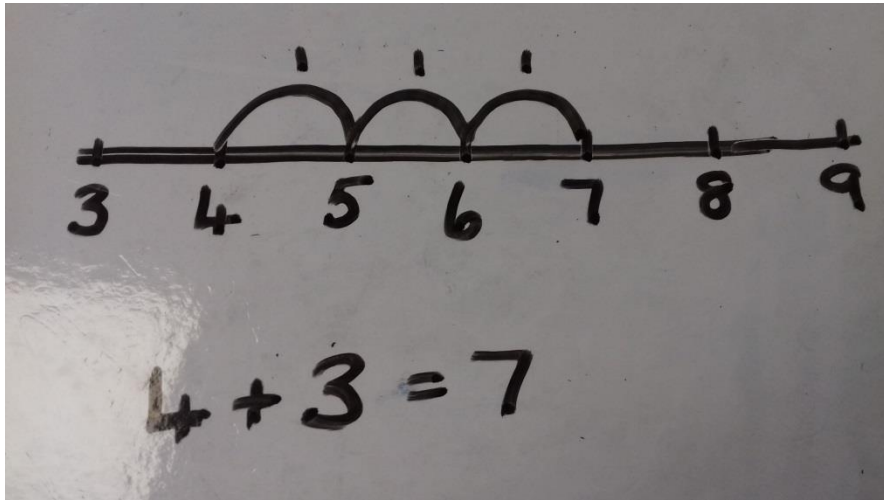




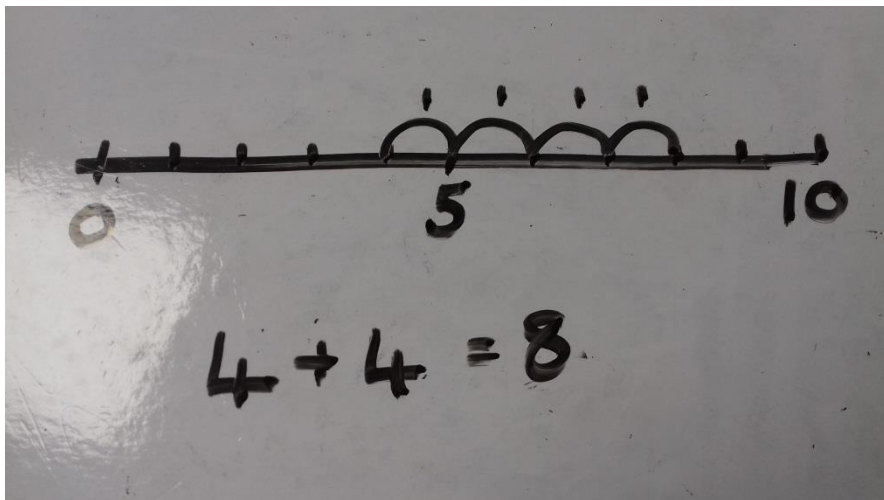
Ashton St. Peter's Church of England VA Primary School Calculation Policy - January 2017

Year Group	Addition	Subtraction	Multiplication	Division
1	Use of number tracks and number lines, numbered in 1s, moving to numbering in 5s and 10s. Introduce number sentences.	Use of number tracks and number lines, mainly numbered in 1s, moving to numbering in 5s and 10s. Count back when subtracting a 1d number from a 2d number (47-6). Introduce number sentences.	Count in 2s, 5s, 10s using a hundred square.	Doubling and halving Practical activities - sharing using materials
2	Number lines, including blank number lines. Horizontal number sentences.	Number lines, including blank number lines. Introduce counting on when appropriate with top group. Horizontal number sentences.	Number lines, including blank number lines. Horizontal number sentences. Arrays	Use of times tables. Horizontal number sentences. Arrays
3	Number lines, including blank number lines. Horizontal number sentences. Introduce expanded HTO when appropriate, from term 2.	Number lines, including blank number lines. Horizontal number sentences. Introduce vertical subtraction without carrying as appropriate. Decomposition to top group.	Introduce x grids TO x O Then TO x TO as appropriate	Use arrays Inverse operations Introduce remainders in BIG MATHS

