

Key Vocabulary:

add  
 addition  
 total  
 plus  
 more  
 increase  
 altogether  
 difference  
 subtract  
 less  
 minus  
 decrease  
 take away  
 how many are left?  
 exchange  
 estimate  
 Inverse  
 tens boundary  
 hundreds boundary

Key learning: choose an efficient method



In Year 4 we encourage you to look closely at the numbers in the calculation and make a decision about which method you will use:

**Always start at number 1 and only use a written method if you can't work it out mentally**

1. Do I know the answer? (can I just say it automatically– rapid recall)
2. Can I work it out in my head? (mental method)
3. Do I need to use a jotting? (mental method)
4. Do I need a written method? (column method)

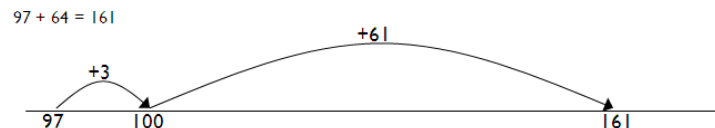
MENTAL METHOD

Key learning: bridge through 10

This method will use your rapid recall of number bonds

$97 + 64 = 161$   
 (you need to know that  $7 + 3 = 10$ )  
 Partition 64 into 61 and 3  
 $97 + 3 = 100$   
 $100 + 61 = 161$

This can be seen using a number line



MENTAL METHOD

Key learning: add and subtract 3-digit numbers by **partitioning**

We can use this method when the numbers involved are multiples of 100s, 10s and 1s:

$320 + 150 = 470$

Partition 150 into 100 and 50

$320 + 100 = 420$

$420 + 50 = 470$

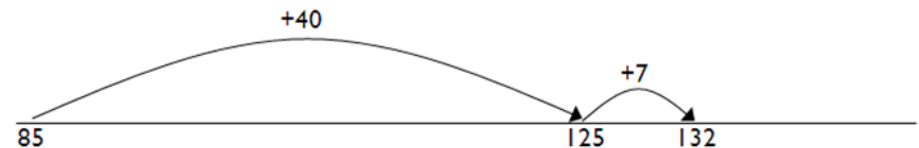
$460 - 140 = 320$

Partition 140 into 100 and 40

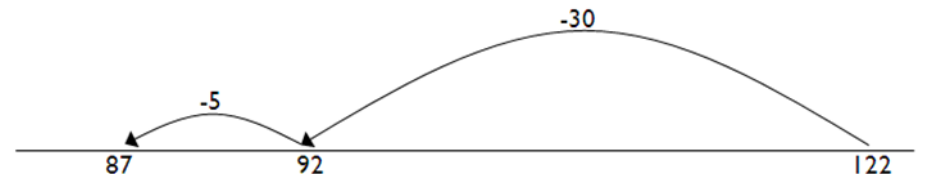
$460 - 100 = 360$

$360 - 40 = 320$

$85 + 47 = 132$  (shown using a numberline)



$122 - 35 = 87$  (shown using a numberline)



## WRITTEN METHOD

Key learning: **add** two 4-digit numbers with more than one exchange

### Column addition:

Starting from the right, add each column in turn. Carry digits to the next column if the total adds to more than 9:

1.

TTH	TH	H	T	O
4	4	5	3	+
4	5	2	7	
<hr/>				
			0	

Carry the 1 to the next column

2.

TTH	TH	H	T	O
4	4	5	3	+
4	5	2	7	
<hr/>				
		8	0	
			1	

Include the 1 in your next addition

3.

TTH	TH	H	T	O
4	4	5	3	+
4	5	2	7	
<hr/>				
8	9	8	0	
<hr/>				
			1	

## WRITTEN METHOD

Key learning: **subtract** two 4-digit numbers with more than one exchange

### Column subtraction:

Starting from the right, subtract each column in turn:

1.

3	4	6	5	3	-
			4	1	
<hr/>					
		4	5	2	7
<hr/>					
				6	

3 subtract 7 would give us a negative number, so we regroup

2.

3	4	6	5	3	-
			4	1	
<hr/>					
	4	5	2	7	
<hr/>					
3	0	1	2	6	

Exchange one lot of 10, so we now have 13—7.

Key learning: recall and use addition and subtraction facts for 100

**RAPID RECALL:** in Year 4 you are expected to know automatically number bonds to 100. Here are some examples:

$$67 + 33 = 100$$

$$54 + 46 = 100$$

$$35 + 65 = 100$$

$$32 + 68 = 100$$

$$31 + 59 = 100$$

Have you noticed its  
all about number  
bonds to 10!

Key learning: recall and use addition and subtraction facts for multiples of 100

**RAPID RECALL:** in Year 4 you are expected to know automatically multiples of 100 that total 1000

**TOP TIP:** if you know your bonds to 10, this is easy. Just use your related facts to help you learn them by heart (  $7 + 3 = 10$  so  $700 + 300 = 1000$  )

$$\begin{aligned} 100 + 900 &= 1000 \\ 200 + 800 &= 1000 \\ 300 + 700 &= 1000 \\ 400 + 600 &= 1000 \\ 500 + 500 &= 1000 \end{aligned}$$

$$\begin{aligned} 600 + 400 &= 1000 \\ 700 + 300 &= 1000 \\ 800 + 200 &= 1000 \\ 900 + 100 &= 1000 \end{aligned}$$

And the same  
for subtraction



$$\begin{aligned} 1000 - 100 &= 900 \\ 1000 - 200 &= 800 \\ 1000 - 300 &= 700 \\ 1000 - 400 &= 600 \\ 1000 - 500 &= 500 \end{aligned}$$