THIRD SPACE LEARNING

Ready-to-go Lesson Slides Year 4

Addition and Subtraction Lesson 7

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At Third Space Learning we provide personalised online lessons from specialist maths tutors to support the target groups in your school.

These ready-to-go slides are designed to work alongside our interventions to supplement quality first teaching and raise attainment in maths for all pupils.

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Boosting maths progress through 1-to-1 conversations…

THIRD SPACE LEARNING

To be able to subtract two 4-digit numbers

STARTER:

Use the digits 1, 4, 6, 2, 4, 9, 5 and 7 to make as many 4-digit subtractions as possible where you will need to exchange once.

You can only use each digit once.

Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

To be able to subtract two 4-digit numbers

STARTER:

Use the digits 1, 4, 6, 2, 4, 9, 5 and 7 to make as many 4-digit subtractions as possible where you will need to exchange once.

There are lots of possible answers!
Here are some examples:

6,249 – 5,741
4,765 – 1,192
4,649 – 4,271
9,274 – 5,146

Which column will you need to exchange in your calculations?

Success Criteria:

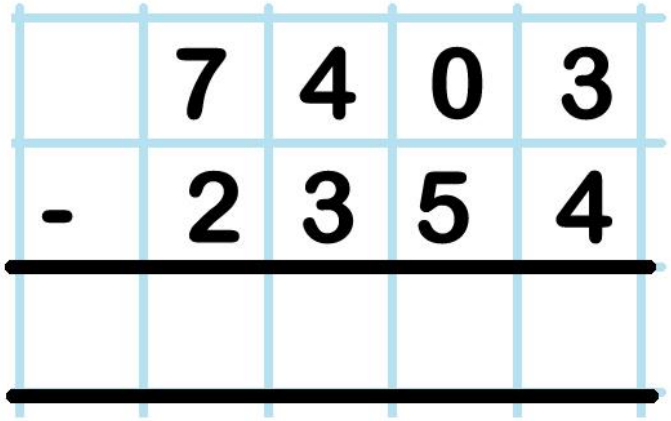
Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

To be able to subtract two 4-digit numbers

TALKING TIME:

Don't solve the subtraction, just say whether or not you will need to exchange.
If not, why not?
If so, how will your exchange affect the numbers?



Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

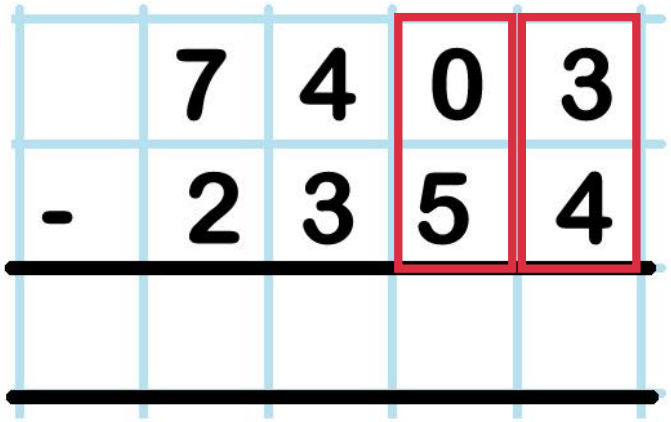
Do we have enough in each column to subtract each digit in 2,354?

What can we do to help?

To be able to subtract two 4-digit numbers

TALKING TIME:

Don't solve the subtraction, just say whether or not you will need to exchange.
If not, why not?
If so, how will your exchange affect the numbers?



Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

Do we have enough in each column to subtract each digit in 2,354?

