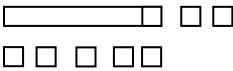
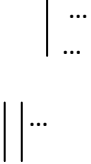
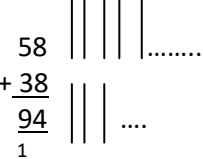
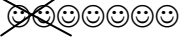
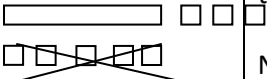
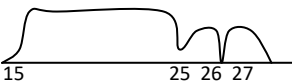
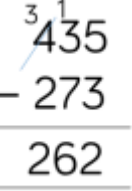
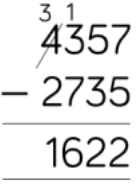




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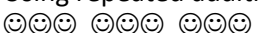
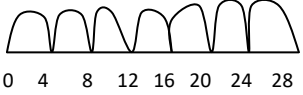
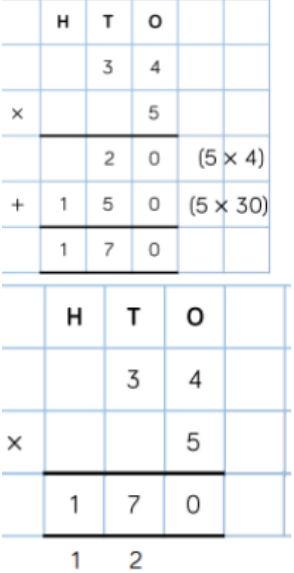
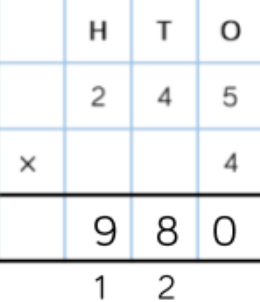
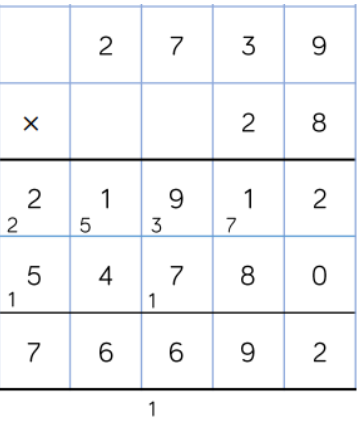
Written maths calculations overview

	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6																	
Addition + <i>Put together</i> <i>Add</i> <i>Altogether</i> <i>More than</i> <i>Total</i> <i>Sum</i> <i>Increase</i> <i>Plus</i> <i>And</i>	Use toys and general classroom resources for children to physically manipulate, group/regroup, including specific maths resources – counters, Numicon, cubes etc.  Visual supports such as tens frames, part/part/whole models and addition mats with pictures/icons.	Using Base 10 to add TU and U.  $13 + 5 = 18$	Using base 10 to combine tens and ones, including exchanging. $23+16 = 39$  Expanded column addition (i.e. partitioning numbers to add) $60 \rightarrow 7$ $20 \rightarrow 4$ $80 \rightarrow 11 = 91$	Using Base 10 to support compact column addition (up to 3 digits)  Include place value counters and other representations as appropriate**	Compact column addition, up to and including 4 digits. $\begin{array}{r} 5347 \\ +2286 \\ \hline 7633 \\ 11 \end{array}$ Children write written method alongside concrete and pictorial representations so they can see the links.	Compact column addition to include decimals and multiple numbers. $\begin{array}{r} 12.36 \\ +23.68 \\ \hline 36.04 \\ 11 \end{array}$ $\begin{array}{r} 21.72 \\ +4.634 \\ \hline 140.001 \end{array}$ <table border="1" data-bbox="1736 577 2150 753"><tr><td>1</td><td>0</td><td>4</td><td>3</td><td>2</td><td>8</td></tr><tr><td>+</td><td>6</td><td>1</td><td>7</td><td>3</td><td>1</td></tr><tr><td>1</td><td>6</td><td>6</td><td>0</td><td>5</td><td>9</td></tr></table>	1	0	4	3	2	8	+	6	1	7	3	1	1	6	6	0	5	9
1	0	4	3	2	8																			
+	6	1	7	3	1																			
1	6	6	0	5	9																			
Subtraction - <i>Take away</i> <i>Subtract</i> <i>Minus</i> <i>Difference between</i> <i>Distance between</i> <i>Less than</i> <i>Reduce</i> <i>Fewer</i> <i>Decrease</i>	Using real life objects/toys/resources to take away and count how many left. Maths resources and visual support to be used as above. 	Using Base 10 or number lines to count how many left  $18 - 5 = 13$	Using Base 10 to subtract with some exchanging. Highlighting that ten ones equal one ten. Number lines $27-12 = 15$ 	Using Base 10 and other concrete/pictorial resources to support formal column method – up to 3 digits, Including exchanging. 	Compact column subtraction with exchanging (up to 4 digits)  Children write written method alongside concrete and pictorial representations so they can see the links.	Compact method (abstract) alongside concrete/pictorial resources as appropriate. Should include larger numbers and decimal numbers. $\begin{array}{r} 4 \ 15 \ 1 \\ 5 \ 6 \ 2 \ 9 \\ - 3 \ 7 \ 5 \ 5 \\ \hline 1 \ 8 \ 7 \ 4 \end{array}$ $\begin{array}{r} 7 \ 14 \ 1 \\ 8 \ 5 \ 0 \ 1 \ 4 \ 6 \\ - 3 \ 7 \ 2 \ 0 \ 3 \ 3 \\ \hline 4 \ 7 \ 8 \ 1 \ 1 \ 3 \end{array}$																		