<p>4</p>	<p>Number lines, including blank number lines. Horizontal number sentences/partitioning in lower groups. Continue expanded HTO Introduce short addition in term 2 Carrying as appropriate.</p>	<p>Number lines, including blank number lines. Horizontal number sentences. Introduce vertical subtraction without carrying, decomposition as appropriate.</p>	<p>Use x grids HTO x O HTO x TO Vertical calculation to top groups HTO x O</p>	<p>Introduce short division with no remainders to all. Introduce remainders to top groups.</p>
<p>5</p>	<p>All use column calculation unless SEN</p>	<p>All use column calculation unless SEN</p>	<p>Vertical calculation HTO x O Introduce long x to top groups TO x TO HTO x TO</p>	<p>Use short division with remainders. Include division of decimals</p>
<p>6</p>	<p>All use column calculation unless SEN Addition of decimals</p>	<p>All use column calculation unless SEN Subtraction of decimals</p>	<p>Vertical calculation HTO x O Introduce long x to all TO x TO HTO x TO Multiply whole number and decimals</p>	<p>Divide whole numbers and decimals. Use short division. Introduce long division to top groups.</p>

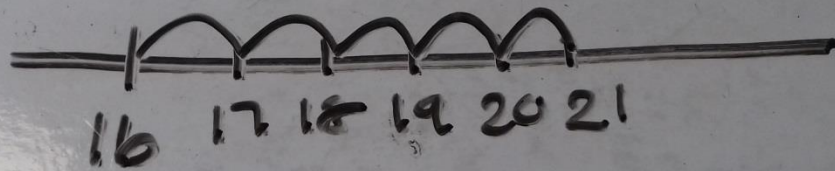


Addition using number line numbered in 1s

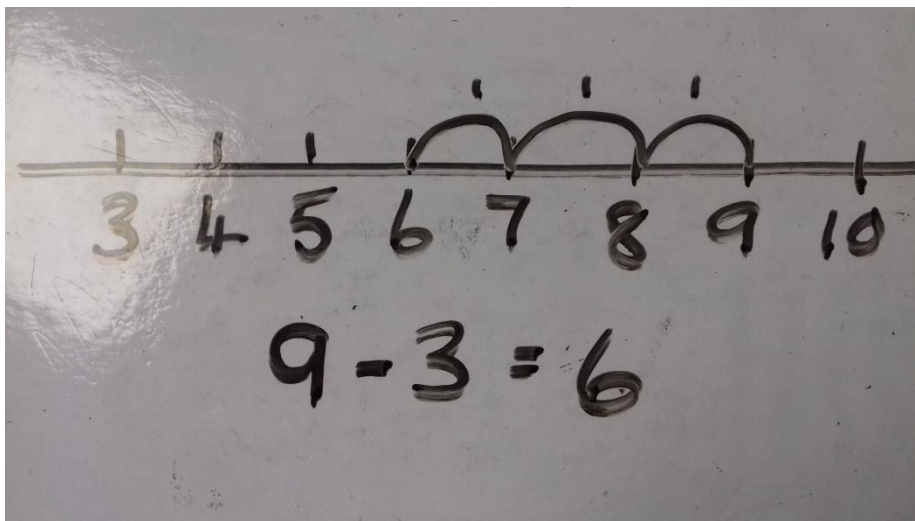
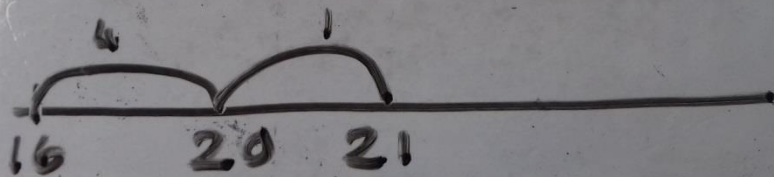


