

Key Vocabulary

add

total

plus

sum

more

altogether

difference

less

subtract

minus

take away

mentally

column addition

column subtraction

Inverse operation

exchange

Add 4 digit numbers

No exchange

$$\begin{array}{r} 5162 \\ +3427 \\ \hline 8589 \end{array}$$

Starting with the ones, add each column in turn.

One exchange

$$\begin{array}{r} 5162 \\ +3497 \\ \hline 8659 \\ \hline 1 \end{array}$$

Starting with the ones, add each column in turn. When adding 6 tens + 9 tens = 15 tens - 1 hundred + 5 tens Place 1 hundred under the hundreds answer and 5 tens in the answer.

Multiple exchanges

$$\begin{array}{r} 5864 \\ +3497 \\ \hline 9361 \\ \hline 111 \end{array}$$

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

Subtract 4 digit numbers

No exchange

$$\begin{array}{r} 5789 \\ - 3421 \\ \hline 2368 \end{array}$$

Starting with the ones, subtract each column in turn.

One exchange

$$\begin{array}{r} 61 \\ 5749 \\ - 3471 \\ \hline 2278 \end{array}$$

Starting with the ones, subtract each column in turn. When subtracting 4 tens - 7 tens, exchange 1 hundred to make: 14 tens - 7 tens = 7 tens

Multiple exchanges

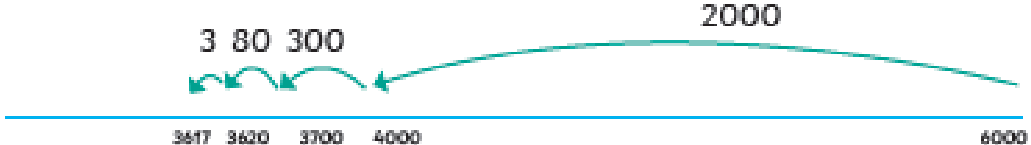
$$\begin{array}{r} 6131 \\ 5742 \\ - 3476 \\ \hline 2266 \end{array}$$

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

Efficient Subtraction

Use mental methods to find the most **efficient** methods of subtraction

Calculate  $6000 - 3617 = 2383$



# Add and subtract in 1's, 10's, 100's and 1000's

Here is the number 3124



Add 2 thousands - 5124

Add 5 hundreds - 5624

Subtract 2 tens - 5604

Add 5 ones - 5609

Here is the number 6708

Thousands	Hundreds	Tens	Ones
6	7	0	8

Add 3 thousands - 9708

Subtract 4 hundreds - 9308

Add 5 tens - 9358

Subtract 7 ones - 9351

Crossing ones, tens or hundreds

$$5392 + 4 \text{ tens} = 5432$$

crossing tens

$$5126 - 600 = 4526$$

crossing hundreds

When crossing ones, tens or hundreds, more than one digit will change.

## Estimate Answers

Use knowledge of rounding to **estimate answers** for calculations or word problems

$$1635 + 386 = 2021$$

Round to the nearest ten

$$1640 + 390 = 2030$$

Round to the nearest hundred

$$1600 + 400 = 2000$$

Both give a reasonable estimate, but rounding the nearest ten is more accurate.

$$9362 - 5729 = 3622$$

Round to the nearest hundred

$$9400 - 5700 = 3700$$

Round to the nearest thousand

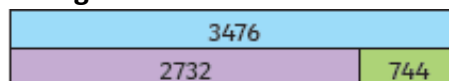
$$9000 - 6000 = 3000$$

Rounding to the nearest hundred is much more accurate in this case.

## Checking Strategies

Explore ways of **checking** to see if an answer is correct by using inverse operations

Using the inverse



$3476 - 744 = 2732$  can be checked using

$$2732 + 744 = 3476$$

This part whole shows the inverse calculations using these three numbers.



$1549 + 2688 = 4237$	$2688 + 1549 = 4237$
$4237 - 1549 = 2688$	$4237 - 2688 = 1549$

Adding in a different order

$$420 + 372 + 280 =$$

Change to

$$420 + 280 + 372 =$$

$$\text{As } 420 + 280 = 700$$

$$(\text{because } 42 + 28 = 70)$$

$$420 + 280 + 372 = 700 + 372 = 1072$$