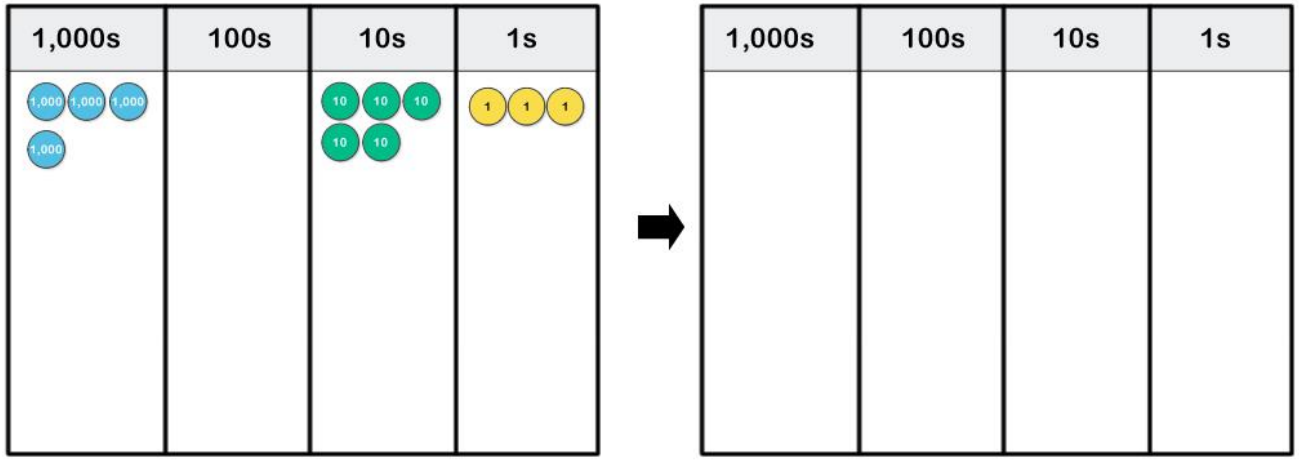
What can we do to help?

We will need to exchange to help subtract in the ones and the tens columns. This is because the digit in the top number is smaller than the digit in the bottom number in these columns.
The new top number will show 7 thousands, 3 hundreds, 9 tens and 13 ones.

To be able to subtract two 4-digit numbers

TALKING TIME:

Hamza needs to subtract 1,617 from this number.
Show the exchanges that Hamza needs to make in order to complete the subtraction.



Does Hamza need to exchange?
How will he do this?

Success Criteria:

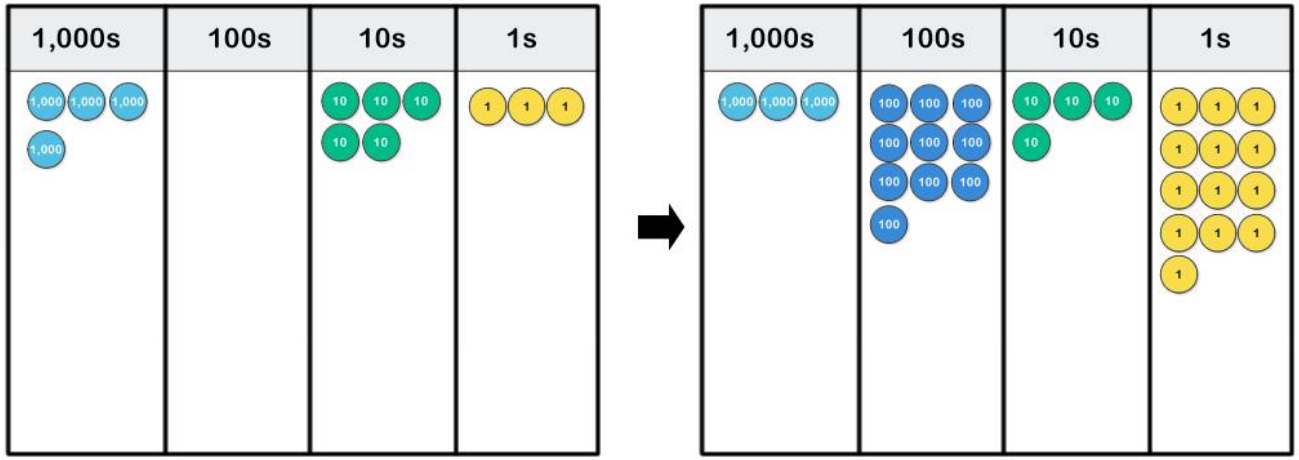
Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

To be able to subtract two 4-digit numbers

TALKING TIME:

Hamza needs to subtract 1,617 from this number.
Show the exchanges that Hamza needs to make in order to complete the subtraction.



Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

Hamza has exchanged 1 thousand for 10 hundreds and also 1 ten for 10 ones. Instead of 4,053 being shown by 4 thousands, 5 tens and 3 ones, he has exchanged to show the same number as 3 thousands, 10 hundreds, 4 tens and 13 ones. This makes the subtraction easier to complete.

To be able to subtract two 4-digit numbers

TALKING TIME:

Sheona needs to subtract 2,566 from this number.
Show how she can exchange to make the subtraction easier.

