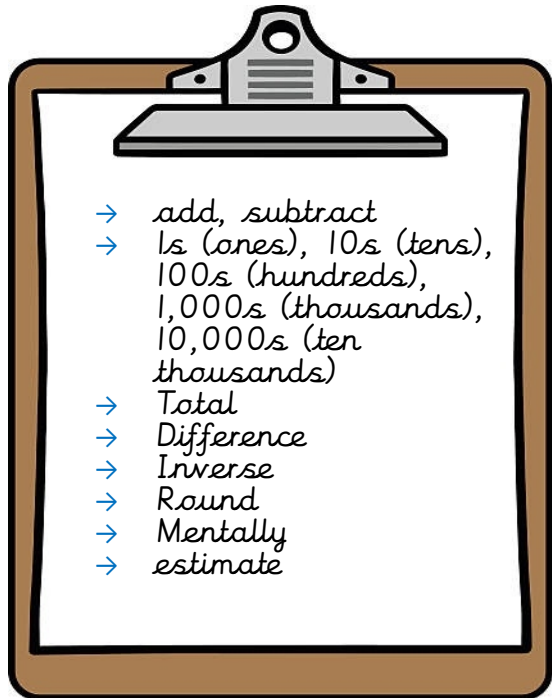




Prior Knowledge (Y4 Unit 3)

- Add and subtract numbers with up to 4 digits
- Adding and subtracting 1s, 10s, 100s, 1,000s
- Use the formal written methods of columnar addition and subtraction
- Estimate and use inverse operations to check answers
- Round any number to the nearest 10, 100 or 1,000
- Solve addition and subtraction two-step problems



Structures and Representations

Place Value Grid

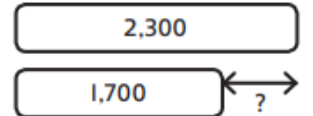


Column Methods

TTh	Th	H	T	O
1	6	9	9	8
+				
	2	1	5	6
<hr/>				
1	9	1	5	4
		1	1	1

TTh	Th	H	T	O
7	2	6	1	0
-				
3	9	4	1	5
<hr/>				
4	3	2	9	1

Bar Models



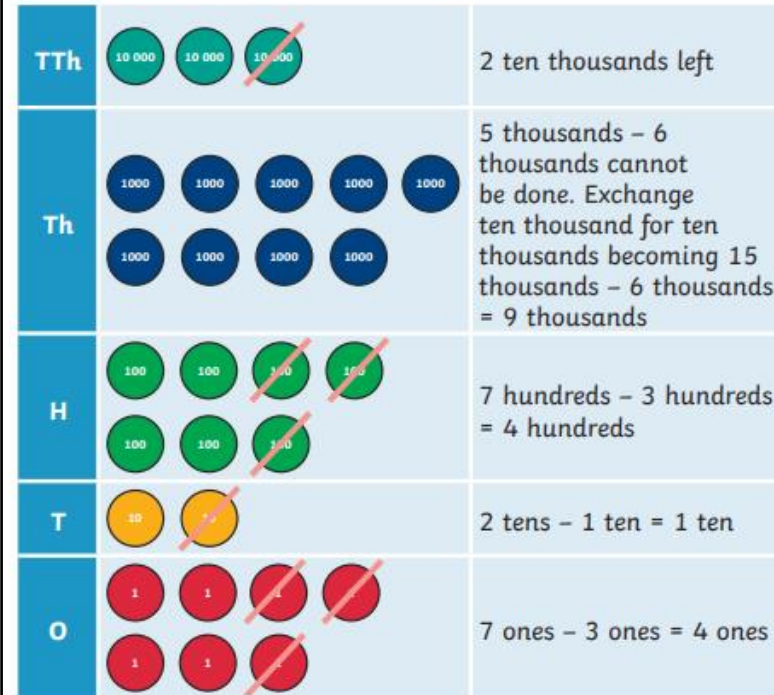
Adding Mentally

Place Value Grid: $3274 + 5601 = 8875$



Subtracting Mentally

Place Value Grid: $35\ 727 - 6\ 313 = 29\ 414$



Partitioning is useful for calculating mentally.

e.g.

$$523 + 251$$

$$500 + 200 = 700$$

$$20 + 50 = 70$$

$$3 + 1 = 5$$

$$523 + 251 = 775$$



Add and subtract whole numbers with more than 4 digits

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

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

Carry the 1 to the next column
Include the 1 in your next addition

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

Starting from the right, subtract each column in turn.

3 4, 6 5 3 -	3 subtract 7 would give us a negative number, so we regroup
4, 5 2 7	Exchange one lot of 10, so we now have 13—7.
<hr/>	
6	

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

Rounding to Estimate

$$41\ 635 + 7386 = 49\ 021$$

Round to ten:

$$41\ 630 + 7380 = 49\ 010$$

$$41\ 630 + 7390 = 49\ 020$$

$$41\ 640 + 7390 = 49\ 030$$

Rounding is not as accurate when both numbers are rounded up. A better estimate comes from "rounding" one down and one up.

Estimating on a Number Line



Solving Multi-Step Problems

Using a Bar Model

The sum of two numbers is 25 567.

The difference is 1875.



Subtract 1875 from 25 567 = 23 692.

Halve 23 692 to find smaller number = 11 846.

Add 1875 to find larger number = 13 721.

£20	£20 is used to buy 2 books costing
£3.75 £8.49 ?	£3.75 and £8.49.
£12.24 £7.76	How much change is given?

$£3.75 + £8.49 = £12.24$
 $£20.00 - £12.24 = £7.76$

Use Inverse to Check

53 476	To check $53\ 476 - 32\ 732 = 20\ 744$
32 732	use $32\ 732 + 20\ 744 = 53\ 476$

Start with a number, subtract 409 and double. I end with 6264.
To find the starting number use the inverse: halve, then add 409. Half of 6264 = 3132. $3132 + 409 = 3541$. The starting number was 3541.