HINDLEY J AND I SCHOOL

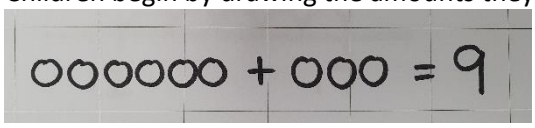
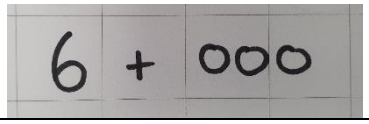
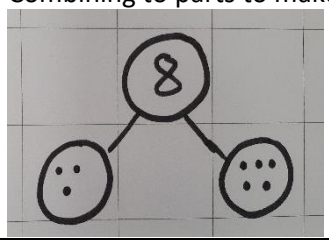
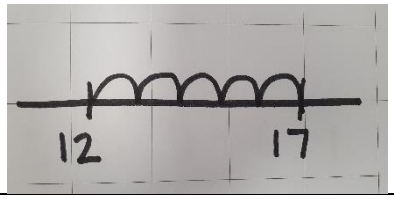
Written Calculation Policy

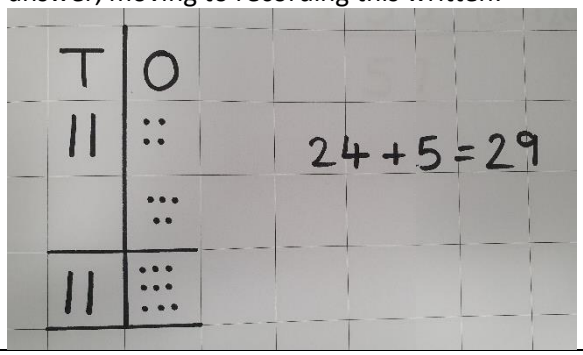
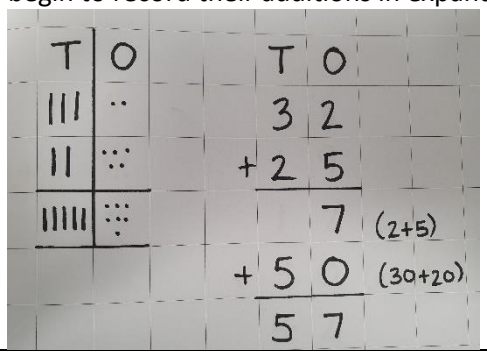
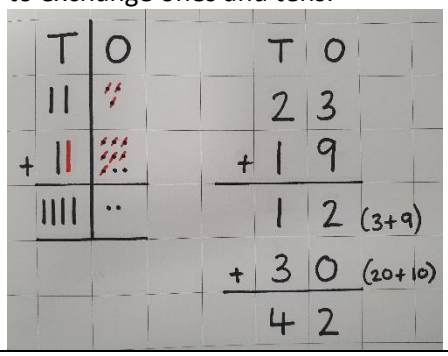
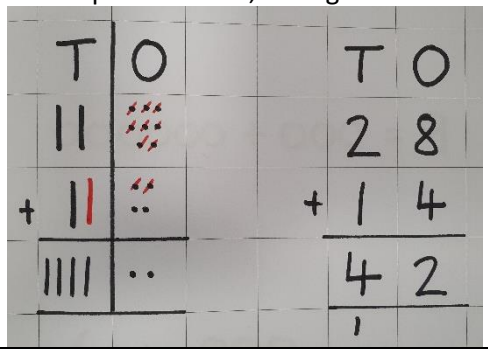
September 2020

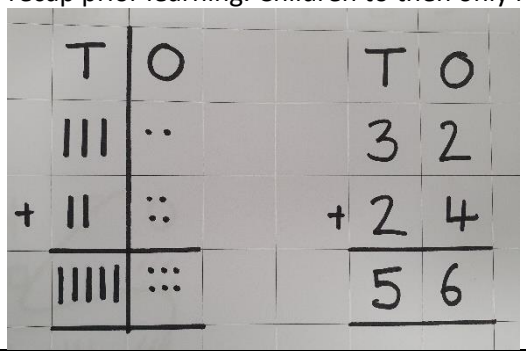
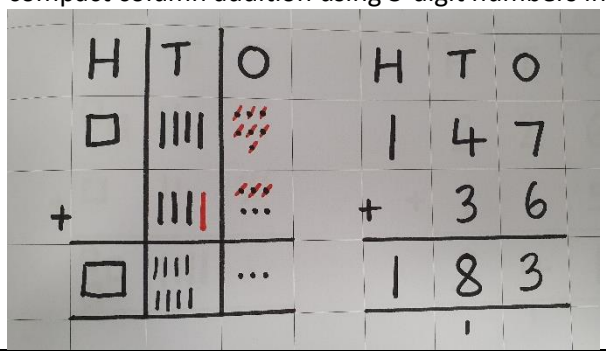
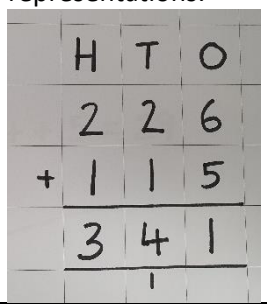
_____Signed on behalf of the school _____ Date