Addition using number line numbered in 5s

blank number lines

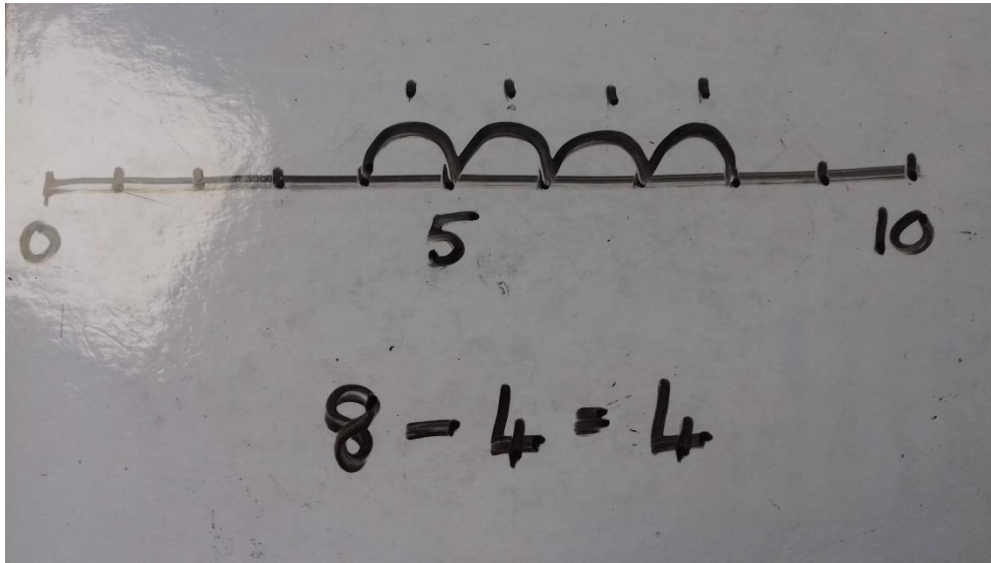


$$16 + 5 = 21$$

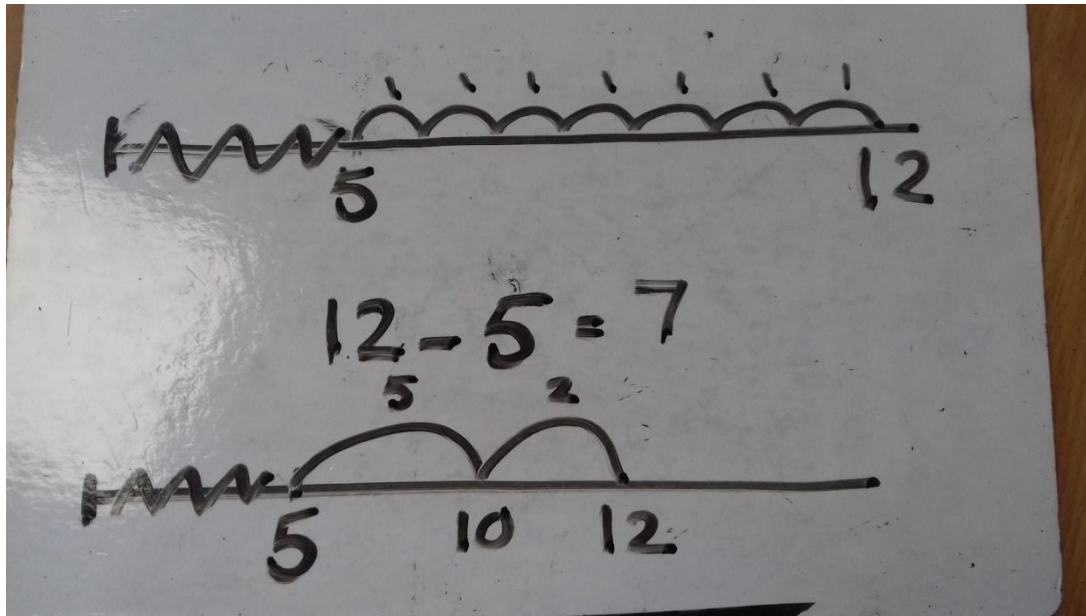


$$9 - 3 = 6$$

Subtraction using number line numbered in 1s – counting back



Subtraction using number line numbered in 5s - counting back



Subtraction by counting on

$$\begin{array}{r} \text{H T O} \\ 234 \\ + 142 \\ \hline 6 \\ 70 \\ 300 \\ \hline 376 \\ \hline \end{array}$$