1,000s	100s	10s	1s
1,000 1,000 1,000			

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1,000s	100s	10s	1s

Describe all the exchanges Sheona needs to make in order.

Success Criteria:

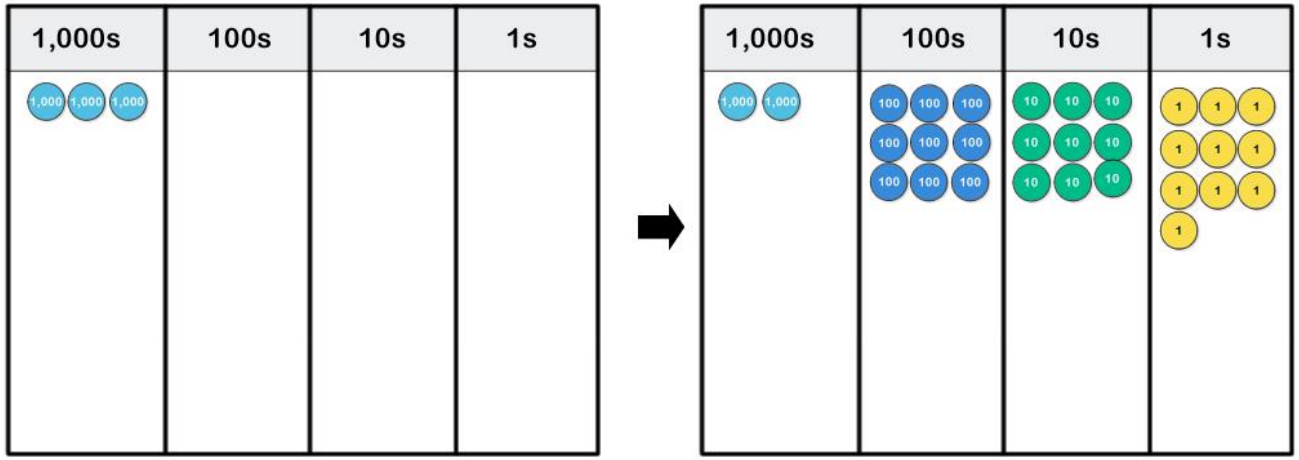
Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

To be able to subtract two 4-digit numbers

TALKING TIME:

Sheona needs to subtract 2,566 from this number.
Show how she can exchange to make the subtraction easier.



Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

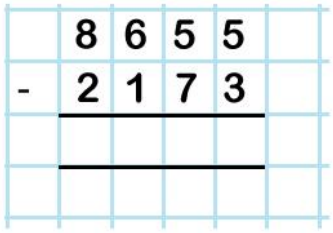
Extension:
Can you think of a way to find the answer without using exchange?

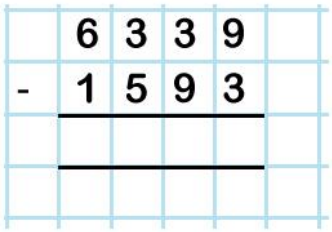
Sheona needs to exchange 1 thousand for 10 hundreds, then 1 hundred for 10 tens, then 1 ten for 10 ones. Her new representation shows 2 thousands, 9 hundreds, 9 tens and 10 ones which is the same as 3,000, but shown in a way that will help her complete the subtraction.

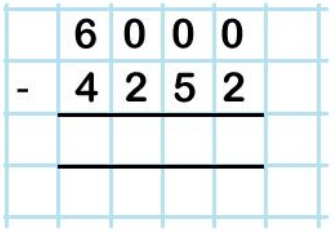
To be able to subtract two 4-digit numbers

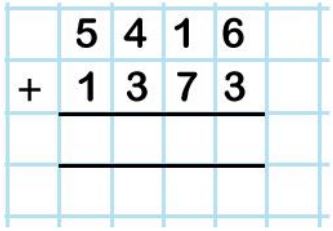
ACTIVITY 1:

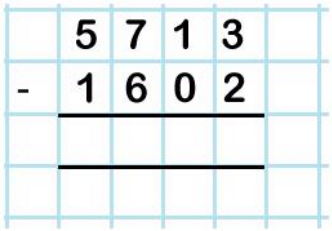
Do not answer these calculations.
Just identify where you will need to exchange to help.

