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

Key learning: choose an efficient method

In Year 3 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: add and subtract 3-digit numbers by counting on and back in 10s

The ones digit will never change

$$365 + 20 = 385 \qquad 782 - 60 = 722$$

$$60 + 20 = 80 \qquad 80 - 60 = 20$$

"365 ▸ 375, 385" "782 ▸ 772, 762, 752, 742, 732, 722"

MENTAL METHOD
Key learning: add and subtract 3-digit numbers by counting on and back in 1s

This method will use your rapid recall of number bonds when bridging through 10:

$198 + 6 = 204$

+2   +4
198   200   204

$153 - 7 = 146$

-4   -3
146   150   153

MENTAL METHOD
Key learning: add and subtract 3-digit numbers by counting on and back in 100s

The tens digit and ones digit will never change

$$423 + 300 = 723 \qquad 677 - 200 = 477$$

$$400 + 300 = 700 \qquad 600 - 200 = 400$$

"423 ▸ 523, 623, 723" "677 ▸ 577, 477"

Key learning: add two 3-digit numbers with 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.

```
H T O
  4 2 3
+ 2 4 8
------
    1
  1
```
Carry the one to the next column.

```
H T O
  4 2 3
+ 2 4 8
------
  7 1
  1
```
Include the 1 in your next addition

```
  H T O
  4 2 3
+ 2 4 8
------
  6 7 1
```

Key learning: subtract two 3-digit numbers with exchange

Column subtraction:

Starting from the right, subtract each column in turn.
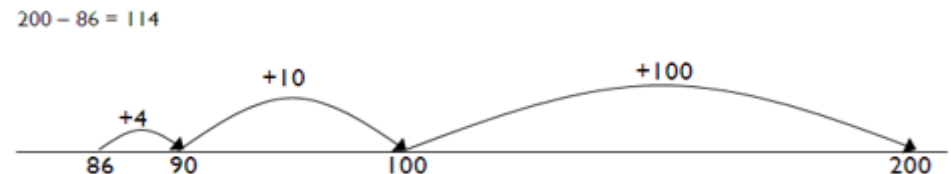
```
    4 1
  6 5 3
- 5 2 7
------
      6
```
3 subtract 7 would give us a negative number, so we regroup.

```
    4 1
  6 5 3
- 5 2 7
------
  1 2 6
```
Exchange one lot of 10, so we now have 13 - 7.

MENTAL METHOD
Key learning: Recall addition and subtraction facts for 100 (multiples of 5 and 10).

RAPID RECALL: in Year 3 you are expected to know automatically number bonds to 100. Here are some examples:

70 + 30 =100

60 + 40 =100

20 + 80 =100

35 + 65 =

5 + 5 = 10
30 + 60 = 90
90 + 10 = 100

Have you noticed it's all about number bonds to 10!

MENTAL METHOD
Key learning: find the difference by counting up through the next multiple of 10 or 100

For example, in the calculation 200- 86 it is more efficient to count up from 86 to 200 in three steps (+4, +10, +100) than use a formal written method.

$200 - 86 = 114$

```
        +4    +10        +100
    86    90      100            200
```

```
    1 9 1
  2 0 0
-   8 6
------
  1 1 4
```

This method requires a lot of exchanging, therefore more opportunities for errors.