Expanded addition

T O	T O
4 2	6 8
+ 3 6	+ 2 7
-----	-----
7 8	9 5
	<div style="display: flex; align-items: center;"> <div style="border: 1px solid red; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-right: 5px;">1</div> <div style="border-bottom: 1px solid red; width: 100px; margin-left: 5px;"></div> <div style="color: red; font-size: small; margin-left: 5px;">tens carried over</div> </div>

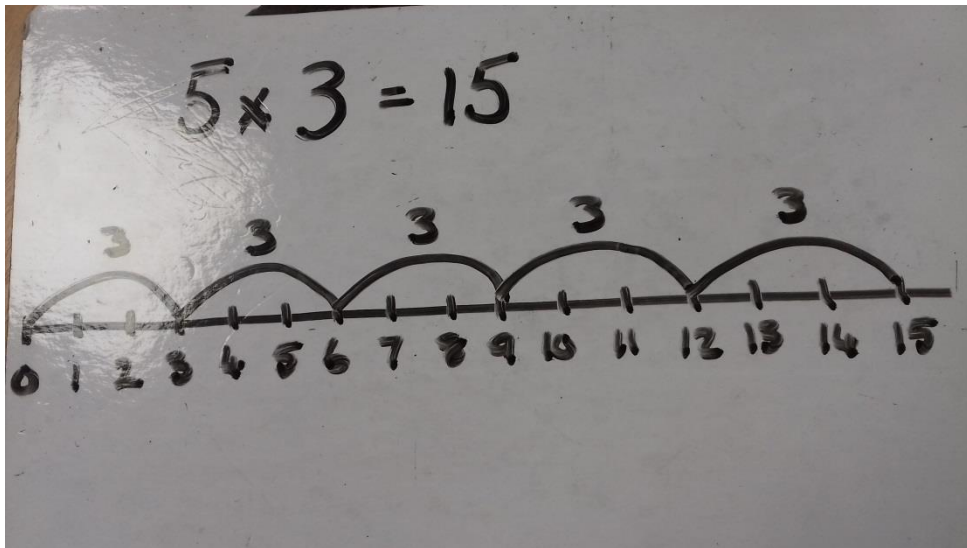
Short addition with / without carrying

T O	T O
8 6	6 4
- 2 3	- 3 8
-----	-----
6 3	3 6

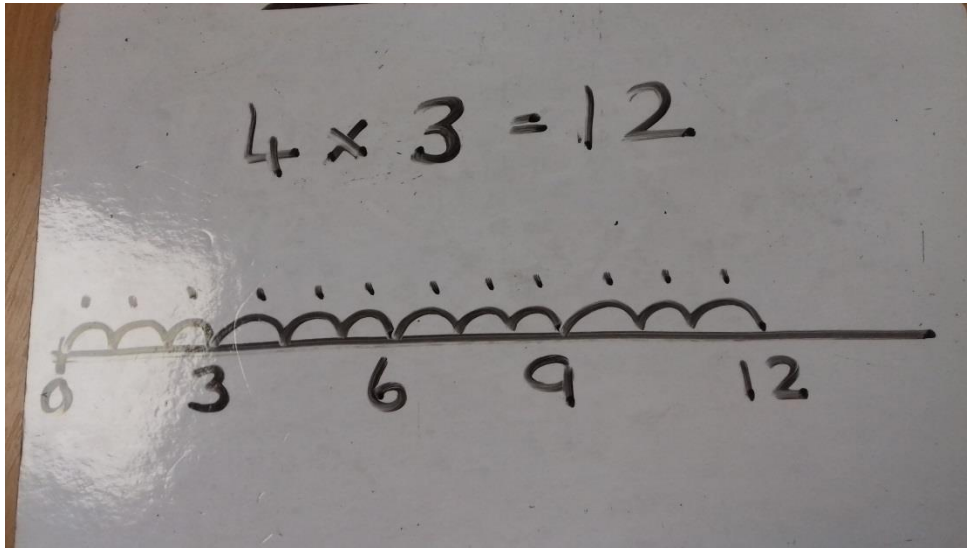
Vertical subtraction with / without decomposition

Handwritten addition problem: $23 + 34$. The tens digits (2 and 3) are connected by a line, and the ones digits (3 and 4) are connected by a line. Below, the calculation is shown as $20 + 30 = 50$ and $3 + 4 = 7$, with the final result $50 + 7 = 57$.