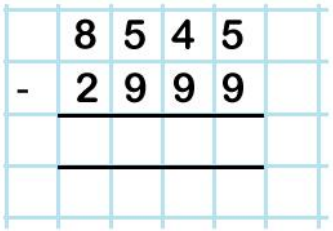












Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

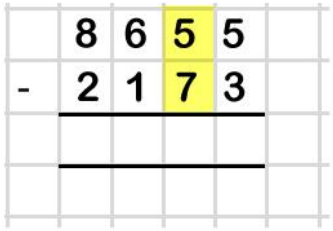
Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

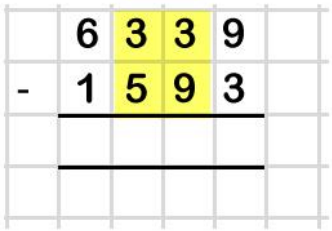
To be able to subtract two 4-digit numbers

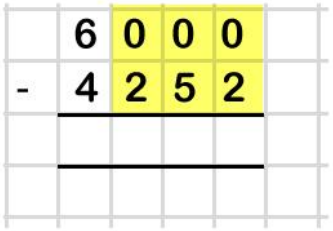
ACTIVITY 1:

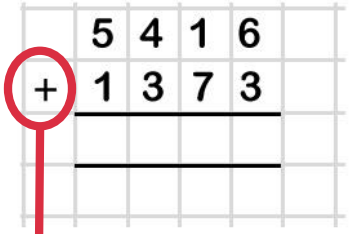
Do not answer these calculations.
Just identify where you will need to exchange to help.

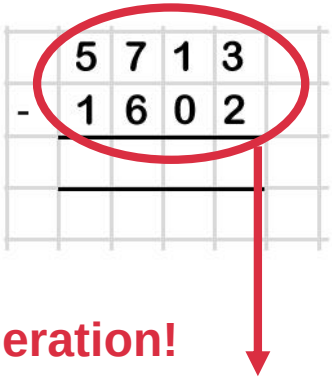
We will need to exchange to help with the highlighted columns:

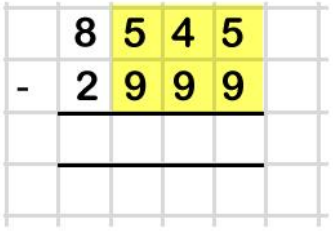












Always look at the operation!

Not every calculation needs to involve an exchange!

Success Criteria:

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I can subtract two 4-digit numbers **where there is more than one exchange**.

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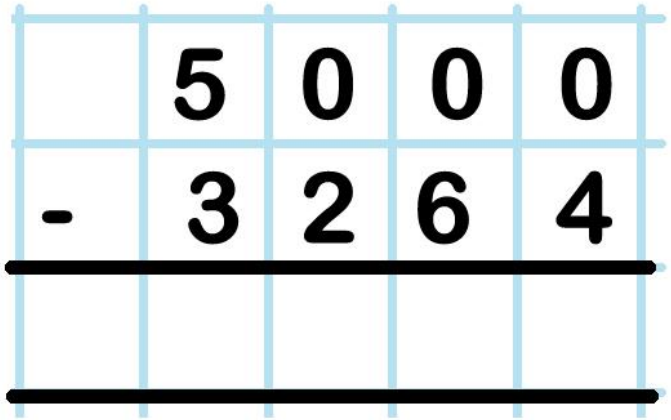
To be able to subtract two 4-digit numbers

TALKING TIME:

Chelsey's mum wants to save £5,000 to buy a new car.
She has already saved £3,264.
How much money does she still need to save?



Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

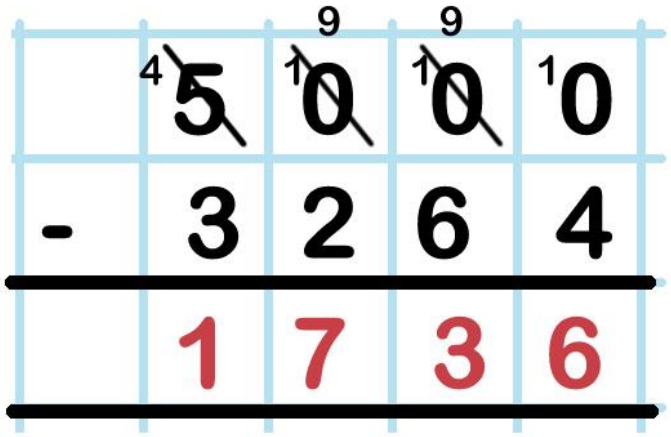
Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

Can you explain – just by using the words in the problem – how you know this is a subtraction problem?
Can you think of a way to solve the problem using a different strategy?

