

## Stage 4

### Addition

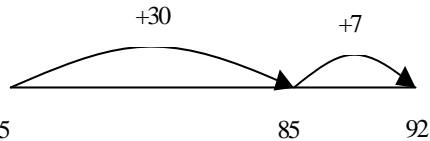
#### + and = signs and missing numbers

Continue using a range of equations as in Year 1 and 2 but with appropriate numbers.

#### Partition into tens and ones and recombine

Either partition both numbers and recombine or partition the second number only e.g.

$$\begin{aligned} 55 + 37 &= 55 + 30 + 7 \\ &= 85 + 7 \\ &= 92 \end{aligned}$$



#### Add the nearest multiple of 10, then adjust

Continue as in Year 2 and 3 but with appropriate numbers e.g.  $63 + 29$  is the same as  $63 + 30 - 1$

$$358 + 73 = 431$$

#### **Begin with the least significant number**

either or

$\begin{aligned} &300 + 50 + 8 \\ + &70 + 3 \\ \hline &300 + 120 + 11 = 431 \end{aligned}$	$\begin{array}{r} 358 \\ + 73 \\ \hline 11 \\ 120 \\ \hline 300 \\ \hline 431 \end{array}$
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Leading to 'carrying below the line.'

Extend to decimals in the context of money (vertically)

$$£ 2.50 + £ 1.75 = £ 4.25$$

$$\begin{array}{r} £ 2.50 \\ + £ 1.75 \\ \hline £ 4.25 \\ \hline \end{array}$$

(Revert to expanded methods if the children experience any difficulty.)

### Subtraction

#### - and = signs and missing numbers

Continue using a range of equations as in Year 1 and 2 but with appropriate numbers.

Find a small difference by counting up

$$\text{e.g. } 5003 - 4996 = 7$$

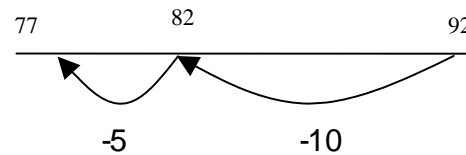
This can be modelled on an empty number line (see complementary addition below).

#### Subtract the nearest multiple of 10, and then adjust.

Continue as in Year 2 and 3 but with appropriate numbers.

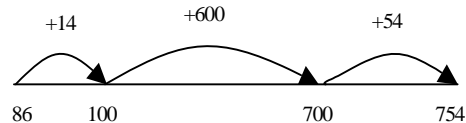
#### Use known number facts and place value to subtract

$$92 - 15 = 77$$



Complementary addition

$$754 - 86 = 668$$



$$754 - 86$$

700 and 50 and 4	→	700 and 40 and 14
- 80 and 6		- 80 and 6

600 and 140 and 14		
- 80 and 6		
600    60    8 = 668		

Using methods find the difference between two three-digit sums of money. Know that decimal points should line up.

### Multiplication

#### X and = signs and missing numbers

Continue using a range of equations as in Year 2 but with appropriate numbers

#### Partition

$$23 \times 4 = 92$$

$$\begin{aligned} 23 \times 4 &= (20 \times 4) + (3 \times 4) \\ &= (80) + (12) \\ &= 92 \end{aligned}$$

OR

Use the grid method of multiplication (as below)

#### Pencil and paper procedures

Grid method

$23 \times 7$  is approximately  $20 \times 10 = 200$

X	20	3
7	140	21
$140 + 21 = 161$		

$\begin{array}{r} 23 \\ \times 7 \\ \hline 21 \\ 140 \\ \hline 161 \end{array}$	<p>leading to</p> $\begin{array}{r} 23 \\ \times 7 \\ \hline 161 \\ \hline \end{array}$	
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OR

$\begin{array}{l} 40 \times 5 \\ 10 \times 4 \times 5 \\ 10 \times 20 \\ 200 \end{array}$	$\begin{array}{l} 40 \times 5 \\ 10 \times 4 \times 5 \times 10 \\ 10 \times 20 \times 10 \text{ or } 20 \times 100 \\ 2000 \end{array}$
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### Division

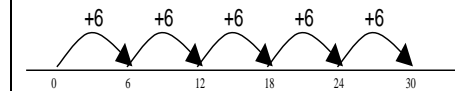
#### ÷ and = signs and missing numbers

Continue using a range of equations as in Year 2 but with appropriate numbers.

#### Sharing and grouping

$30 \div 6$  can be modelled as:

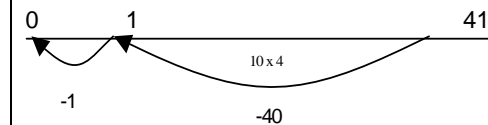
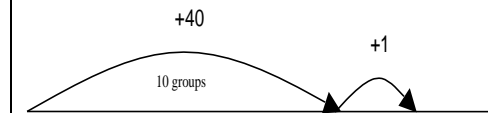
Grouping – groups of 6 taken away and the number of groups counted e.g.



Sharing – sharing among 6, the number given to each person

Remainders

$$41 \div 4 = 10 \text{ r}1$$



OR  $41 = (10 \times 4) + 1$

#### Pencil and paper procedures

$72 \div 5$  lies between  $50 \div 5 = 10$  and  $100 \div 5 = 20$

$$\begin{array}{r} 72 \\ - 50 \quad (10 \text{ groups}) \text{ or } (10 \times 5) \\ \hline 22 \\ - 20 \quad (4 \text{ groups}) \text{ or } (4 \times 5) \\ \hline 2 \end{array}$$

Answer : 14 remainder 2

6	96	
	60	(10 x 6)
	36	
	36	(6 x 6)
		Answer: 16