



Key Vocabulary

- add
- total
- make
- plus
- sum
- more
- altogether

- subtract
- difference
- less
- minus
- take away

- 4 digit number

- mentally

- column addition

- column subtraction

- rounding

- estimate

- check

- inverse operation

- operation

Addition

Place Value Grid: $3274 + 5601 = 8875$



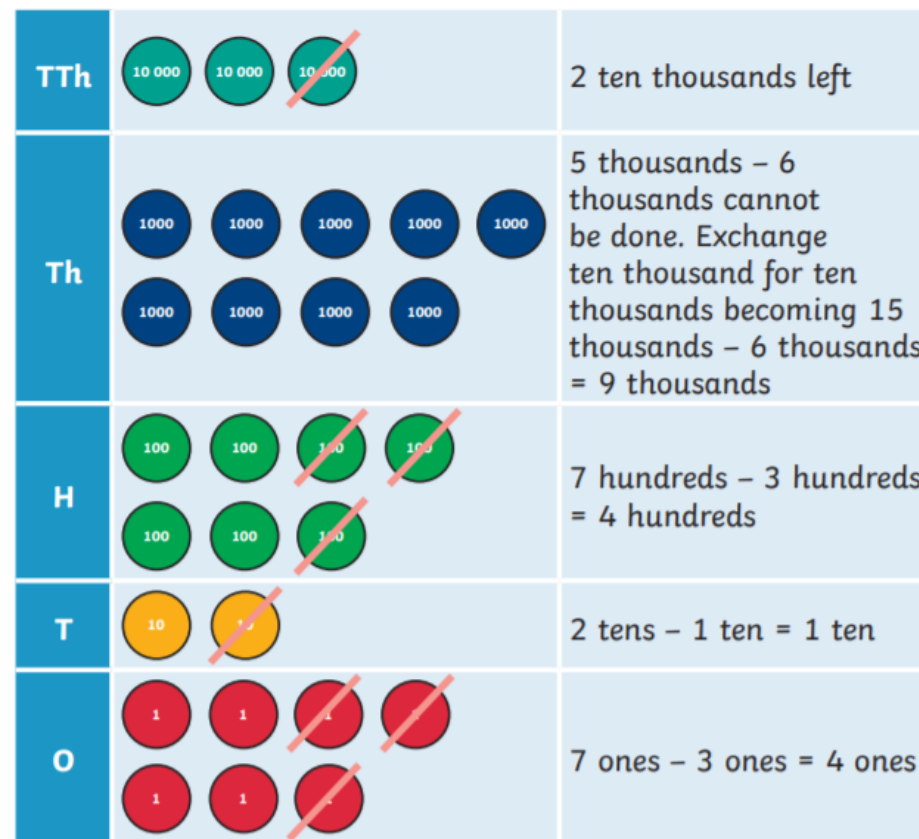
Column Method

Starting with the ones, add each column in turn. Regroup tens, hundreds, thousands, ten thousands and/or as required.

$$\begin{array}{r} 45864 \\ +23497 \\ \hline 69361 \\ \hline 111 \end{array}$$

Subtraction

Place Value Grid: $35\,727 - 6313 = 29\,414$



Column Method

Starting with the ones, subtract each column in turn. Exchange tens, hundreds, thousands and/or ten thousands as required.

$$\begin{array}{r} 6\,131 \\ 35\,742 \\ - 6\,313 \\ \hline 29\,429 \end{array}$$



Estimate and Approximate

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



The arrow is about $\frac{3}{4}$ of the way across the line so it is 40 000.



Inverse Operations

Use the 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.

Multistep 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?

$$£3.75 + £8.49 = £12.24$$

$$£20.00 - £12.24 = £7.76$$