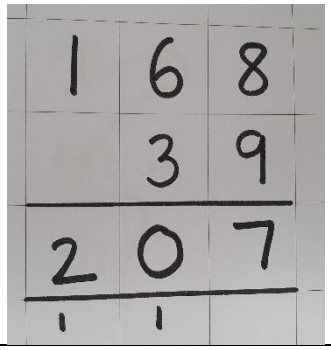
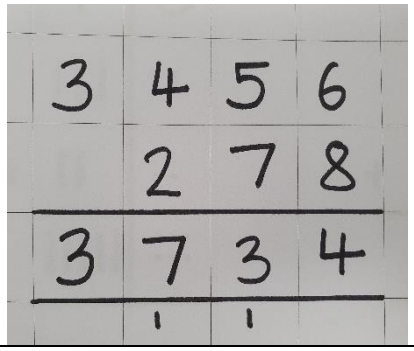
_____Signed on behalf of the school _____ Date

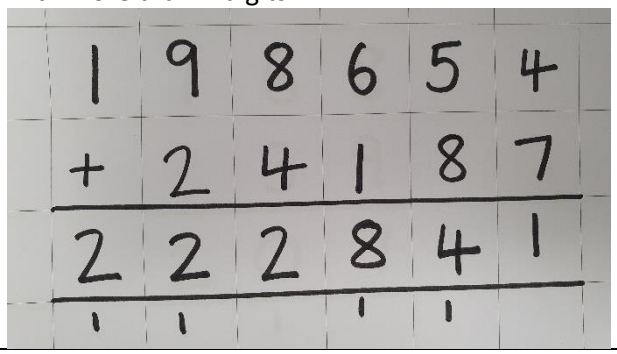
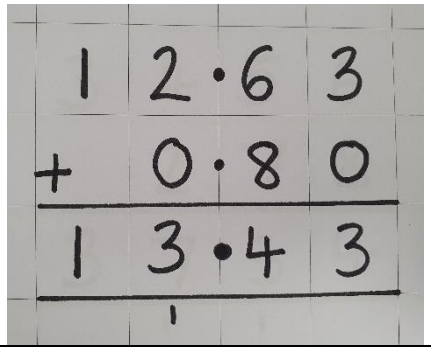
	**Early Years**
Calculation	Written Strategy

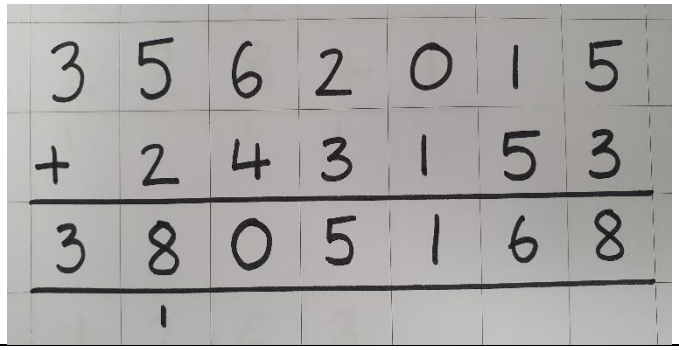
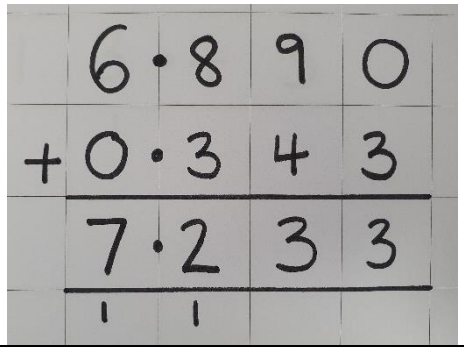
	**Year 1**
Calculation	Written Strategy
$6 + 9 = 9$	Children begin by drawing the amounts they are adding:  Moving to starting with largest number, counting on with the smaller number: 
$3 + 5 = 8$	Combining to parts to make a whole in a part-whole model: 
$12 + 5 = 17$	Children create their own blank number lines to calculate their answer. 

