## Add two 3-digit numbers - not crossing

 10 or 100(1)

Complete the column addition.
Use base 10 to help you.

| Hundreds | Tens | Ones |
| :---: | :---: | :---: | :---: |
| He |  |  |
|  |  |  |
|  |  |  |
|  |  |  |


2. Kim uses counters and a place value chart to help her work out $362+205$

a) Draw counters to complete the chart.
b) Complete the column addition.
c) Which column did you add first? Talk to a partner about your method.

Mrs Morgan drives 230 km on Monday.
On Tuesday she drives 169 km .
How far does she drive in total on Monday and Tuesday?

4. Complete the number line to work out the addition.
a) $711+140=\square$

b) $414+203=\square$

c) $502+384=$
Complete the additions
a) $736+203=$ $\square$
c) $£ 391+£ 505=\square$
b) $184+105=$ $\square$

6 The table shows the number of boys and girls in two schools.

|  | Boys | Girls |
| :---: | :---: | :---: |
| School A | 224 | 305 |
| School B | 400 |  |

a) The total number of children in each school is equal.

Without working it out, which school has more girls?
$\qquad$

How do you know?
b) How many girls are there in school B?
$\square$

7 Three children each work out an addition problem.

- Each child uses the same six digits.
- Each addition gives the same answer of 888
- Each child adds two different numbers together.

Work out a possible set of addition problems.


8 Here is an addition pyramid.
Add the two numbers below to make the number above.
a) Complete the addition pyramid.

b) Complete the addition pyramid.

None of the additions should have an exchange.
The total is 768


Compare answers with a partner.

Add two 3-digit numbers - crossing 10 or 100

D Complete the column addition.
a) $235+157$

b) $372+144$

| Hundreds | Tens | Ones |
| :---: | :---: | :---: |
|  |  | $\square$ |
|  |  | : |



3 Dani uses counters to represent an addition.

a) What addition is Dani trying to work out?
b) Work out the answer to the addition.
c) How many exchanges did you have to do?
$\square$

4 Work out the additions.
a)

c) $718+108$

b)

d) $526+294$

a) Tick the additions with an answer that ends in zero.

b) Did you have to work out all of the additions?
c) Complete the sentences.

The answer to $175+212$ ends with a $\square$
The answer to $334+178$ ends with a

The answer to $716+$ $\square$ ends with a 3

6 Fill in the missing digits.
a)

c)

b)

d)


7 Dexter bakes 148 biscuits on Monday.
On Tuesday he bakes 273 more biscuits than he did on Monday.
a) How many biscuits does Dexter bake on Tuesday?

b) How many biscuits does he bake in total on Monday and Tuesday?

(8) Write two addition calculations that have:

- 1 exchange
- 2 exchanges.

Compare answers with a partner.

Complete the column subtractions.
a) 358-226

b) $726-303$


2 Complete the subtractions.
a)

b)

(3) Ron is working out 785-257


Do you agree with the way Ron has set out the subtraction? Why?
$\qquad$
$\qquad$Use the number line to work out the subtraction.
a) $355-240=\square$

b) $835-501=\square$


A TV costs $£ 120$ less than this computer. How much does the TV cost?


There are 849 people at a concert.
There are 625 adults at the concert.
a) How many children are at the concert?
$\square$
b) How many more adults than children are at the concert?


7 What are the values of each of the shapes?
a)

$\square$
(8) Complete the part-whole models.
a)

b)

9) Eva is subtracting 727 from 1,000


Why does Eva's method work?
Talk about it with a partner.
Use Eva's method to complete the subtractions.
$1,000-285=$ $\square$

Subtract a 3-digit number from a 3-digit number - exchange

I Complete the column subtractions.
a) 254-126


What exchange did you have to make?
b) $532-281$

| Hundreds | Tens | Ones |
| :---: | :---: | :---: |
| 100 | 100 | 0 |
| 100 | 100 |  |
| 100 |  |  |



What exchange did you have to make?
2. Which of these calculations need an exchange?