Addition using partitioning



Multiplication using a number line numbered in 1s



Multiplication using a blank number line

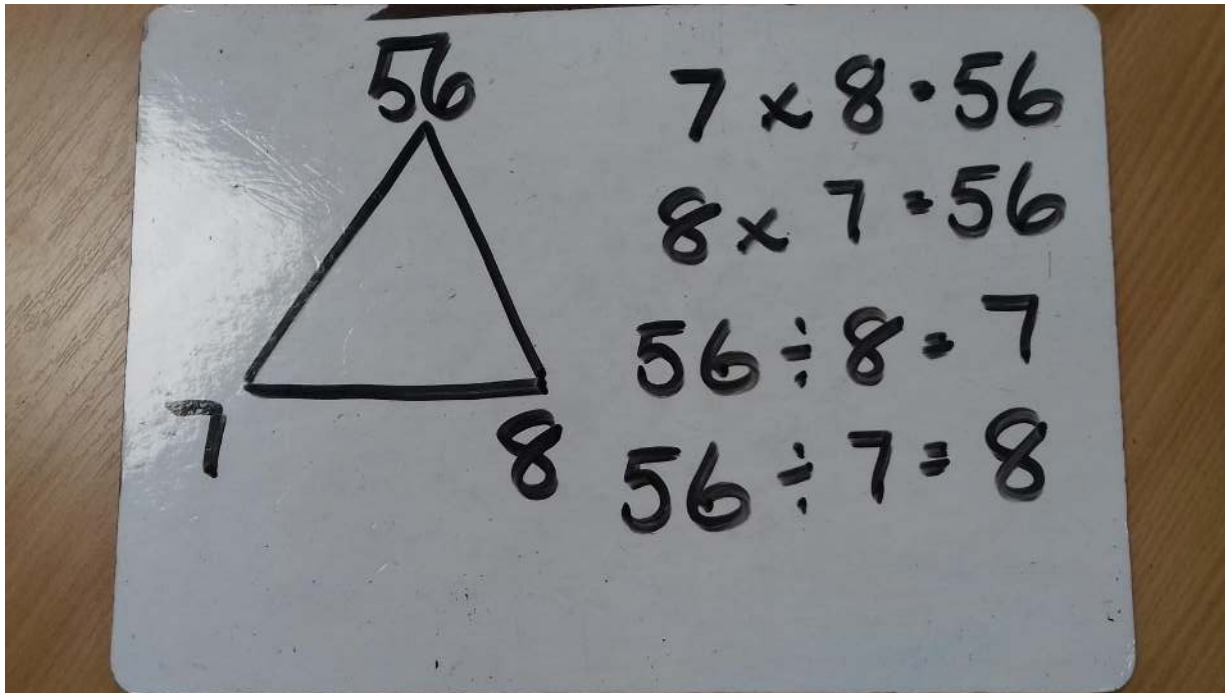


Table triangles – four facts

$$72 \times 5 = 360$$

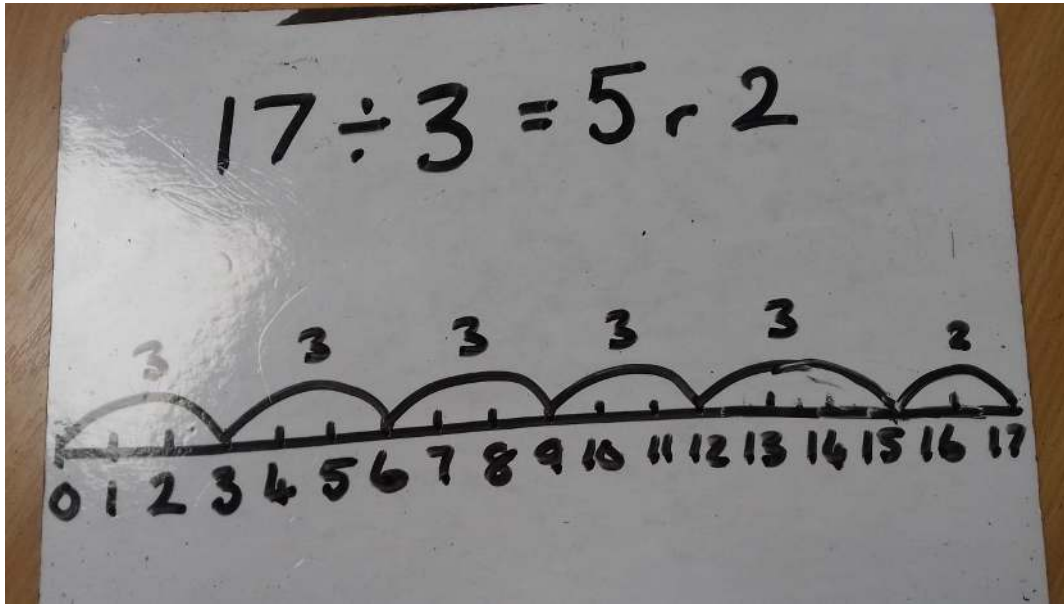
70	2	
350	10	= 360

5 ×

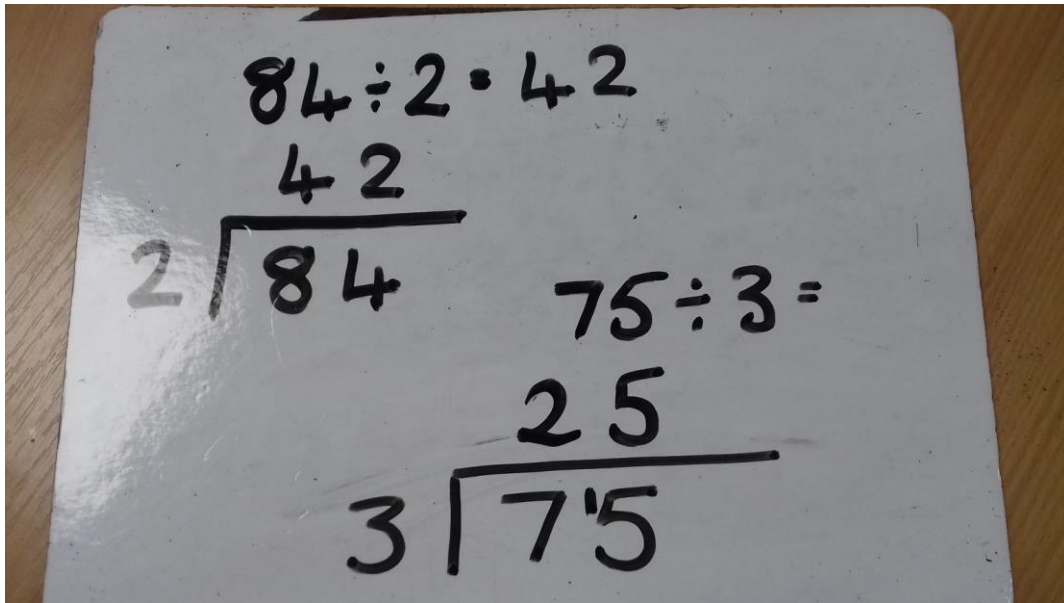
Multiplication using grid method

$\begin{array}{r} 38 \\ \times 7 \\ \hline 266 \\ \hline 5 \end{array}$	$\begin{array}{r} 24 \\ \times 16 \\ \hline 144 \quad \times 6 \\ 240 \quad \times 10 \\ \hline 384 \end{array}$
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Short and long multiplication



Division using a number line numbered in 1s



Short division with / without carrying

$$\begin{array}{r} 97 \div 3 = \\ \underline{32} \text{ r } 1 \\ 3 \overline{) 97} \end{array}$$
$$\begin{array}{r} 86 \div 3 = \\ \underline{28} \text{ r } 2 \\ 3 \overline{) 86} \end{array}$$

Short division with carrying and remainders

$$\begin{array}{r} 432 \div 9 \\ \underline{048} \\ 9 \overline{) 432} \\ \underline{36} \\ 072 \\ \underline{72} \\ 00 \end{array}$$

Long division