are useful e.g. bonds up to and including 10, doubles or adding 10 to a given number.

$6 + 3 + 4 = 13$   
 $6 + 3 + 4 + 7 + 2 = 22$

Children to show notation.

**Adjustment strategy**



(Round and adjust) **Doubles then near doubles**

$5 + 6 =$   
 $5 + 5 + 1 = 11$

$7 + 8 =$   
 $8 + 8 - 1 = 15$

$47 + 50 =$

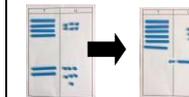
**Re-arranging**

Tell me what you know about 4, e.g. 3+1, 2+2  
 $18 + 4 =$  Rearrange the 4 into 2+2  
So  $18 + 2 + 2 = 20 + 2 = 22$

**Partition and recombine**

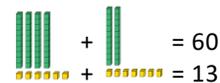
Record partitioned steps in number sentences then add mentally.

$40 + 20 = 60$   
 $6 + 7 = 13$   
 $60 + 13 = 73$   
Moving on to:  
 $46 + 27 = 60 + 13 = 73$



Tens and units – exchanging

$46 + 27 = 73$



**Balance in the equation**

$14 = 8 + 6$ ,  $7 + 6 = 8 + 5$   
 $\square = 13 + 9$   
 $3 + \square + 6 = 16$   
 $14 + \diamond = 15 + 27$



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					$59+24 =$ Partition the 24 into 20 +4 and rearrange the 4 into 1+3. So $59+24 =$ $59+20+1+3$ $=$ $59+1+20+3$ $= 83$	<b>Decision making</b>  Using statements such as: Ben did $14 + 9 = 23$ How could he have done it?
Known facts	Represent & use number bonds and related subtraction facts within 20 Add and subtract 1 digit and 2 digit numbers to 20, including zero.		Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.			
Essential Knowledge	1 more	Number bonds: 5 and 6	10 more	Number bonds: 20, 12 and 13		
	Largest number first	Number bonds: 7 and 8	Add 1 digit to 2 digit by bridging	Number bonds: 14 and 15		
	Add 10	Number bonds: 9 and 10	Partition second number and add tens then ones	Number bonds: 16 and 17		
	Ten plus ones	Use number bonds of 10 to derive bonds of 11	Add 10 and multiples of 10	Number bonds: 18 and 19		
	Doubles up to 10	Use number bonds to 20	Doubles up to 20 and multiples of 5	Partition and recombine		
			Add near multiples of 10			