Tick your answers.

|  |  | $\mathbf{H}$ | $\mathbf{T}$ | $\mathbf{O}$ |  |
| :---: | ---: | ---: | ---: | ---: | ---: |
|  |  | 6 | 5 | 8 |  |
|  | - | 1 | 4 | 4 |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |


|  |  | $\mathbf{H}$ | $\mathbf{T}$ | $\mathbf{O}$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | 3 | 2 | 3 |  |
|  | - | 1 | 1 | 7 |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |


|  |  | $\mathbf{H}$ | $\mathbf{T}$ | $\mathbf{O}$ |  |
| :--- | ---: | ---: | :--- | :--- | :--- |
|  |  | 4 | 2 | 9 |  |
|  | - | 1 | 7 | 2 |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

## How do you know?

(3) Work out the subtractions.
a) $735-218$

$$
\text { c) } 415-179
$$


b) $428-163$

d) 382-194

4) Talk about the mistake that has been made.

$$
\begin{array}{r}
546 \\
-\quad 283 \\
\hline 343 \\
\hline
\end{array}
$$

(5) Complete the subtractions.
a)

b)


6 Work out the missing digits in these subtractions.
a)

b)

(7) Two points are marked on a number line.


What is the difference between the two points?
(8) Fill in the missing numbers.
a) $179+$

c) $95+\square+138=870$
b) 718 - $\square$ $=348$
d)
Here are 3 buildings.

- A is 150 m tall
- $B$ is 317 m taller than $A$
- C is 223 m shorter than B


How much taller is $C$ than $A$ ?
(10) Aisha buys these items.


How much change does she have from $£ 1,000$ ?
$\square$

Complete the calculations.
Use the place value chart to help you.

| $1,000 \mathrm{~s}$ | 100 s | 10 s | 1 s |
| :---: | :---: | :---: | :---: |
| 5 | 3 | 7 | 8 |

$\square$
a) $5,378+200=$
e) $5,378-60=$

1s, 10s, 100s, 1,000s
(I)

Dora makes a number on a place value chart.

| Th | H | T | O |
| :---: | :---: | :---: | :---: |
| 1,000 | 1000 | 100 | 1 |
| 10000 |  |  |  |

a) What number has Dora made? $\square$
b) Add 3 ones to Dora's number.

What number do you have? $\square$
c) Add 2 tens to Dora's number. What number do you have now? $\square$
d) Subtract 2 hundreds from Dora's number. What number do you have now? $\square$
e) Add 5 thousands to Dora's number. What number do you have now? $\square$

3 Complete the calculations
a) $6,058+1=$ $\square$
$\square$

b) $6,058+20=$ $\square$

$$
\begin{aligned}
& 6,058+30=\square \\
& 6,058+40=\square
\end{aligned}
$$

$$
6,058+4=
$$

$\square$

$$
5+6,058=
$$

$\square$
$\square$
b) $5,378+20=$ $\square$
f) $5,378-3,000=$ $\square$
c) $5,378+2,000=$ $\square$ g) $300+5,378=$ $\square$
d) $5,378-6=$ $\square$
h) $5,378-300=$ $\square$
4) Mo is going to add 100 to each number. Circle the numbers where the 1,000 s will change.
2,450
3,928
4,180
5,905
972

What do you notice?
$\qquad$

Mr Hall has $£ 1,342$ in the bank.
a) Mr Hall puts in $£ 500$ more.

How much money does he have in the bank now?

b) Then he puts in $£ 600$ more.

How much money does Mr Hall have in the bank now?
c) Then Mr Hall takes out $£ 60$

How much money does he have in the bank now?

7 Write the missing numbers.




b) $6,421-700=$

$6,421+700=$ $\square$
d) $3,500-\square=2,700$


Which calculations were easy to work out?
Which were more difficult to work out?

8

a) Use Ron's method to work out $3,812+1,400$

Could you have worked this out mentally?
b) Use Ron's method to complete the calculations.

(1) Calculate $314+522$

Use the place value chart to help you.

2. a) Calculate $3,214+5,122$

Use the place value chart to help you.

b) Now calculate 3,214 + 122 in the same way.

$$
3,214+122=\square
$$

c) What do you notice about your answers to part a) and part b)?