To be able to subtract two 4-digit numbers

TALKING TIME:

Chelsey's mum wants to save £5,000 to buy a new car.
She has already saved £3,264.
How much money does she still need to save?



She still needs to save £1,736

Success Criteria:

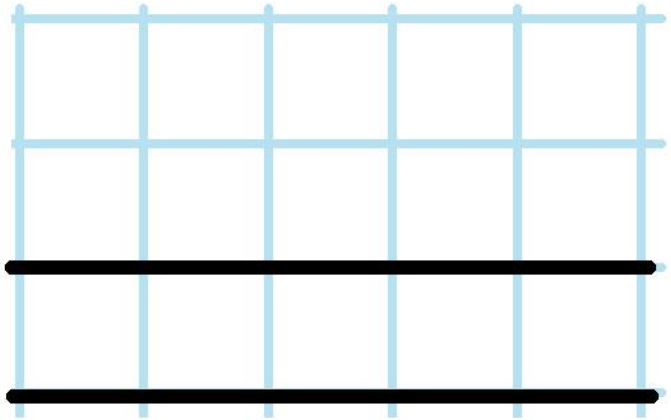
Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

To be able to subtract two 4-digit numbers

TALKING TIME:

The year is 2018.
Ffion's grandfather was born in 1945.
Use column subtraction to find his age.



How will you write the subtraction?
What will you do to make the numbers easier to subtract?

Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

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To be able to subtract two 4-digit numbers

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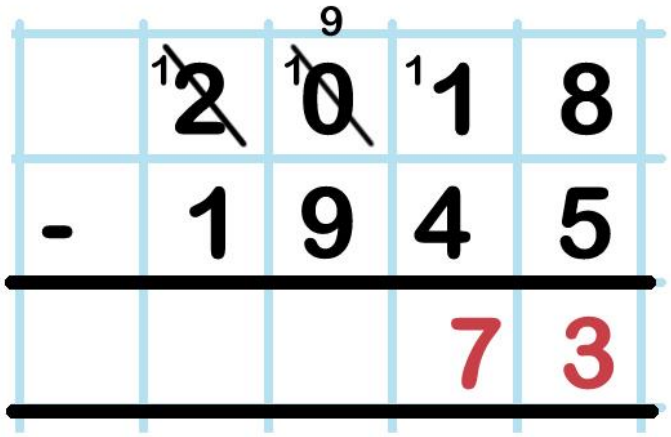

Ffion's grandfather is 73 years old.

Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

Extension:
Ask three people for the year they were born (or look up three famous people).

Use subtraction to work out their age.

To be able to subtract two 4-digit numbers

ACTIVITY 2:

Only answer the subtraction problem.

PROBLEM A:

Rhys wants to get to a high score of 7,000 on a computer game. He has already got a score of 4,750. How many points does he still need to get?

PROBLEM B:

Lyndsey wants to save an amount of money.
She has saved £1,462 already and has got £2,000 to go.
How much money does she want to save?

Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
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To be able to subtract two 4-digit numbers

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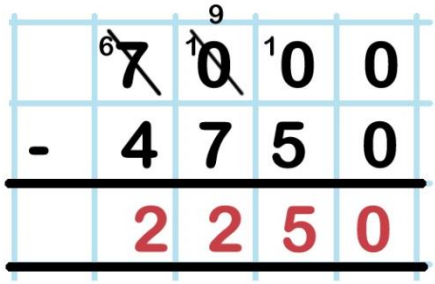


Rhys still needs to get another 2,250 points.

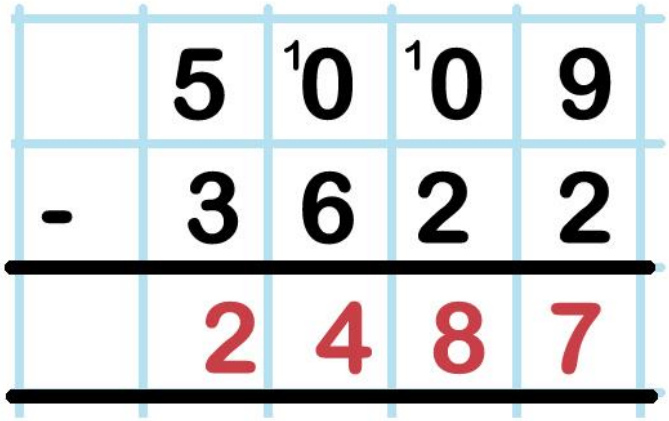
PROBLEM B:

Lyndsey wants to save an amount of money.
She has saved £1,462 already and has got £2,000 to go.
How much money does she want to save?

