Subtract two 4-digit numbers – no exchange

White Rose Maths

1 Use the place value chart to work out 5,624 – 2,301
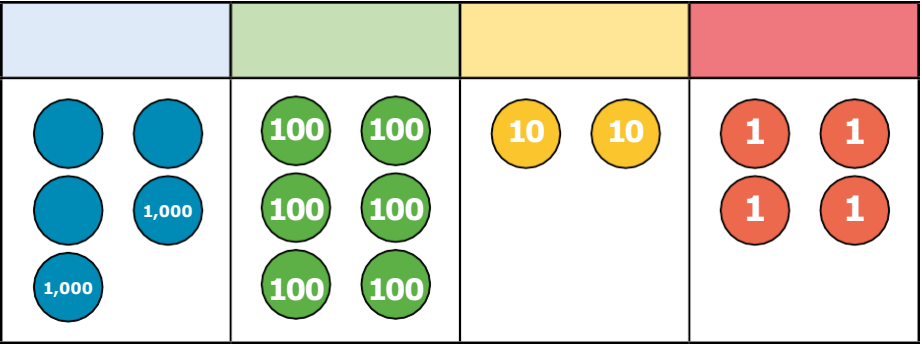
5,624 – 2,301 = **3,323**

Complete the calculation.

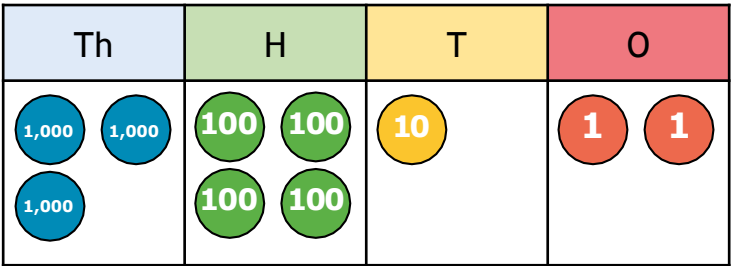|		Th	H	T	O
		5	6	2	4
	–	2	3	0	1
		3	**3**	**2**	**3**

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

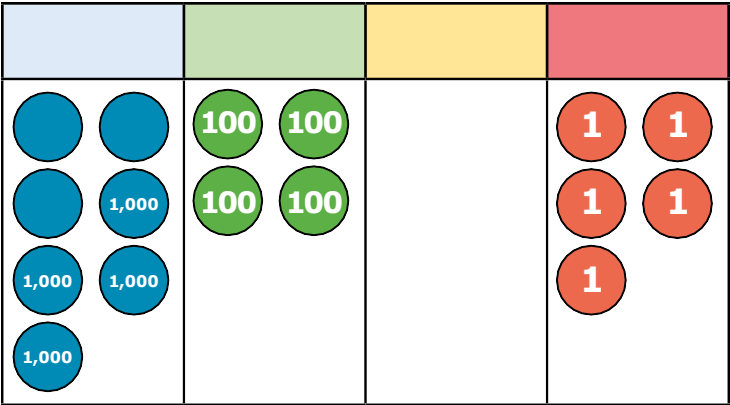**2** Use the place value charts to complete the calculations.

a) 3,412 – 1,201

		Th	H	T	O
		3	4	1	2
	–	1	2	0	1
		2	**2**	**1**	**1**

b) 5,361 – 3,241
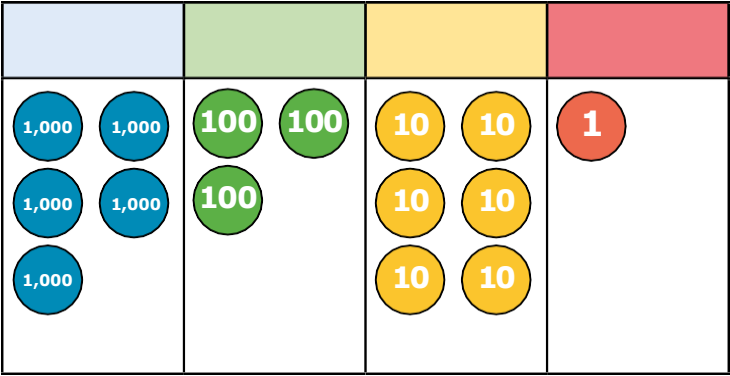
		Th	H	T	O
		5	3	6	1
	–	3	2	4	1
		2	**1**	**2**	**0**

c) 7,405 – 404

		Th	H	T	O
		7	4	0	5
	–		4	0	4
		7	**0**	**0**	**1**

3 Complete the calculations.

a)

		Th	H	T	O
		9	3	1	6
	–	7	2	0	5
		2	**1**	**1**	**1**

b)

		Th	H	T	O
		8	0	6	1
	–	3	0	6	0
		5	**0**	**0**	**1**

c)