Complete the calculations.
a) $4,122+2,605=\square$
b) $3,709+4,160=\square$
c) $247+1,032=\square$
d) $3,007+560=\square$
(4) Alex is calculating $5,702+125$

|  |  | Th | H | T | 0 |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 | 7 | 0 | 2 |
|  | + | 1 | 2 | 5 |  |
|  | 6 | 9 | 5 | 2 |  |
|  |  |  |  |  |  |

Do you agree with Alex? $\qquad$
Explain your answer.
$\qquad$

Complete the calculation.
$\square$The distance from Scotland to France is $1,550 \mathrm{~km}$.
The distance from France to Spain is $1,002 \mathrm{~km}$.
Teddy is travelling from Scotland to France and then France to Spain.

How far will he travel in total?

6) Whitney and Jack are playing a game.

Whitney has 1,323 points.
Jack has 230 points more than Whitney.
How many points do they have altogether?

(7) Fill in the missing digits.

|  |  | $\mathbf{T h}$ | $\mathbf{H}$ | $\mathbf{T}$ | $\mathbf{O}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 3 |  | 2 |  |
|  | + |  | 4 |  | 6 |
|  |  | 8 | 7 | 9 | 6 |
|  |  |  |  |  |  |

(8) Complete the calculation.
$2,415+5,142=\square$


What do you notice about the numbers in the question? How does this affect the answer?

Think of some more calculations like this.
Try them out with a partner.

1) Complete the calculations.

Use the place value charts to help you.
a) $3,117+2,542=\square$

b) $3,117+2,544=$

c) What do you notice about the calculations in part a) and part b)?

Which did you find easier and why?
d) What happens when you have more than 10 counters in one column?
(2) Complete the calculations.
a) $4,365+2,617=\square$
b) $1,907+5,068=$ $\square$
c) $6,792+163=\square$
d) $3,247+1,930=\square$
(3) Complete the calculations.
a)

b)


d)


Four children have calculated 4,635 + 183

## Rosie's method


$4,635+183=47,118$

## Alex's method


$4,635+183=4,818$

Jack's method

$4,635+183=4,718$
Teddy's method

$4,635+183=6,465$


Mr Robson has $£ 2,100$ to spend on a mobile phone and a laptop.

What combinations of laptops and phones can he afford to buy?

6 Fill in the missing digits.
a)

b)


Whose method is correct? $\qquad$
Talk about the mistakes the other children have made.

Add two 4-digit numbers - more than one exchangeComplete the calculation.


2
Who has got each question correct? Tick your answer.
a) Nijah

|  |  | $H$ | $T$ | $O$ |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  |  | 4 | 4 | 5 |  |
|  | + | 3 | 4 | 8 |  |
|  |  | 78 | 1 | 3 |  |
|  |  |  |  |  |  |

## Scott



## b) Nijah



Scott

|  | Th | $H$ | T | 0 |
| :--- | ---: | ---: | ---: | ---: |
|  | 4 | 8 | 2 | 6 |
| + |  | 1 | 7 | 8 |
|  | 5 | 0 | 0 | 4 |
|  | 1 | 1 | 1 |  |

What mistake has the other person made in each calculation?

Talk about it with a partner.
(3) Complete the additions.
a)

c) $3,784+2,526$

b)
d) $79+654+1,312$



4
Write each calculation in the correct column.

| $712+394$ $1,312+2,527$ | $1,350+3,760$  <br> No exchange <br> needed One exchange <br>  More than one <br> exchange <br>   |
| :--- | :--- |

Write one more calculation of your own in each column.

Dexter is playing a computer game.
The table shows the number of points he gets in each round.

| Round | 1 | 2 | 3 |
| :---: | :---: | :---: | :---: |
| Number of points | 3,550 | 2,175 | 1,895 |

a) How many points does Dexter have at the end of Round 2?

b) He needs 8,000 by the end of Round 3 to win the game

Does Dexter win the game? $\qquad$
Show your workings.


6 Work out the missing digits.
a)

b)

c) Find two possible answers.


How did you work this out? Talk about it with a partner Are there any more answers?

## Subtract two 4-digit numbers -

 no exchangeUse the place value chart to work out 5,624-2,301
$5,624-2,301=$ $\square$
Complete the calculation.


