Key Stage 2 Calculation Policy

Overview of Written Methods

Year 4	
Addition	
Compact column addition *Compact column addition with larger numbers*	5347 2286 + 1495 121 9128
Fractions *Add like fractions*	$\dfrac{3}{8} + \dfrac{1}{8} + \dfrac{1}{8} = \dfrac{5}{8}$
Subtraction	
Counting up *Find a difference between two numbers by counting up from the smaller to the larger*	506 − 387 = 119 3 + 10 + 100 + 6 = 119 10 6 3 100 387 390 400 500 506
Expanded column subtraction *Children are shown how expanded column subtraction builds upon partitioning*	600 110 16 700 20 0 − 300 50 8 300 60 8
Compact column subtraction *Children **quickly** move to practising compact column subtraction.*	6 11 16 7 2 0 − 3 5 8 3 6 8

Fractions *Subtract like fractions*		$$\frac{3}{8} - \frac{1}{8} = \frac{2}{8}$$

Multiplication

Multiplication facts
Become fluent with 12 x 12 times tables

$$9 \times 6 = 54$$

Partitioning to double
Find doubles to double 100 and beyond using partitioning

1	2	6
↓	↓	↓
100	20	6
↓	↓	↓
200	40	12

$$200 + 40 + 12 = 252$$
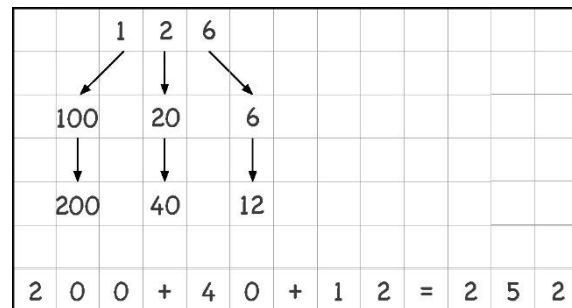
Grid method
Use grid multiplication to multiply 2-digit numbers by 1-digit numbers and 2-digit numbers by 2-digit numbers

×	10	6	
40	400	240	= 640
8	80	48	= 128
			768

Ladder method
Use ladder method to multiply 3-digit numbers by 1-digit numbers

$$
\begin{array}{r}
2\ 5\ 3 \\
\times \qquad 6 \\
\hline
1\ 2\ 0\ 0 \quad \leftarrow 6 \times 200 \\
3\ 0\ 0 \quad \leftarrow 6 \times 50 \\
+ \qquad 1\ 8 \quad \leftarrow 6 \times 3 \\
\hline
1\ 5\ 1\ 8 \\
\end{array}
$$

Division

Partitioning to halve

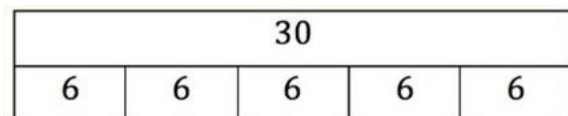*Find half of even numbers to 200 and beyond using partitioning*

	2	5	8	
200	50	8

100	25	4

| 1 | 0 | 0 | + | 2 | 5 | + | 4 | = | 1 | 2 | 9 |
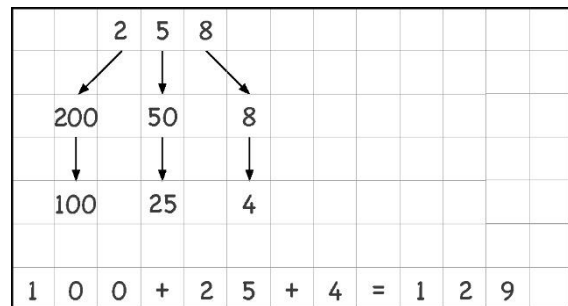
Short division

Divide 2- and 3-digit numbers by 1-digit numbers

$$1 \quad 2 \quad 8$$
$$3 \enclose{longdiv}{3 \quad 8 \quad ^2 4}$$
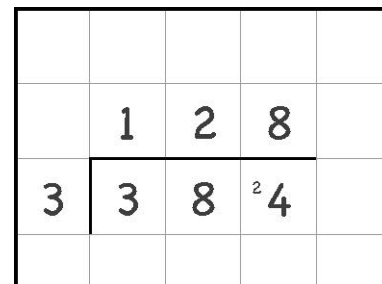
Fractions

Revise bar modelling and use times table facts to find unit and non-unit fractions of amounts within the times-tables.

30				
6	6	6	6	6

$\frac{1}{5}$ of 30 = 6   *(5 x ☐ = 30)*

$\frac{3}{5}$ of 30 = 18

Find equivalent fractions and simplify fractions to their simplest form

$$\frac{10}{15} \overset{\div 5}{\underset{\div 5}{=}} \frac{2}{3}$$