



**Key Vocabulary**

column addition  
 add  
 total  
 plus  
 sum  
 more  
 altogether  
 column subtraction  
 difference  
 subtract  
 less  
 take away  
 minus  
 mentally, orally  
 exchange  
 estimate  
 solve problems  
 number facts  
 inverse

**Addition and Subtraction Methods**

**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

$$\begin{array}{r} 5162 \\ +3497 \\ \hline 8659 \\ \phantom{0}1 \end{array}$$

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

$$\begin{array}{r} 5864 \\ +3497 \\ \hline 9361 \\ \phantom{0}11 \end{array}$$

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.



## Add and Subtract 1s, 10s, 100s and 1000s

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.

## Round to Estimate

$$1635 + 386 = 2021$$

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

$$9400 - 5700 = 3700$$

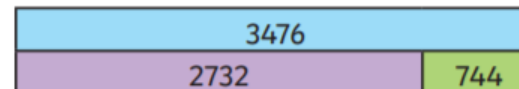
Round to the nearest thousand

$$9000 - 6000 = 3000$$

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

## Checking Strategies

**Using 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**

$$420 + 280 + 372 =$$

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

(because  $42 + 28 = 70$ )

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