

# John Perry Calculation Policy

## Notes

The calculation policy should not replace:

- varied fluency tasks;
- problem solving and reasoning questions.

## What does the calculation policy not include?

It does not include:

- mental calculation methods;
- discussion about the most efficient methods for a task (e.g. formal written methods are not always the best choice);
- key knowledge needed before a formal written method e.g. what exchanging is and how to do it;
- Context questions (e.g. multi-step word problems / money and measure problems);
- addition, subtraction, multiplication or division of fractions;
- multiplying and dividing by powers of 10.

Also consider that the calculation policy is geared towards the National Curriculum objective (end point) e.g. in year 3 the objective is to add two 3-digit numbers. However, if you are following White Rose there is a build up to this - e.g. adding a 1-digit number to a 3-digit number.

Layout for formal written methods to ensure consistency across the school:

Addition:

	1	3	7	8
+	2	1	4	8
	3	5	2	6
	1	1		

Addition symbol on the left. Exchanging shown underneath the calculation.

Subtraction:

$$\begin{array}{r} \overset{3}{\cancel{4}}\overset{1}{3}57 \\ - 2735 \\ \hline 1622 \end{array}$$

Subtraction symbol on the left. Exchanging shown by crossing out the top digit and re-writing it.

Multiplication:

By a one-digit number:

	Th	H	T	O
	1	8	2	6
×				3
	5	4	7	8
	2		1	

Multiplication symbol on the left. Exchanging shown underneath the calculation.

Division:

$$\begin{array}{r} 86 \text{ r } 2 \\ 5 \overline{) 432} \\ \underline{40} \phantom{0} \\ 32 \\ \underline{30} \\ 2 \end{array}$$

Exchanging to be shown above the digits but below the line.

\*Year 6 taught to show remainders as fractions or decimals.

Short division (year 6 ONLY):

$7,335 \div 15 = 489$

	0	4	8	9
15	7	$\frac{7}{3}$	$\frac{13}{3}$	$\frac{13}{5}$

15	30	45	60	75	90	105	120	135	150
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Children write multiples to assist them when dividing by a two-digit number.

Long division (year 6 ONLY):

By a two-digit number:

TTh	Th	H	T	O
	2	7	3	9
×			2	8
2	1	9	1	2
2	5	3	7	
5	4	7	8	0
1		1		
7	6	6	9	2

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Multiplication symbol on the left. Exchanging shown above the digits (in the multiplication). Exchanging in the addition shown underneath the calculation.

Children multiply the ones first, then the tens.

$$372 \div 15 = 24 \text{ r}12$$

		2	4	r	1	2
1	5	3	7	2		
-		3	0	0		
		7	2			
-		6	0			
		1	2			

- 1 × 15 = 15
- 2 × 15 = 30
- 3 × 15 = 45
- 4 × 15 = 60
- 5 × 15 = 75
- 10 × 15 = 150

Children write multiples to assist them when dividing by a two-digit number.