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Written maths calculations overview

Multipli- cation x <i>Double Groups of Lots of Multiply Product Multiple Times Square</i>	Making and drawing groups of real life objects - solving problems including doubling.  Making two equal groups. Adding two equal groups. Maths resources and physical examples.	Making and drawing groups of real life objects with matching number sentences.  Represent multiplication as repeated addition in many different ways. Concrete and pictorial examples to solve problems. No expectation to record formally.	Using repeated addition.  $3 + 3 + 3 = 9$ Making and describing arrays. Introduction of the multiplication symbol.  $3 \times 5 = 15$ $5 \times 3 = 15$ $5 + 5 + 5 = 15$ $3 + 3 + 3 + 3 + 3 = 15$ <u>Number lines</u> $4 \times 7 = 28$ 	Using arrays 2 digit x 1 digit using base 10/PV counters. Expanded method can be used before/alongside short method and other resources. 	Column multiplication (short method) Introduce with place value counters and move away from resources – children relying on knowledge of multiplication tables. 2 and 3 digit x 1 digit 	Column multiplication (abstract/short method) Column method for 2 or 3 digit x 2 digit (Y5): Column method for 3 or 4 digit x 2 digit (Y5/6):  Consider area model/grid method to support as necessary. Children who have difficulty recalling times table facts, multiplication grids may be provided so focus is on the method.
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Written maths calculations overview

Division

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Halve
Divide
Share
Groups of
Lots of
Factor

Solve problems involving sharing and halving. Visual supports and physical objects. Include halving a quantity of objects and halving a whole.

😊😊 😊😊
😊😊 😊😊

Counting and use of resources to explore sharing between three or more.

Sharing out real objects in to equal groups. Concrete and pictorial examples. No expectation to record formally. May include the concept of remainders as ones 'left over'.

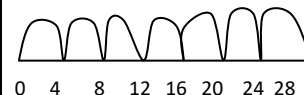
😊😊 😊😊 😊😊
😊😊
😊

Straws, base 10 and PV counters can all be used to share larger numbers into equal groups.

Repeated subtraction including remainders.
😊😊😊😊 😊😊😊😊 😊😊😊😊
 $9 \div 3 = 3$

Using number lines to count in groups.

$$28 \div 4 = 7$$



Y3 - Making links to times tables facts. Base 10 and PV counters to be used to share larger numbers into equal groups.

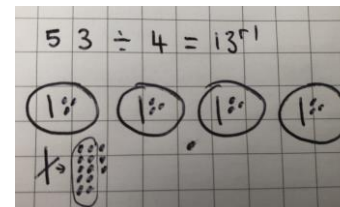
Use equipment to exchange one ten for ten ones. Remainders explored through different representations.

Make and draw representations eg
 $52 \div 4 = 13$

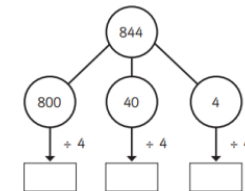


$$53 \div 4 = 13r1$$

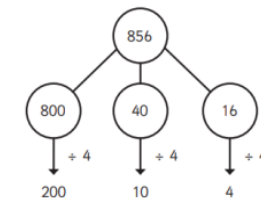
Other representations to be used / sketched by children as appropriate, eg flexible partitioning ($52 \div 4$, partition into 40 and $12 \div 4$), Base10 shared onto plates.



Y4 - Short division up to 3 digits by 1 digit (supported by concrete and pictorial representations as seen in Y3) May include part whole models/partitioning:



Flexible partitioning:



Short, formal method:

		1	3
	4	5	12

Include remainders.

Short division
Up to 4 digit by 1 digit including remainders.

	4	2	6	6
2	8	5	13	12

Children encouraged to move away from concrete and pictorial support as appropriate.

Y6 - Up to 4 digit by 2 digit.
Short Division, writing out multiples to support:

	0	4	8	9
15	7	73	133	135

15, 30, 45, 60, 75, 90, 105, 120

Long division, writing out multiples to support:

	0	3	6	1	2
1	2	4	3	2	2
-	3	6			4
		7	2		3
-		7	2		6
			0		7
					8



High Hesket CE Primary School
Written maths calculations overview

The methods above are not exhaustive and other methods/representations may be used if and when appropriate. **Please refer to supporting document ‘*White Rose National Curriculum Progression*’ and ‘*White Rose Calculation Policy*’ for both addition/subtraction and multiplication/division for calculation progression using different representations including concrete, pictorial and abstract methods.