To be able to subtract two 4-digit numbers

TALKING TIME:

What mistake can you see?



	5	$^{1}0$	$^{1}0$	9
-	3	6	2	2
	2	4	8	7

Success Criteria:

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To be able to subtract two 4-digit numbers

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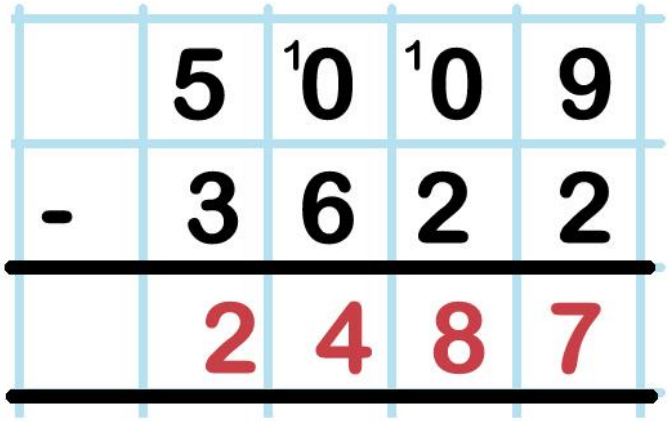

	5	$^{1}0$	$^{1}0$	9
-	3	6	2	2
	2	4	8	7

Success Criteria:

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The person answering this question understands that they need to exchange, but they have not crossed through each column that they have exchanged from and show its new value. They have simply added 10 tens and 10 hundreds to each column.
This means that their number is no longer worth 5,009, it is worth 6,109 (5 thousands, 10 hundreds, 10 tens and 9 ones).

To be able to subtract two 4-digit numbers

ACTIVITY 3:

Becky and Kurt have tried to solve the same calculation. What mistakes have they made?

BECKY'S ANSWER

	6	3	1	5
-	3	2	4	3
	9	5	5	8

KURT'S ANSWER

	6	3	1	5
-	3	2	4	3
	3	1	3	2

Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

To be able to subtract two 4-digit numbers

ACTIVITY 3:

Becky and Kurt have tried to solve the same calculation.
What mistakes have they made?

Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

BECKY'S ANSWER

	6	3	1	5
-	3	2	4	3
	9	5	5	8

Becky has not looked at the operation symbol! She has added instead of subtracted!

KURT'S ANSWER

	6	3	1	5
-	3	2	4	3
	3	1	3	2

Kurt has subtracted each column, but when he reached a column that had a larger digit on the bottom, instead of exchanging he subtracted upwards and worked out 4 – 1 instead.

Extension:
Some of Becky and Kurt's class made different mistakes when solving this subtraction.
What other common mistakes is it possible to make?

To be able to subtract two 4-digit numbers

Success Criteria:

Mastery:
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Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

EVALUATION:

True or False?

a) To solve the calculation 6,629 – 4,718, you will need to exchange 1 hundred for 10 tens.

b) If you are working out a column subtraction and it needs exchange, it is important that you work from left to right.

c) When working out the calculation 7,000 – 3,461 using the column method, you will need to exchange 3 times.

d) When we exchange, we take 1 unit from a column and replace it with 10 units of the column to its right.

To be able to subtract two 4-digit numbers

EVALUATION:

True or False?

a) To solve the calculation 6,629 – 4,718, you will need to exchange 1 hundred for 10 tens. **FALSE**

b) If you are working out a column subtraction and it needs exchange, it is important that you work from left to right. **FALSE**

c) When working out the calculation 7,000 – 3,461 using the column method, you will need to exchange 3 times. **TRUE**

d) When we exchange, we take 1 unit from a column and replace it with 10 units of the column to its right. **TRUE**

Success Criteria:

Mastery:
I can subtract two 4-digit numbers **where there is more than one exchange**.

Greater Depth:
I can apply my knowledge of subtracting 4-digit numbers when identifying mistakes in calculations.

Do you have a group of pupils who need a boost in maths this term?

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- Plug any gaps or misconceptions
- Boost confidence

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