Addition	**Year 2**
Calculation	Written Strategy
$28 + 14 = 42$	Children begin to use practical equipment in columns to calculate the answer, moving to recording this written: 
$32 + 25 = 57$	After becoming secure recording their answer pictorially (left), they begin to record their additions in expanded column addition (right): 
$23 + 19 = 42$	Children use the expanded column addition method to understand how to exchange ones and tens. 
$28 + 14 = 42$	When the children become confident, they begin to record their answer as compact addition, noting carried-over digits below: 

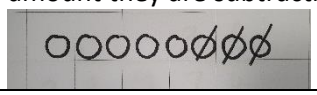
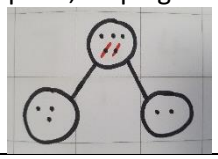
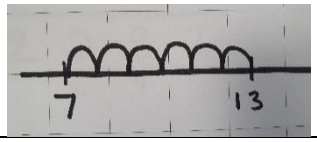
	**Year 3**
Calculation	Written Strategy
$32 + 24 = 56$	Children only record pictorially (left) at the very beginning of Year 3 to recap prior learning. Children to then only record abstract (right): 
$147 + 36 = 183$	Children to use pictorial representation to become confident with compact column addition using 3-digit numbers including carrying: 
$226 + 115 = 341$	Children to move to compact column addition without using pictorial representations: 

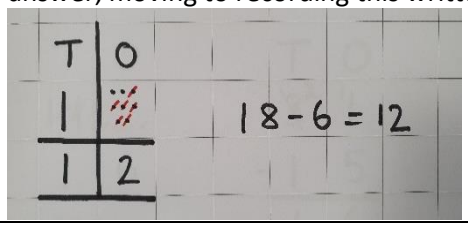
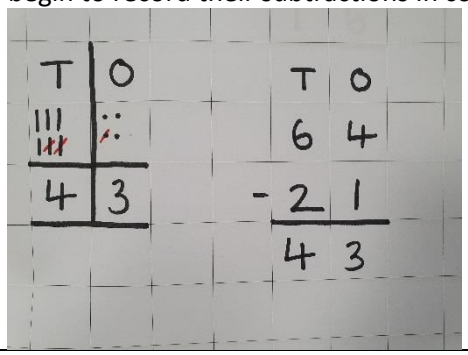
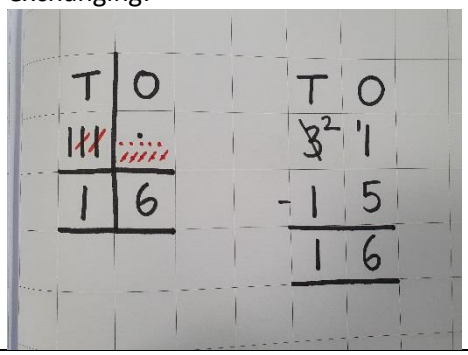
Addition	**Year 4**
Calculation	Written Strategy
$168 + 39 = 207$	Children to record addition in columns, recording carrying over below: 
$3{,}456 + 278 = 3{,}3734$	Children use column addition with up to 4-digit numbers: 

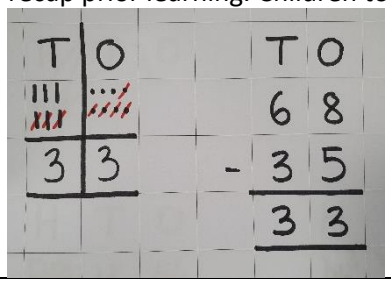
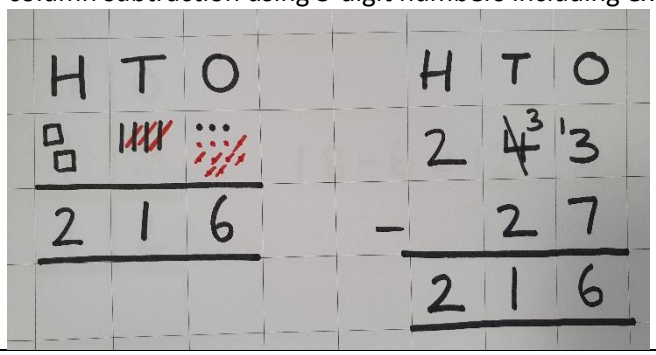
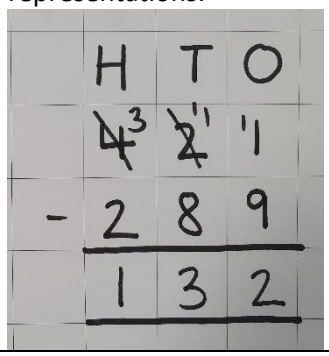
Addition	**Year 5**
Calculation	Written Strategy
$198{,}654 + 24{,}187 = 222{,}841$	Children use column addition as shown in Year 4, but also for numbers with more than 4-digits: 
$12.63 + 0.8 = 13.43$	Children use column addition with decimals, using 0 place value holders: 

