

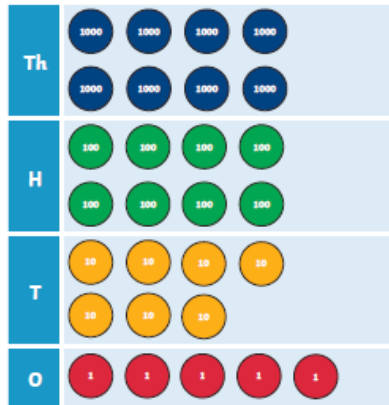
Key Vocabulary

add
total
plus
make
more
altogether
difference
less
subtract
minus
take away
mentally
column addition
column subtraction
Inverse operation
Exchange
number facts
place value
complex

Addition

Place Value Grid

$$3274 + 5601 = 8875$$



Column method

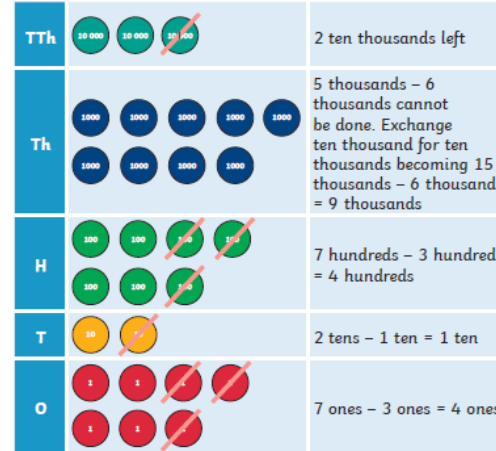
Starting with the ones, add each column in turn. Regroup tens, hundreds, thousands, ten thousands as required

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

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 ten thousands as required

$$\begin{array}{r} 35727 \\ - 6313 \\ \hline 29414 \end{array}$$

Estimate and approximate

Rounding to Estimate

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

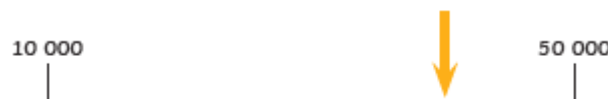
Round to ten:

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

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

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

Estimating on a Number Line



We can **round numbers to the nearest 10** to find an **estimate** answer before calculating the calculation. We can then check our answer against our estimate as a way of checking.

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

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

Inverse operations

Using the inverse to check answers

53 476

32 732

20 744

To check $53,476 - 32,732 = 20,744$
Use $32,732 + 20,744 = 53,476$

Bar models can help you understand the inverse operation.

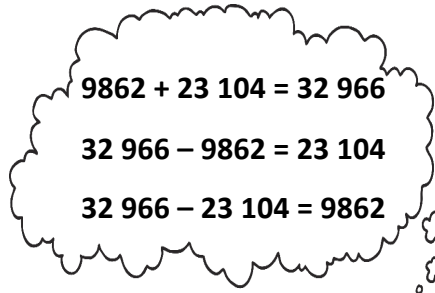
How many number sentences can you make from the calculation below?

$$23\ 104 + 9862 = 32\ 966$$

$$9862 + 23\ 104 = 32\ 966$$

$$32\ 966 - 9862 = 23\ 104$$

$$32\ 966 - 23\ 104 = 9862$$



I am thinking of a number. I add 7852 and then subtract 2607. I now have 32 451. What is my number?

$$27\ 206 \quad (32\ 451 + 2607 = 35\ 058, 35\ 058 - 7852 = 27\ 206)$$

When calculating 'I'm thinking of a number' questions, we need to do the inverse of every calculation.

E.g. If a number is added, we need to subtract it

If a number is subtracted, we need to add it

If a number is multiplied, we need to divide

If a number is divided, we need to multiply

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 small number = 11,846
Add 1875 to find larger number = 13,721

£20		
£3.75	£8.49	?
£12.24		£7.76

£20 is used to buy 2 books costing £3.75 and £8.49

The change given would be £7.76

$$£3.75 + £8.49 = £12.24$$

$$£20.00 - £12.24 = £7.76$$