

St. Mary's Catholic Primary School

Calculation Policy – Year 3

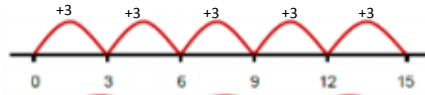
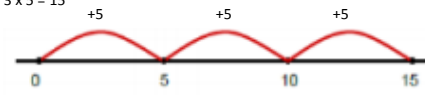
Addition

	Statutory Expectations				Mental Calculations	Vocabulary														
Y3	Add numbers with up to three digits, using formal written method of columnar addition Solve problems, including missing number problems, using number facts, place value and more complex addition.	Add amounts to give change, using both £ and p in practical contexts of money. Add and subtract lengths (m/cm/mm): mass (kg/g); volume/capacity(l/ml) Add fractions with the same denominator within one whole $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$	<u>Adding using jumps of 100, 10 and 1</u> (modelled on a number line) 361 + 114 = 475 +1 +1 +1 +1 +10 +100 361 362 363 364 365 375 475 (using efficient jumps) 389 + 47 = 436 + 11 + 36 389 400 436	<u>Using partitioning</u> 285 + 157 = 442 285 + 7 = 292 292 + 50 = 342 342 + 100 = 442 <u>Using models</u> Sam had 45 stamps. His father gave him 39 stamps. How many stamps did Sam have? <table><tr><td>45</td><td>39</td></tr><tr><td colspan="2">?</td></tr></table>	45	39	?		<u>Formal written method</u> (Using Dienes – first physically and then drawn, moving into using the method with no visual support) (no renaming) $\begin{array}{r} 234 \\ + 122 \\ \hline 356 \end{array}$ <table><tr><td></td><td></td><td></td></tr></table> (with renaming) $\begin{array}{r} 374 \\ + 118 \\ \hline 492 \end{array}$ <table><tr><td></td><td></td><td></td></tr></table> <table><tr><td>4</td><td>9</td><td>2</td></tr></table> Regroup 10 ones into 1 ten							4	9	2	Add numbers mentally including; HTO + O Count in 4s, 8s, 50s and 100s from 0 Know 10 and 100 more than any given 2-digit number. HTO + O HTO + T HT + H	More Less Add Plus Altogether In total Sum Increase
45	39																			
?																				
4	9	2																		

Subtraction

	Statutory Expectations				Mental Calculations	Vocabulary	
Y3	Subtract using a formal written method: TO – O TO – TO TO – TO HTO – O HTO – TO HTO – HTO Solve problems, including missing number problems, using more complex subtraction. Estimate answers and use inverse to check.	<u>Taking away using jumps of 1, 10 and 100</u> (modelled using a number line) 284 – 123 = 161 -100 -10 -10 -1 -1 -1 161 261 271 281 282 283 284 (using efficient jumps) 436 – 47 = 389 + 11 + 36 389 400 436	<u>Taking away using place value</u> 326 – 178 = 148 326 – 100 = 226 226 – 70 = 156 156 – 8 = 148	<u>Taking away using standard written method</u> (no exchanging) 3 5 4 - 1 2 3 2 3 1 (with exchanging) 3 3 4 - 1 1 6 2 1 8	<u>Using models</u> Subtract 270 from 400 270 ? 400 A spider has 8 legs and an ant has 6 legs. How many more legs does a spider have than an ant? Spider - 8 Ant - 6 8 – 6 = 2	Find 10 less than a given number initially using a 100 square and then mentally e.g. ten less than 54 = 44 33 34 35 43 44 45 53 54 55 Subtract numbers mentally: HTO – HTO HTO – TO HTO – O	Non-commutative subtract fewer decrease reduce less less than difference take away take from minus

Multiplication

	Statutory Expectations					Mental Calculations	Vocabulary																																											
Y3	Write and calculate mathematical statements for multiplication, using two-digit numbers times one-digit numbers, using efficient written methods.	<u>Arrays</u> 4 x 2 = 8 2 x 4 = 8 	<u>Partitioning method</u> (no regrouping) <table><tr><td>T</td><td>O</td></tr><tr><td>2</td><td>3</td></tr><tr><td>X</td><td>2</td></tr><tr><td colspan="2"> </td></tr><tr><td>6</td><td></td></tr><tr><td>+</td><td>4 0</td></tr><tr><td colspan="2"> </td></tr><tr><td>4</td><td>6</td></tr></table> Multiply the ones by 2 <u>Then</u> Multiply the tens by 2 <u>Then</u> Add the products (with regrouping) <table><tr><td>T</td><td>O</td></tr><tr><td>2</td><td>6</td></tr><tr><td>X</td><td>2</td></tr><tr><td colspan="2"> </td></tr><tr><td>1 2</td><td></td></tr><tr><td>+</td><td>4 0</td></tr><tr><td colspan="2"> </td></tr><tr><td>5</td><td>6</td></tr></table> <u>(mentally)</u> 54 x 3 = 172 50 x 3 = 150 4 x 3 = 12 150 + 12 = 162	T	O	2	3	X	2			6		+	4 0			4	6	T	O	2	6	X	2			1 2		+	4 0			5	6	<u>Repeated addition on a number line</u> 5 x 3 = 15  Or 3 x 5 = 15 	<u>Formal written method</u> (No regrouping) 22 x 3 = 66 <table><tr><td>22</td></tr><tr><td>x 3</td></tr><tr><td colspan="2"> </td></tr><tr><td>66</td></tr></table> (with regrouping) 27 x 5 = <table><tr><td>27</td></tr><tr><td>x 5</td></tr><tr><td colspan="2"> </td></tr><tr><td>135</td></tr><tr><td>± 3</td></tr></table> 7 x 5 = 35 - regroup the 30. 20 x 5 = 100, 100 + 30 = 130 - regroup the 100 0 x 5 = 0, 0 + 100 = 100	22	x 3			66	27	x 5			135	± 3	Recall and use multiplication facts for the 2, 3, 4, 5, 8 and 10 times tables. Calculate mathematical statements for multiplication including two-digit numbers times one-digit numbers, using mental methods.	Multiply Times Lots of Repeated addition Commutative Array Multiple Product
T	O																																																	
2	3																																																	
X	2																																																	
6																																																		
+	4 0																																																	
4	6																																																	
T	O																																																	
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Division

	Statutory Expectations						Mental Calculations	Vocabulary
Y3	Write and calculate mathematical statements for division using two-digit numbers divided by one-digit numbers, using efficient written methods. TO ÷ O (divisor is 2/3/4/5/8/10) Recognise that tenths arise from dividing an object in to 10 equal parts and in dividing one-digit numbers or quantities by 10.	<u>Division as the inverse of multiplication</u> 18 ÷ 3 ÷ 6 X 3 x 6 = 18 6 x 3 = 18 18 ÷ 3 = 6 18 ÷ 6 = 3	<u>Division by grouping</u> Put 12 apples into 3 equal groups 12 ÷ 3 = 4	<u>Dividing with partitioning</u> 85 ÷ 5 = 17 85 50 35 50 ÷ 5 = 10 35 ÷ 5 = 7 (10 + 7 = 17)	<u>Dividing with Regrouping</u> 96 ÷ 8 8 1 2 9 6 - 8 0 1 6 - 1 6 0 96 ÷ 8 = 12	<u>Worded problems</u> Tom has 5 chocolate bars; Julia has twice as many as Tom. How many bars does Julia have? ? Julia Tom 5 5 x 2 = 10	Know the division facts of the 3, 4, 6, 7 and 8 times tables.	Divide Share Group Fraction divisible