What is the same about the representations? What is different?

a) 3,412-1,201

b) $5,361-3,241$


$$
\text { c) } 7,405-404
$$


(3) Complete the calculations.
a)

c)

b)


Aisha is calculating 7,585-316

|  |  | Th | $H$ | T | 0 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 7 | 5 | 8 | 5 |  |
|  | - | 3 | 1 | 6 |  |  |
|  | 4 | 4 | 2 | 5 |  |  |
|  |  |  |  |  |  |  |

$$
7,585-316=4,425
$$

Do you agree with Aisha? $\qquad$ -

Explain your answer.
5) Complete the calculations. Show your workings.
a) $6,205-104=$ $\square$

b) $3,749-1,642=$

c) $\square$ $=5,371-3,260$
d)


6) The distance from $A$ to $B$ is $2,365 \mathrm{~m}$.

The distance from $A$ to $C$ is $5,875 \mathrm{~m}$ in the same direction. How far is C from B?

$\square$

7 Whitney and Ron are playing a game.
Whitney has 1,353 points.
Ron has 230 points fewer than Whitney.
How many points do they have altogether?

## Subtract two 4-digit numbers -

 one exchange
a) Use the place value chart to complete the calculation.

$$
5,435-3,215=\square
$$

b) Use the place value chart to complete the calculation.

$$
5,435-3,216=
$$

$\square$
c) Which calculation was easier? Talk about it with a partner.
d) What happens when you don't have enough counters in a column to take away?
$\qquad$
$\qquad$

2 Complete the sentences.
1 ten can be exchanged for $\square$ ones.

1 hundred can be exchanged for 10 $\qquad$ —.

1 thousand can be exchanged for $\square$
$\qquad$


3
Complete the calculations.
a)

c)

b)
Complete the calculations.
a)

c)

b)


## Complete the calculations.

a)

b)


Annie is calculating 3,467-2,148
Here are her workings.

|  |  | Th | H | T | 0 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 3 | 4 | 6 | 7 |  |
|  | - | 2 | 1 | 4 | 8 |  |
|  |  | 1 | 3 | 2 | 1 |  |
|  |  |  |  |  |  |  |

Do you agree with Annie? $\qquad$
Explain your answer.

7
A car costs $£ 8,716$
A motorbike costs $£ 2,341$ less than the car. How much does the motorbike cost?

8 Jack is thinking of two 4-digit numbers.


What is the sum of the two numbers?

## Subtract two 4-digit numbers - more than one exchange

Kim has made a number using base 10

a) Subtract 8 from Kim's number.

b) Explain the method you used.
$\qquad$
c) Subtract 20 from Kim's number.

d) Subtract 900 from Kim's number. $\square$
e) Complete the subtractions.

$$
1,702-28=\square
$$

$\square$
(2) Use the place value chart to complete the subtractions.

| H | T | O |
| :---: | :---: | :---: |
| 100 | 100 | 10 |
| 100 | 100 | 10 |
| 100 |  | 10 |

a) $564-354=$ $\square$
c) $564-365=$ $\square$
b) $564-355=$ $\square$
Look at your calculations in parts a), b) and c).
What is the same? What is different?
(3) Use the place value chart to complete the subtractions.

| Th | H | T | 0 |
| :---: | :---: | :---: | :---: |
| 1,000 | 10000 | 100 | 100 |
| 1,000 | 1000 | 10 | 1 |
| 1000 |  |  | 1 |

a) $5,435-2,036=$ $\square$
b) $5,436-2,036=$ $\square$
c) $5,437-2,036=\square$

Look at your calculations in parts a), b) and c).
What is the same? What is different?
(4) Complete the calculations.
a)

c)

b)

d)


A jug contains $1,500 \mathrm{ml}$ of juice.


The juice is poured into 2 glasses. Each glass holds 258 ml of juice. How much juice is left in the jug?

6) Work out the missing digits.
a)

b)


7 Arrange all the digit cards to make a possible subtraction for each description.

a) There are two exchanges.

The answer is
less than 2,000

b) There are two exchanges.

The answer is
greater than 4,000


## Efficient subtraction

a) Use the column method to work out 704-696

b) Count on the number line to work out 704-696

c) Which method do you prefer? $\qquad$
Why?
$\qquad$
$\qquad$
2) Complete the subtractions by counting on.
a) $902-897=$ $\square$
c) $2,027-1,999=$ $\square$
b) $1,902-1,894=\square$
c) Amir's method


Use Amir's method to work out 6,000-2,145

d) Whose method do you prefer, Rosie's or Amir's?