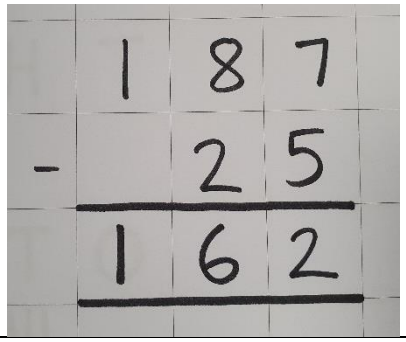
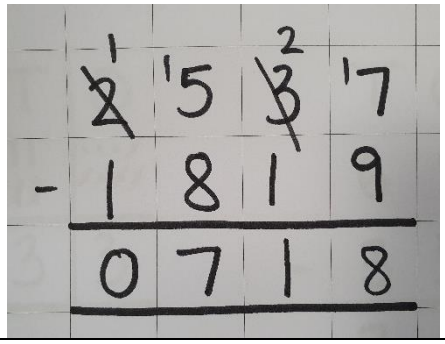
Addition	**Year 6**
Calculation	Written Strategy
$3{,}562{,}015 + 243{,}153 = 3{,}805{,}168$	Children use column addition as shown in Year 5: 
$6.89 + 0.343 = 7.233$	Children use column addition with decimals, using 0 place value holders: 

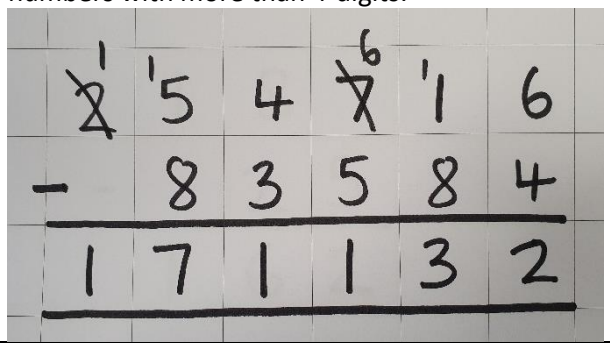
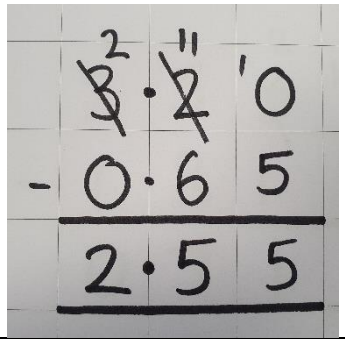
	**Early Years**
Calculation	Written Strategy

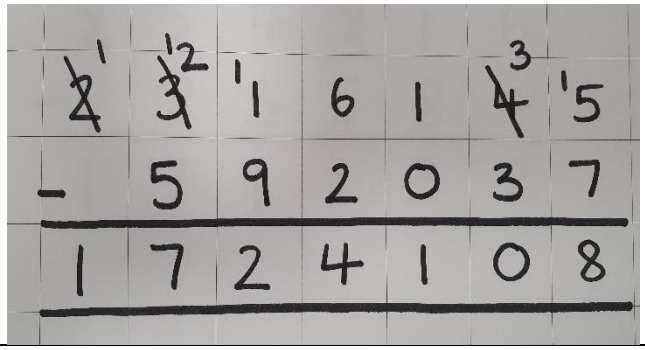
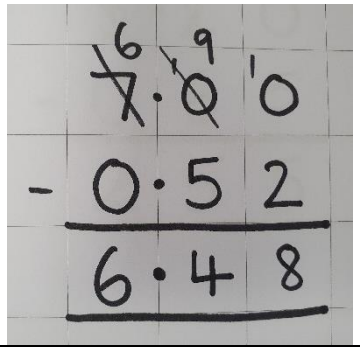
	**Year 1**
Calculation	Written Strategy
$8 - 3 = 5$	Children begin by drawing the amount to begin with, and cross out the amount they are subtracting: 
$5 - 2 = 3$	Children to use part-whole model to show how subtracting creates two parts, helping to make link with addition. 
$12 + 5 = 17$	Children are taught how to use a blank number line for subtraction (counting backwards) and then encouraged to draw their own number line: 