		Th	H	T	O
		4	9	2	7
	–		3	1	5
		4	**6**	**1**	**2**

4 Aisha is calculating 7,585 − 316

	Th	H	T	O
	7	5	8	5
−		3	1	6
	4	4	2	5

7,585 − 316 = 4,425

Do you agree with Aisha? __No__

Explain your answer.
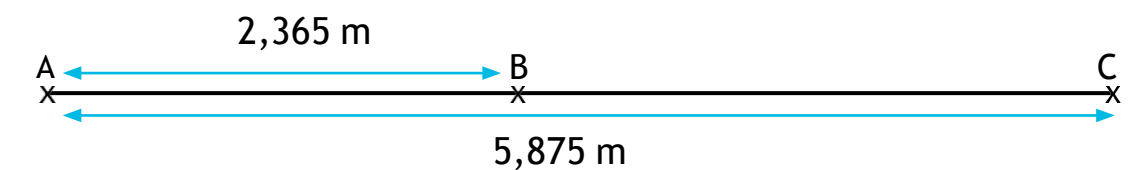
5 Complete the calculations. Show your workings.

a) 6,205 − 104 = 6,101

b) 3,749 − 1,642 = 2,107

c) 2,111 = 5,371 − 3,260

d) 9,000 = 9,853 − 853

6 The distance from A to B is 2,365 m.

The distance from A to C is 5,875 m in the same direction.

How far is C from B?

2,365 m

A — B — C

5,875 m

3,510 m

7 Whitney and Ron are playing a game.

Whitney has 1,353 points.

Ron has 230 points fewer than Whitney.   (1,123 points)

How many points do they have altogether?

2,476

Subtract two 4-digit numbers – one exchange

1

Th	H	T	O
1,000 1,000 1,000 1,000 1,000	100 100 100 100	10 10 10	1 1 1 1 1

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

5,435 − 3,215 = **2,220**

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

5,435 − 3,216 = **2,219**

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?

You need to make an exchange

_____

2 Complete the sentences.

1 ten can be exchanged for **10** ones.

1 hundred can be exchanged for 10 **tens**.

1 thousand can be exchanged for **10** **hundreds**.

3 Use a place value chart to complete the calculations.

a)

		H	T	O
		3	¹2̸	¹7
−		1	1	9
		2	**0**	**8**

c)

		Th	H	T	O
		9	8	³4̸	¹5
−		6	2	1	6
		3	**6**	**2**	**9**

b)

		Th	H	T	O
		7	6	⁶7̸	¹3
−			1	3	4
		7	**5**	**3**	**9**

4 Use a place value chart to complete the calculations.

a)

		H	T	O
		²3̸	¹2	7
−		1	3	2
		1	**9**	**5**

c)

		Th	H	T	O
		9	⁷8̸	¹4	5
−		2	3	6	0
		7	**4**	**8**	**5**

b)

		Th	H	T	O
		7	⁵6̸	¹7	3
−			2	8	1
		7	**3**	**9**	**2**

5 Use a place value chart to complete the calculations.

a)

		Th	H	T	O	
		3̸²	¹2	7	0	
	−	1	3	2	0	
		1	9	5	0	

c)

		Th	H	T	O	
		9̸⁸	¹8	4	5	
	−	1	9	2	1	
		7	9	2	4	

b)

		Th	H	T	O	
		7̸⁶	¹6	7	3	
	−		7	2	1	
		6	9	5	2	

6 Annie is calculating 3,467 − 2,148

Here is her working.

		Th	H	T	O	
		3	4	6	7	
	−	2	1	4	8	
		1	3	2	1	

Do you agree with Annie? __No__

Explain your answer.

She has found the difference between the numbers in each column rather than making an exchange.

7 A car costs £8,716

A motorbike costs £2,341 less than the car.

How much does the motorbike cost?

£6,375

8 Jack is thinking of two 4-digit numbers.

> The greater number is 6,410. The difference between the two numbers is 3,107
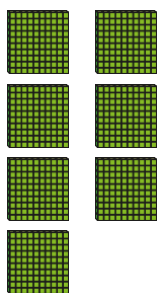
What is the sum of the two numbers?

9,713

Subtract two 4-digit numbers – more than one exchange

White Rose Maths

1 Kim has made a number using base 10

Th	H	T	O

a) Subtract 8 from Kim's number.

1,694

b) Explain the method you used.

Exchange 1 hundred for 10 tens then 1 ten for 10 ones.

c) Subtract 20 from Kim's number.   1,682
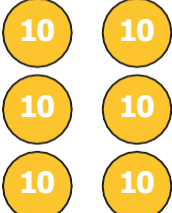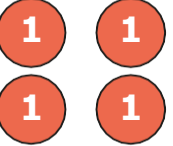
d) Subtract 900 from Kim's number.   802

e) Complete the subtractions.

