Addition and Subtraction

Key Vocabulary

- Add
- Total
- Make
- Plus
- Sum
- More
- Altogether
- Difference
- Subtract
- Less
- Minus
- Take away
- Column addition
- Column subtraction
- Estimate
- Inverse operation
- Number facts
- Place value
- Complex

Addition

Place Value Grid: 3274 + 5601 = 8875

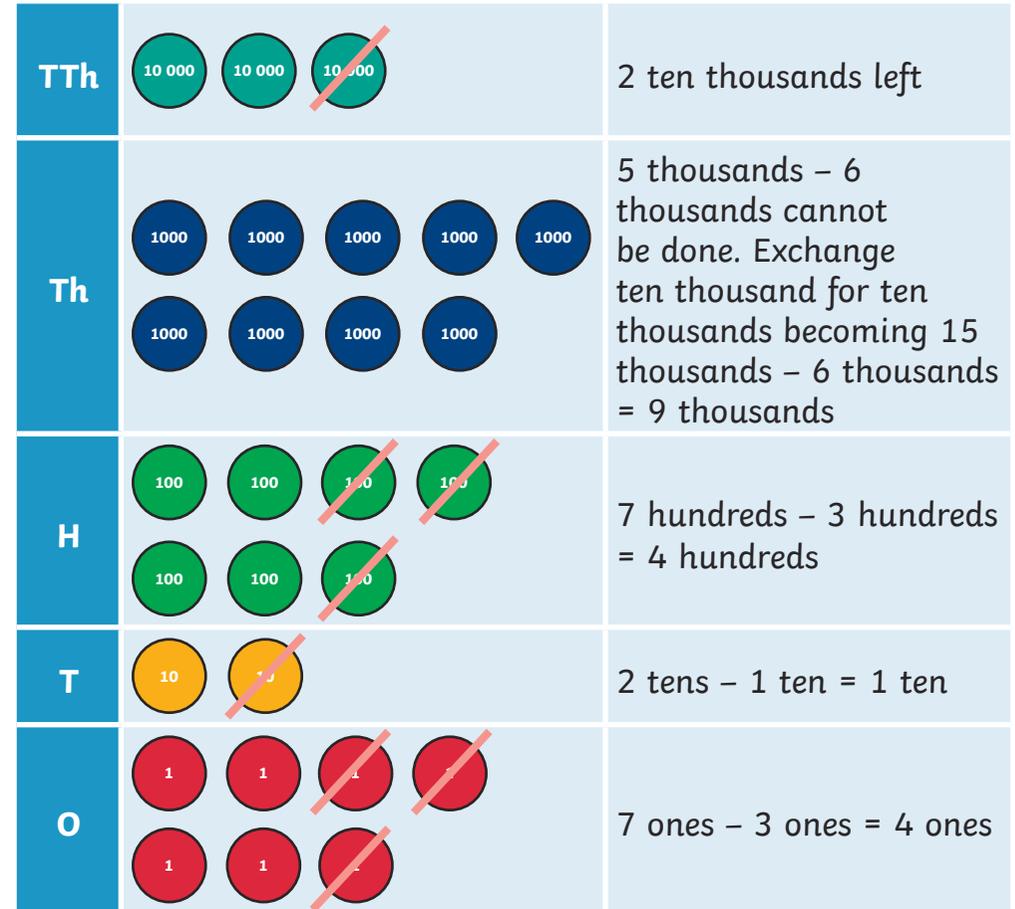|	
Th	1000 1000 1000 1000 / 1000 1000 1000 1000
H	100 100 100 100 / 100 100 100 100
T	10 10 10 10 / 10 10 10
O	1 1 1 1 1
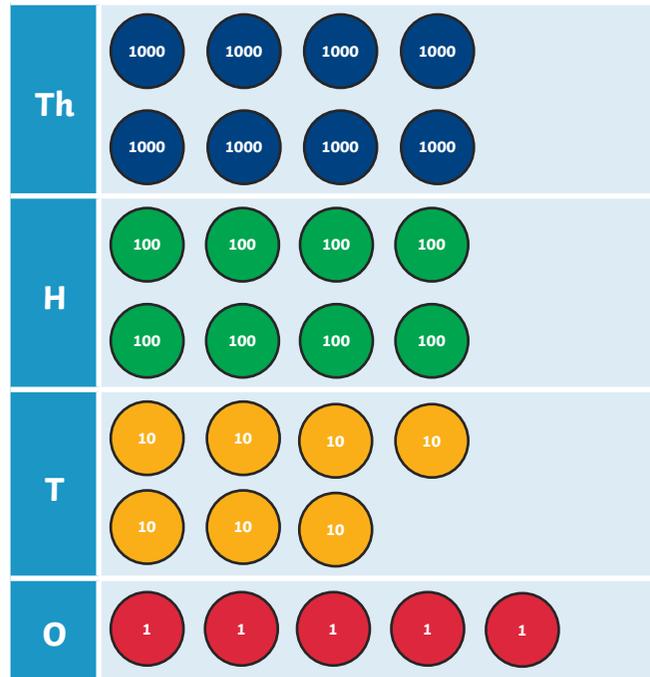
Column Method

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

$$\begin{array}{r} 45864 \\ +23497 \\ \hline 69361 \\ \hline {\scriptstyle 1\ 1\ 1} \end{array}$$

Subtraction

Place Value Grid: 35 727 – 6313 = 29 414

TTh	10 000 10 000 ~~10 000~~	2 ten thousands left
Th	1000 1000 1000 1000 1000 / 1000 1000 1000 1000	5 thousands – 6 thousands cannot be done. Exchange ten thousand for ten thousands becoming 15 thousands – 6 thousands = 9 thousands
H	100 100 ~~100~~ ~~100~~ / 100 100 ~~100~~	7 hundreds – 3 hundreds = 4 hundreds
T	10 ~~10~~	2 tens – 1 ten = 1 ten
O	1 1 ~~1~~ ~~1~~ / 1 1 ~~1~~	7 ones – 3 ones = 4 ones

Column Method

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

$$\begin{array}{r} {\scriptstyle 6\ 13\ 1} \\ 35742 \\ -\ \ 3476 \\ \hline 32266 \end{array}$$

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Addition and Subtraction

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

10 000   50 000

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	
32 732	20 744

To check 53 476 – 32 732 = 20 744 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.

25 567

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		
£3.75	£8.49	?
£12.24		£7.76

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

How much change is given?

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