Subtraction	**Year 2**
Calculation	Written Strategy
$18 - 6 = 12$	Children begin to use practical equipment in columns to calculate the answer, moving to recording this written: 
$64 - 21 = 43$	After becoming secure recording their answer pictorially (left), they begin to record their subtractions in column subtraction (right): 
$31 - 15 = 16$	When the children become confident, they begin to use subtraction with exchanging: 

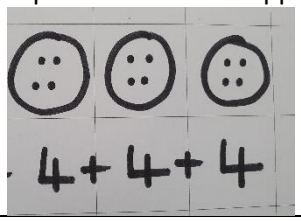
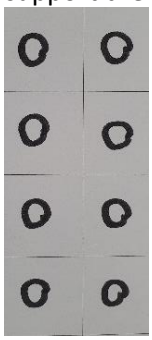
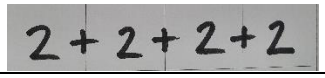
Subtraction	**Year 3**
Calculation	Written Strategy
$68 - 35 = 33$	Children only record pictorially (left) at the very beginning of Year 3 to recap prior learning. Children to then only record abstract (right): 
$243 - 27 = 216$	Children to use pictorial representation to become confident with column subtraction using 3-digit numbers including exchanging: 
$421 - 289 =$	Children to move to column subtraction without using pictorial representations: 

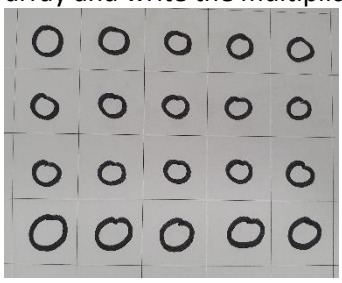
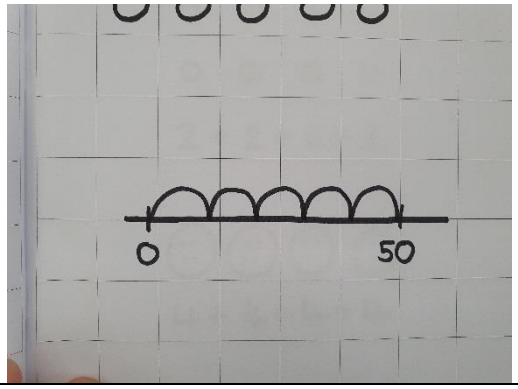
Subtraction	**Year 4**
Calculation	Written Strategy
$187 - 25 = 162$	Children to record subtraction in columns: 
$2{,}537 - 1{,}819 = 718$	Children use column subtraction with up to 4-digit numbers: 

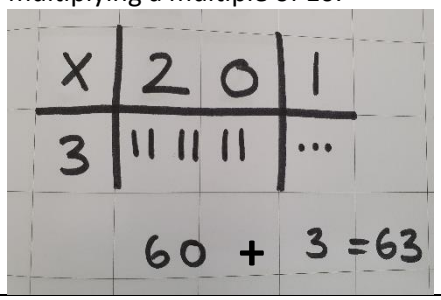
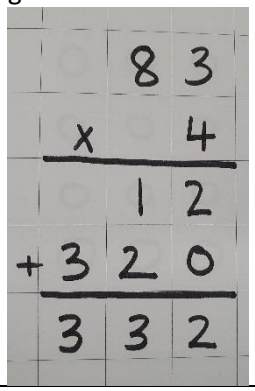
Subtraction	**Year 5**
Calculation	Written Strategy
$254{,}716 - 83{,}584 = 171{,}132$	Children use column subtraction as shown in Year 4, but also for numbers with more than 4-digits: 
$3.2 - 0.65 = 2.55$	Children use column subtraction with decimals, using 0 place value holders: 

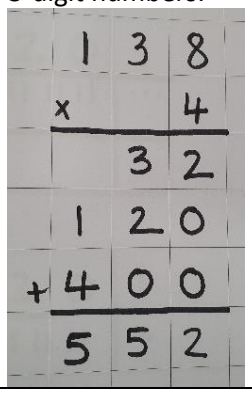
Subtraction	**Year 6**
Calculation	Written Strategy
$2{,}316{,}145 - 592{,}037 = 1{,}724{,}108$	Children use column subtraction as shown in Year 5: 
$7 - 0.52 = 6.48$	Children use column subtraction with decimals, using 0 place value holders: 