Use the column method to work out the subtractions.
a) $500-341$

c) $£ 3,000-£ 2,782$

b) 1,000-729
d) $10,000 \mathrm{~mm}-7,302 \mathrm{~mm}$


A theme park has 3,002 light bulbs.
1,785 of the light bulbs are blue.
How many bulbs are not blue?
Use a method where you subtract 3 from each number.
$\square$

6 Eva is working out 7,385-1,999

a) Explain why Eva's method works.
b) Explain a different method that Eva could have used.

The method should involve changing each number before subtracting
c) Work out the subtractions mentally.
$4,512-2,999=$ $\square$
$3,704-2,998=$ $\square$
$\square$

$$
5,147-997=
$$

## Estimate answers

Filip is working out $607+395$He rounds his numbers to the nearest hundred to estimate the answer.
a) Complete the sentences.

607 rounded to the nearest hundred is $\square$
395 rounded to the nearest hundred is $\square$
Filip's estimate for the answer is

b) Use column addition to work out the actual answer.

|  |  | Th | $\mathbf{H}$ | $\mathbf{T}$ | $\mathbf{O}$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  | 6 | 0 | 7 |  |
|  | + |  | 3 | 9 | 5 |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

The actual answer is $\square$
(2) Alex is working out 7,958-6,103

Alex rounds her numbers to the nearest thousand to estimate the answer.
a) Complete the sentences.

7,958 rounded to the nearest thousand is $\square$
6,103 rounded to the nearest thousand is $\square$
Alex's estimate is
$\square$
b) Use column subtraction to work out the actual answer

|  |  | Th | H | T | O |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 7 | 9 | 5 | 8 |  |
|  | - | 6 | 1 | 0 | 3 |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

The actual answer is


3 Mr Howell writes a subtraction on the board.


Write a better estimate.
$\qquad$
$\qquad$
a) Tom is estimating an addition calculation.

His estimate is $3,000+1,000=4,000$
Write three possible additions Tom could be estimating.

b) Dani is estimating a subtraction calculation.

Her estimate is $£ 600-£ 100=£ 500$
Write three possible subtractions Dani could be estimating.

5) Complete the table. Show your workings.

| Question | Estimated answer | Accurate answer |
| :---: | :---: | :---: |
| $3,970 \mathrm{~km}-1,850 \mathrm{~km}$ |  |  |
| $7,076-852$ |  |  |
| $7,076-652$ |  |  |
| $1,994 \mathrm{ml}+1,994 \mathrm{ml}$ |  |  |

(6) Whitney and Dexter are estimating the answer to $2,706-1,394$

Whitney's estimate is $3,000-1,000=2,000$
Dexter's estimate is $2,700-1,400=1,300$
Whose estimate is more accurate?
Why?
$\qquad$
$\qquad$
(7)

A forest has 2,638 trees.


1,172 more trees are planted.
a) Use rounding to estimate the number of trees in the forest now.

b) Work out the actual number of trees in the forest.

c) How accurate was your estimate?

## Checking strategies

(1)

Circle the subtractions that can be used to check the addition $271+516=787$
787-271
516-271
271-787
787-516
(2) Circle the additions that can be used to check the subtraction $2,364-1,202=1,162$
$2,364+1,202 \quad 1,162+1,202 \quad 2,364+1,162 \quad 1,202+1,162$
(3) Use an inverse operation to check these calculations.
a)


b)

c)

(4)

Complete the fact family for the bar model.

(5)

Teddy is working out 5,671 +325


Teddy checks his calculation using the same addition. Is this a good idea? What mistake has Teddy made?

6
Match the inverse calculations.


$$
2,483-623=1,860
$$

$1,860+1,240=3,100$

$$
2,483+617=3,100
$$

b) $1,372+450=$ $\qquad$

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

c) $6,572-2,320=$ $\square$

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

$$
2,483-617=1,866
$$

$$
1,863-1,240=623
$$

Complete the calculations.
Use inverse operations to check your answers.
a) $372+405=$ $\square$

$$
617+1,866=2,483
$$

```
3,100-2,483=617
```

$$
3,100-1,860=1,240
$$

$$
1,860+623=2,483
$$

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