1,702 – 28 = 1,674   1,702 – 928 = 774

2 Use the place value chart to complete the subtractions.

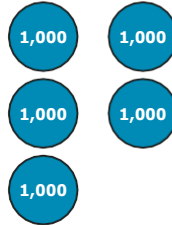| H	T	O

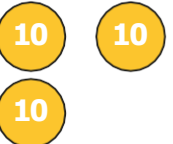**a)** 564 – 354 = 210   **c)** 564 – 365 = 199

b) 564 – 355 = 209
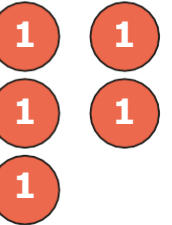
Look at your calculations in parts a), b) and c).

What is the same? What is different?

3 Use the place value chart to complete the subtractions.

Th	H	T	O

a) 5,435 – 2,036 = 3,399

b) 5,436 – 2,036 = 3,400

c) 5,437 – 2,036 = 3,401

Look at your calculations in parts a), b) and c).

What is the same? What is different?

4 Complete the calculations.

a)

	Th	H	T	O
	⁶7̶	¹3	¹2̶	¹5
−	2	4	0	6
	4	9	1	9

c)

	Th	H	T	O
	⁶7̶	¹1	⁹0̶ ¹²	¹2
−		3	9	8
	6	7	0	4

b)

	Th	H	T	O
	⁴5̶	¹⁵6̶	¹²3̶	¹4
−	2	7	4	5
	2	8	8	9

d)

	Th	H	T	O
	⁴5̶	⁹0̶	⁹0̶	¹0
−	1	7	3	3
	3	2	6	7

5 A jug contains 1,500 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?

984 ml

6 Work out the missing digits.

a)

	Th	H	T	O
	⁶7̶	¹1	⁸9̶ ¹	¹4
−		1	2	3	6
		5	9	5	8

b)

	Th	H	T	O
	³4̶	¹0	⁷8̶ ¹	¹3
−			2	3	8
		3	8	4	5

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

0	1	2	3	4	5	6	7

a) There are 2 exchanges.
The answer is less than 2,000

E.g.

   2 3 5 3
− 1 0 6 4

b) There are 2 exchanges.
The answer is greater than 4,000

E.g.

   7 6 4 0
− 2 3 5 1

c) There are 3 exchanges.

E.g.

   7 4 2 0
− 6 5 3 1

White Rose Maths

Efficient subtraction

I **a)** Use the column method to work out 704 − 696

H	T	O
⁶7̷ ¹0̷⁹ ¹4		
− 6	9	6
0	0	8

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

695 696 697 698 699 700 701 702 703 704 705

c) Which method do you prefer? Why?

Various answers.

2 Complete the subtractions by counting on.

a) 902 − 897 = 5

b) 1,902 − 1,894 = 8

c) 2,027 − 1,999 = 28

3 **a)** Use column subtraction to complete the calculations.

	H	T	O
	⁶7̷ ⁹0̷ ¹0		
−	3	4	8
	3	5	2

	Th	H	T	O
	⁵6̷ ⁹0̷ ⁹0̷ ¹0			
−	2	1	4	5
	3	8	5	5

What do you notice?

You have to make multiple exchanges in each.

b) Rosie's method

	H	T	O
	6	9	9
−	3	4	8
	3	5	1

351 + 1 = 352

so 700 − 348 = 352

Use Rosie's method to work out 6,000 − 2,145

5	9	9	9		3	8	5	4	+	1	=	3	8	5	5
− 2	1	4	5												
3	8	5	4								3,855				

c) Amir's method

	H	T	O				H	T	O
	7	0	0				6	9	9
−	3	4	8			−	3	4	7
	3	5	2				3	5	2

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

	5	9	9	9						
−	2	1	4	4						
	3	8	5	5						

3,855

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

4 Use the column method to work out the subtractions.

a) 500 − 341

	1	5	9		

c) £3,000 − £2,782

	£	2	1	8		

b) 1,000 − 729

	2	7	1		

d) 10,000 mm − 7,302 mm

	2,	6	9	8	mm	

A theme park has 3,002 light bulbs.

1,785 of the light bulbs are blue.

How many bulbs are not blue?
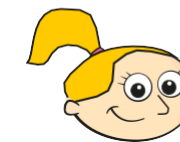
Use a method where you subtract 3 from each number.

1,217

6 Eva is working out 7,385 − 1,999

7,385 − 2,000 = 5,385

7,385 − 1,999 = 5,386

> I subtracted 2,000 from 7,385 and then added one on.

a) Explain why Eva's method works.

She is subtracting 1 less than 2,000 so she subtracts 2,000 then adds 1 back on

b) Explain a different method that Eva could have used.
The method should involve changing each number before subtracting.

She could add 1 to each number so the difference doesn't change and calculate 7,386 − 2,000

c) Work out the subtractions.

4,512 − 2,999 = 1,513

5,147 − 997 = 4,150

3,704 − 2,998 = 706