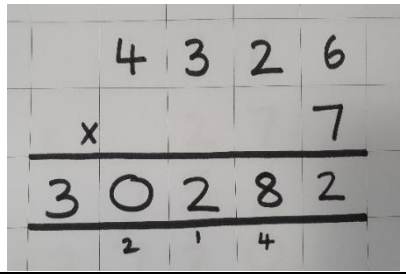
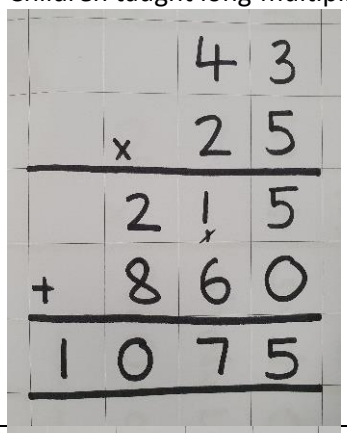
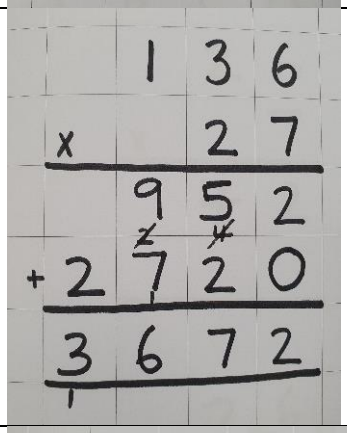
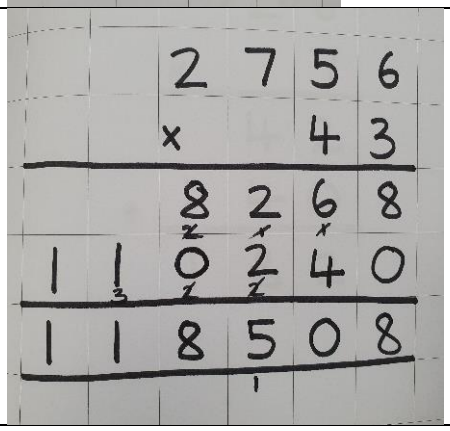
	Early Years
Calculation	Written Strategy

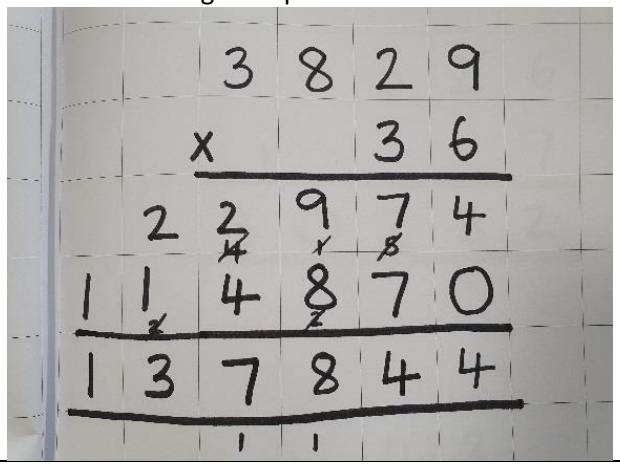
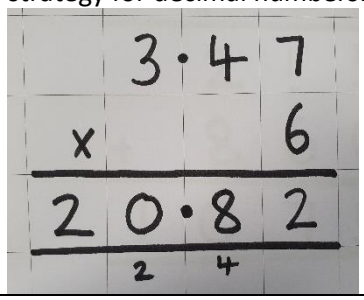
	Year 1
Calculation	Written Strategy
$3\ lots\ of\ 4$	To help solve problems, children will use concrete objects and pictorial representations to support their ideas of multiplication: 
$4\ groups\ of\ 2$	Children will be introduced to an array to support multiplication and to support the understanding that multiplication is repeated addition  

	**Year 2**
Calculation	Written Strategy
$3 \times 5 = 15$	Children will be able to represent a multiplication calculation using an array and write the multiplication symbol within a number sentence.  Children will also understand that multiplication can be carried out in any order (commutative)
$5 \times 10 = 50$	Children will understand the operation of multiplication as repeated addition on a blank number line: 

