



Key Terms and questions

Addition add total plus sum more altogether increase double near double

Subtraction difference subtract less minus take away

How many more to make..? How much more? How many more? How many fewer?

addend + addend = sum

minuend - subtrahend = difference

Vocabulary

addition +	Bringing two or more numbers (or things) together to make a new total/ sum.
subtraction -	Taking one number away from another.
mental/ mentally	Calculating in your head.
column method	Addition and subtraction by writing one number below the other and then adding/ subtracting one column at a time
estimate	To find a value that is close enough to the right answer, usually with some thought or calculation involved.
inverse	Inverse means the opposite in effect. The reverse of. The Inverse of Adding is Subtracting
commutative	Numbers can be added in any order.
addend	A number that is added to a number.
minuend	A number from which a another is subtracted.
subtrahend	A number subtracted from another.

Formal Methods

Column addition and subtraction

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

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

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

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

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.



Adding and subtracting with decimals

$$\begin{array}{r} \pounds 23.59 \\ + \pounds 7.55 \\ \hline \pounds 31.14 \\ \text{1 1 1} \end{array}$$

$$\begin{array}{r} 31.80 \\ + 00.45 \\ \hline 32.25 \end{array}$$

$$\begin{array}{r} 76.3 \\ - 34.1 \\ \hline 42.2 \end{array}$$

$$\begin{array}{r} \pounds 10 \pounds 1 . 10\text{p } 1\text{p} \\ 56 \quad 14 \quad . \quad 78 \quad 11 \\ - \quad 2 \quad 5 \quad . \quad 6 \quad 2 \\ \hline \pounds 3 \quad 9 \quad . \quad 1 \quad 9 \end{array}$$

Using rounding 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

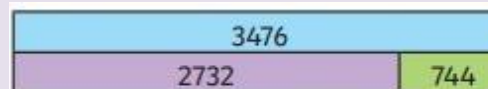
$9400 - 5700 = 3700$

Round to the nearest thousand

$9000 - 6000 = 3000$

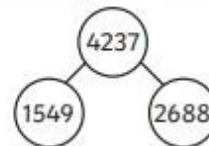
Rounding to the nearest hundred is much more accurate in this case.

Use the inverse to check your answer



$3476 - 744 = 2732$ can be checked using
 $2732 + 744 = 3476$

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



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

Commutative and Associative

Commutative

$342 + 187$ is equal to
 $187 + 342$

Associative

Addition can be done in any order

$46 + 39 + 14 = 46 + 14 + 39$

Addition

$8 + 9 = 17$

addend + addend = sum

Subtraction

$17 - 9 = 8$

minuend - subtrahend = difference