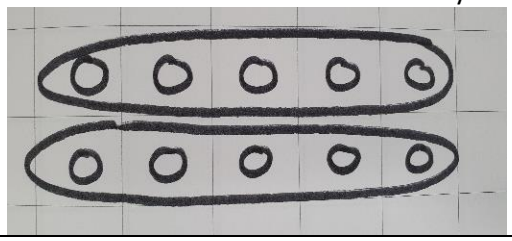
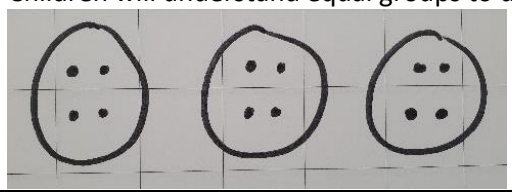
	**Year 3**
Calculation	Written Strategy
21×3	Children will be taught to multiply numbers (TO x O) through partitioning and the formal written method of grid multiplication. This method will also help children to gain a solid understanding of multiplying a multiple of 10. 
$83 \times 4 = 332$	Children will be taught to multiply numbers (TO x O) using the formal written method of expanded column multiplication and make the link to grid method: 

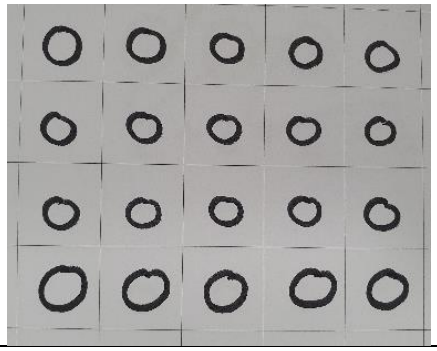
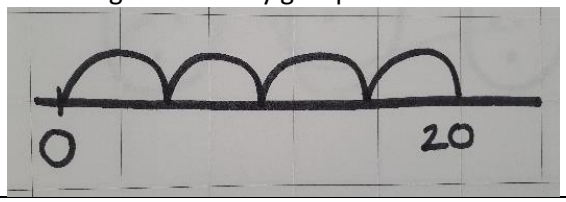
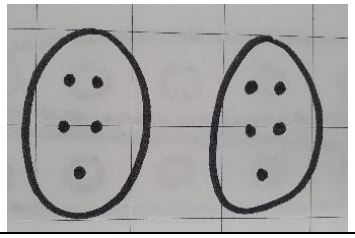
	**Year 4**
Calculation	Written Strategy
$138 \times 4 = 552$	Children to record multiplication in expanded method, like Y3 for 2 and 3-digit numbers: 

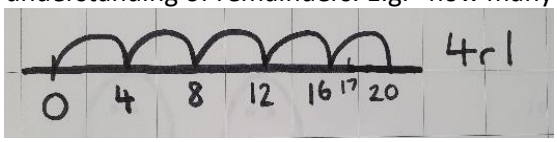
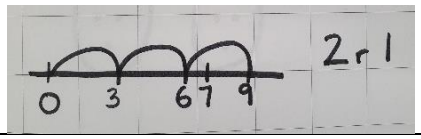
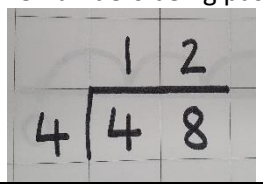
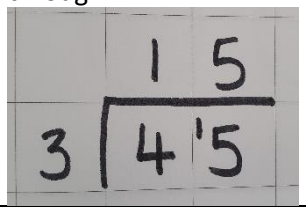
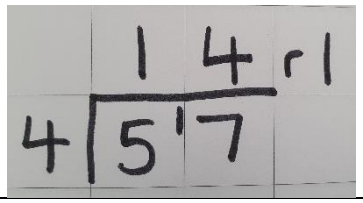
Multiplication	**Year 5**
Calculation	Written Strategy
$4{,}326 \times 7$	Children to move to formal short multiplication (compact) up to 4-digits: 
$43 \times 25 = 1{,}075$	Children taught long-multiplication method to up 4-digits: 
$136 \times 27 = 3{,}672$	
$2{,}756 \times 43$ $= 118{,}508$	

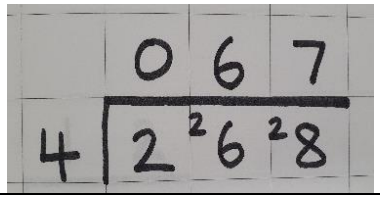
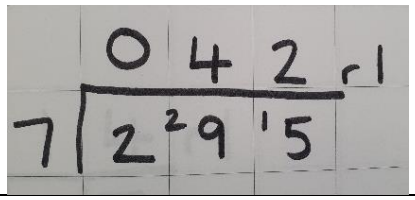
Multiplication	**Year 6**
Calculation	Written Strategy
$3{,}829 \times 36 = 137{,}844$	Children use long multiplication as shown in Year 5: 
$7 - 0.52 = 6.48$	Children use short multiplication as shown in Year 5, also using the strategy for decimal numbers: 

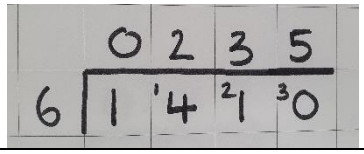
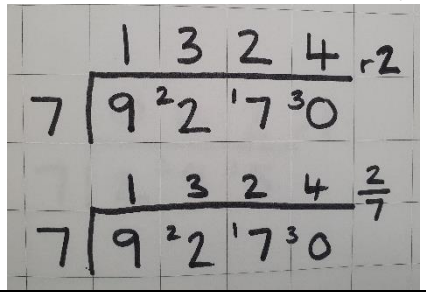
	**Early Years**
Calculation	Written Strategy

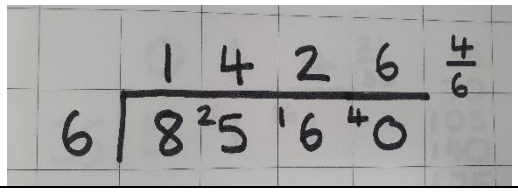
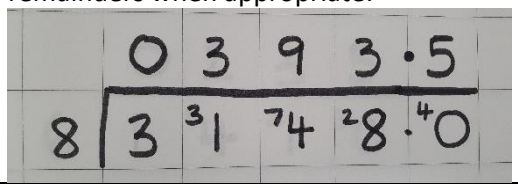
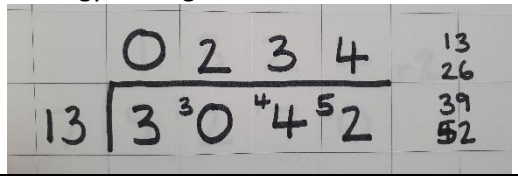
	**Year 1**
Calculation	Written Strategy
How many groups of 5 are in 10?	Children will be introduced to an array to support division: 
Share 12 into 3 groups	Children will understand equal groups to divide: 

Division	Year 2
Calculation	Written Strategy
$15 \div 5 = 3$	Children will be able to represent a division calculation using an array and write the division within a number sentence: 
$20 \div 5 = 4$	Children will use number lines to divide, to support formal short division in KS2 e.g. "how many groups of 5s in 20?": 
$10 \div 2 = 5$	Children will use a written strategy to show how 10 is shared between 2. 

Division	Year 3
Calculation	Written Strategy
$17 \div 4 = 4r1$	Before formal short division is used, children will develop a solid understanding of remainders. E.g. "how many groups of 4 are in 17": 
$7 \div 3 = 2r1$	
$48 \div 4 = 12$	Children are first taught short division method where there are no remainders being passed through the calculation: 
$45 \div 3 = 15$	When children are confident with the above 2 processes, they begin to use short division where there are remaining digits being passed through: 
$57 \div 4 = 14r1$	Where there is a remainder at the end of the calculation, children note this as 'rX': 

Division	**Year 4**
Calculation	Written Strategy
$268 \div 4 = 67$	Children to use short division as in Y3, for 2 and 3-digit numbers: 
$295 \div 7 = 42r1$	Where there is a remainder at the end of the calculation, children note this as 'rX': 

Division	**Year 5**
Calculation	Written Strategy
$1{,}410 \div 6 = 235$	Children to use short division as in Y3, for up to 4-digit numbers: 
$9{,}270 \div 7 = 1{,}324\frac{2}{7}$	Children write remainders as 'rX', before moving to as fractions: 

Division	**Year 6**
Calculation	Written Strategy
$8{,}560 \div 6 = 1{,}426\frac{4}{6}$	Children use short division as in Year 5: 
$3{,}148 \div 8 = 393.5$	Children use short division as in Year 5 but using decimals to find remainders when appropriate: 
$3{,}042 \div 13 = 234$	Children divide by 2-digit numbers using the above short division strategy, noting down their times tables to support: 
$511 \div 35 = 14\frac{21}{35}$	Children become confident when remainders moving through the division are more than 1 digit: