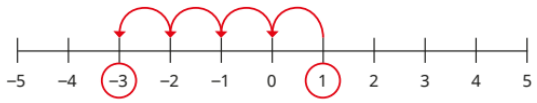
UNIVERSITY OF CAMBRIDGE PRIMARY SCHOOL

Year —9.10.23 Negative Numbers

1 Use the number lines to find the differences.

a)

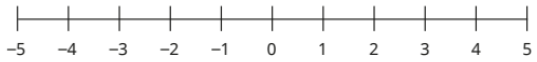


The difference between 1 and −3

b)

The difference between −2 and 4

c)



The difference between 5 and −4

What do you notice?

2 Here is a number line from −10 to 10

a) How many jumps are there from 4 to zero?

b) How many jumps are there from −4 to zero?

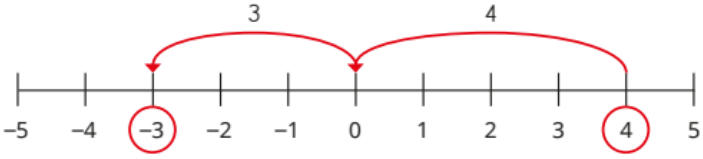
c) How many jumps are there from −8 to zero?

d) How many jumps are there from 8 to zero?

What do you notice?

3

3 Tiny is finding the difference between 4 and −3



What is the difference between 4 and −3?

What do you notice?

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Year 5 9.10.23—Negative Numbers—Challenge

Use the number line to find the differences by jumping to and from zero.

a) The difference between 2 and −3

b) The difference between −3 and 7

c) The difference between 1 and −6

d) The difference between −9 and 9

Year 5 9.10.23—Negative Numbers—Challenge

Use the number line to find the differences by jumping to and from zero.

a) The difference between 2 and −3

b) The difference between −3 and 7

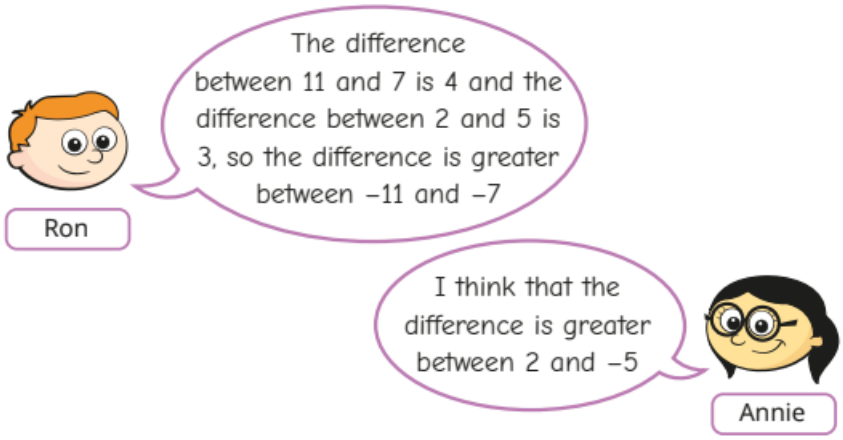
c) The difference between 1 and −6

d) The difference between −9 and 9

Year 5 10.10.23—Negative Numbers—Challenge

Ron and Annie are comparing the differences between the pairs of numbers.

−11 and −7	2 and −5



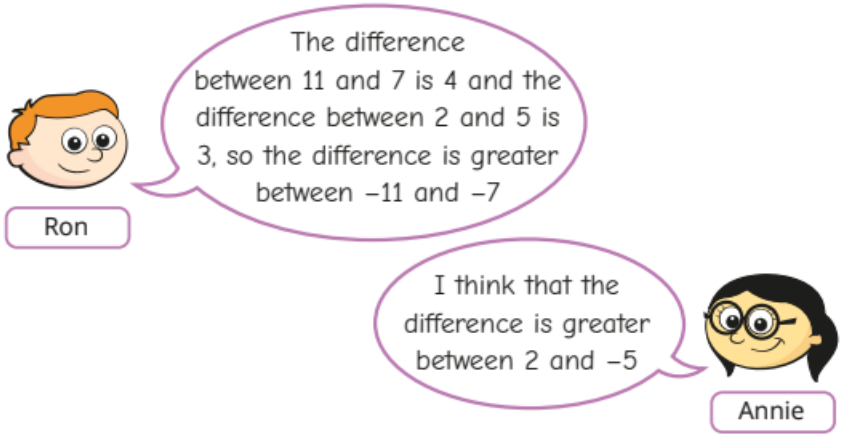
Who do you agree with?

Explain your reasons.

Year 5 10.10.23—Negative Numbers—Challenge

Ron and Annie are comparing the differences between the pairs of numbers.

−11 and −7	2 and −5



Who do you agree with?

Explain your reasons.

UNIVERSITY OF CAMBRIDGE PRIMARY SCHOOL

Year 5 10.10.23—Negative Numbers-worksheet

1.

Find the differences between the pairs of numbers.

a) 17 and −21

b) −23 and 8

c) 52 and −33

d) 109 and −36

2.

The average temperature in July is 26 °C.

The average temperature in January is −9 °C.

What is the difference in average temperatures between January and July?

3.

Mr Rose parks his car on floor −3 of a building.

He goes up 8 floors in a lift to his office.

He then goes down 2 floors for a meeting.

How many floors does Mr Rose need to go down to get back to his car?

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Year 5 11.10.23—Mental calculation-worksheet

1 Complete the calculations.

a) 3 + 4 = ☐

3 eggs + 4 eggs = ☐ eggs

3 tens + 4 tens = ☐ tens

30 + 40 = ☐

b) 7 + 3 = ☐

7 sweets + 3 sweets = ☐ sweets

7 hundreds + 3 hundreds = ☐ hundreds

700 + 300 = ☐

c) 8 – 3 = ☐

8 cups – 3 cups = ☐ cups

8 thousands – 3 thousands = ☐ thousands

8,000 – 3,000 = ☐

d) 4 + 9 = ☐

4 apples + 9 apples = ☐ apples

4 ten-thousands + 9 ten-thousands = ☐ ten-thousands

40,000 + 90,000 = ☐

What do you notice?

2 Use the fact that 9 + 7 = 16 to complete the calculations.

a) 90 + 70

b) 900 + 700

c) 9,000 + 7,000

d) 160,000 – 70,000

e) 16,000 – 9,000

f) 1,600 – 900 – 700

3

If 8,000 + 7,000 = 15,000 and 30 + 20 = 50, then 8,030 + 7,020 = 15,050

Do you agree with Tiny?

Explain your answer.

4 Work out the calculations.

a) 30,000 + 17,000

b) 12,700 – 2,300

c) 30,500 + 17,400

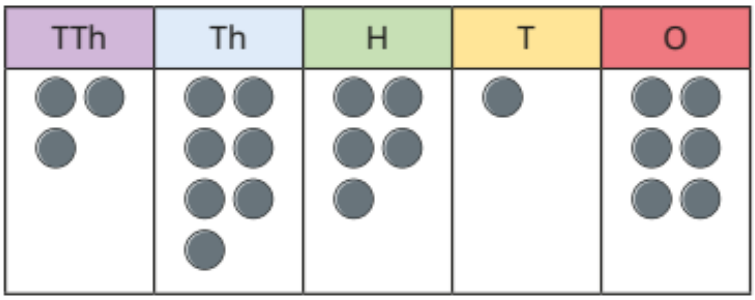
d) 2,890 – 1,740

e) 12,040 + 8,010

f) 99,800 – 16,200

Year 5 11.10.23—Mental calculation—Challenge

Use the place value chart to help you work out the calculations.



a) 37,516 + 10,000

b) 37,516 + 1,000

c) 37,516 + 300

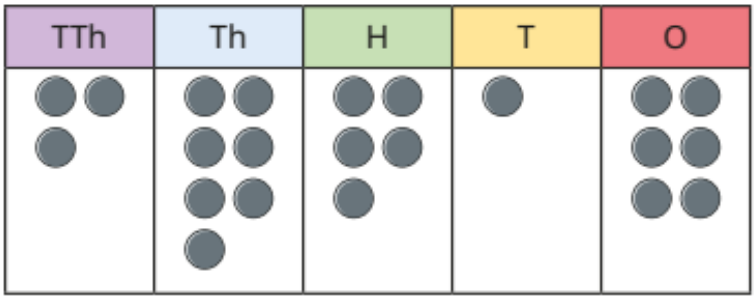
d) 37,516 – 10,000

e) 37,516 – 3,400

f) 37,516 + 11,304

Year 5 11.10.23—Mental calculation—Challenge

Use the place value chart to help you work out the calculations.



a) 37,516 + 10,000

b) 37,516 + 1,000

c) 37,516 + 300

d) 37,516 – 10,000

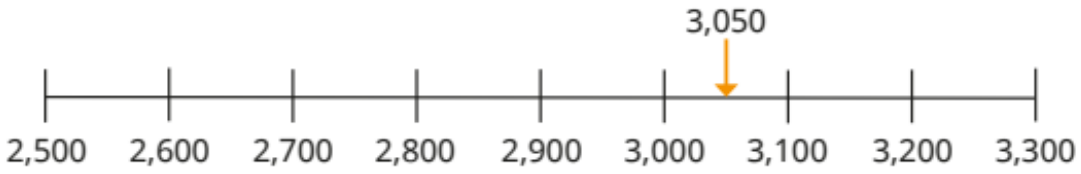
e) 37,516 – 3,400

f) 37,516 + 11,304

UNIVERSITY OF CAMBRIDGE PRIMARY SCHOOL

Year 5 12.10.23—Mental calculation-worksheet

1. Use the number line to help you work out the calculations.



a) 3,050 + 100

b) 3,050 – 100

c) 3,050 + 200

d) 3,050 – 500

2.

Is each statement true or false?

Explain your reasoning.

a) Adding 99 is the same as adding 100 and subtracting 1

b) Subtracting 99 is the same as subtracting 100 and subtracting 1

3.

Work out the calculations.

a) 2,360 + 99

b) 2,360 – 99

c) 52,871 + 99

d) 470,364 – 99

e) 999 + 52,863

f) 176,507 + 990

Year 5 12.10.23—Mental calculation—Challenge

Work out the calculations.

123 + 99 123,000 + 99,000

What do you notice?

Year 5 12.10.23—Mental calculation—Challenge

Work out the calculations.

123 + 99 123,000 + 99,000

What do you notice?

UNIVERSITY OF CAMBRIDGE PRIMARY SCHOOL

Year —9.10.23 Numbers—adapted

Fill in the missing numbers to make 50.

1)	20 + ___ = 50	2)	31 + ___ = 50	3)	28 + ___ = 50
4)	___ + 15 = 50	5)	___ + 12 = 50	6)	___ + 16 = 50
7)	7 + ___ = 50	8)	___ + 16 = 50	9)	41 + ___ = 50
10)	___ + 4 = 50	11)	34 + ___ = 50	12)	___ + 23 = 50

Join the bonds: join up the number bonds that add up to make 50.

15	33
31	42
17	19
8	35
24	26

21	17
33	4
6	29
46	32
18	44

Circle the bonds: circle all the pairs of numbers that total 50.

24	13	37	14	36	18
1	26	38	40	35	32
19	22	12	15	10	45
28	44	6	8	23	5
5	30	20	31	12	27
15	1	19	4	48	2

See if you can find at least 10 pairs!

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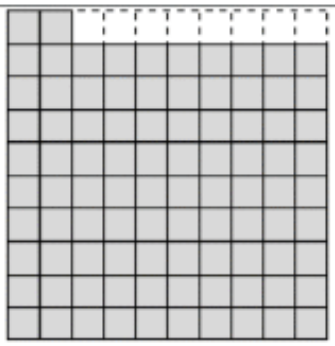
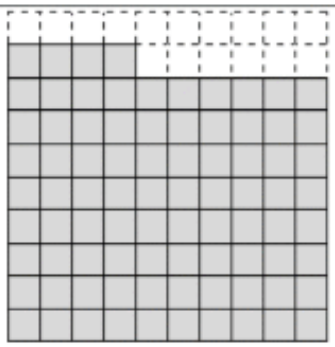
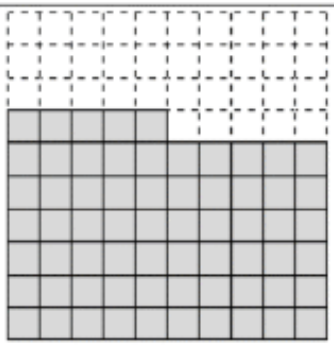
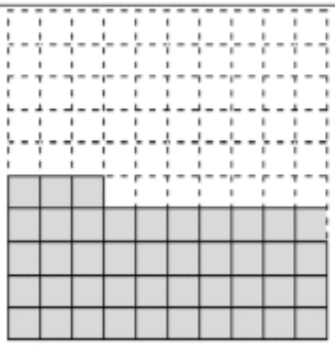
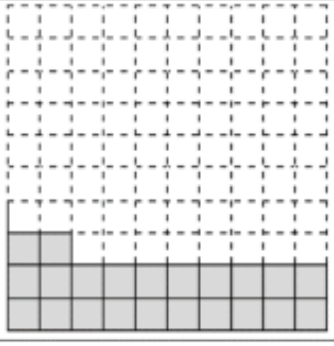
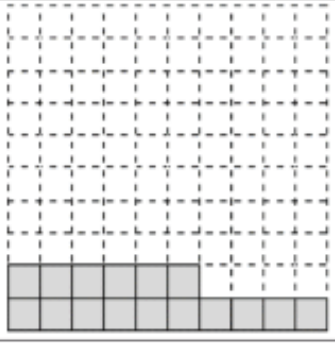
Year —10.10.23 Numbers—adapted

Work out the missing number of place value blocks to make 100.

1) 	2) 
92 + _____ = 100	84 + _____ = 100
3) 	4) 
65 + _____ = 100	43 + _____ = 100
5) 	6) 
22 + _____ = 100	16 + _____ = 100

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Year 5 12.10.23—Mental calculation-adapted.

Fill in the missing number bonds in these bar models so that the total is 100.

1)

100	
40	60

2)

100	
80	

3)

100	
	55

4)

100	
91	

5)

100	
32	

6)

100	
	42

7)

100	
76	

8)

100	
23	

9)

100	
	62

10)

100	
11	

11)

100	
66	

12)

100	
27	

13)

100	
48	

14)

100	
	46

15)

100	
	12

16)

100	
17	

UNIVERSITY OF CAMBRIDGE PRIMARY SCHOOL

Year 5 12.10.23—Mental calculation-adapted.

Fill in the missing numbers to make 100.

1)	20 + ___ = 100	2)	31 + ___ = 100	3)	28 + ___ = 100
4)	___ + 15 = 100	5)	___ + 12 = 100	6)	___ + 16 = 100
7)	17 + ___ = 100	8)	___ + 36 = 100	9)	41 + ___ = 100
10)	___ + 4 = 100	11)	34 + ___ = 100	12)	___ + 23 = 100

Join the bonds: join up the number bonds that add up to make 100.

35	53
21	79
47	26
28	65
74	72

36	81
19	38
87	13
62	46
54	64

Circle the bonds: circle all the pairs of numbers that total 100.

32	67	29	45	88	12
68	71	25	46	55	94
7	75	23	54	67	6
14	93	77	33	29	78
98	2	54	41	63	22
31	46	17	83	59	28

See if you can find at least 10 pairs!

0	1	2	3	4	5	6	7	8	9	10	11

Fill in the missing numbers to make 11.

9 + ___ = 11	10 + ___ = 11	6 + ___ = 11
4 + ___ = 11	7 + ___ = 11	8 + ___ = 11
11 + ___ = 11	5 + ___ = 11	2 + ___ = 11
0 + ___ = 11	3 + ___ = 11	1 + ___ = 11

Fill in the missing facts

11 is 1 more than 10	11 is ___ more than 9
11 is ___ more than 8	11 is ___ more than 7
11 is ___ more than 6	11 is ___ more than 5
11 is ___ more than 4	11 is ___ more than 3
11 is ___ more than 2	11 is ___ more than 1

Join up the pairs of numbers that add up to 11

8	6	7	4	2	8
3	5	9	3	1	10

2	3			5	1		0	4
9		7	10			8		

Fill in the missing numbers to make 11.

1) 4 + ___ = 11
2) 8 + ___ = 11
3) 1 + ___ = 11
4) ___ + 3 = 11
5) ___ + 10 = 11
6) ___ + 0 = 11
7) 11 = ___ + 5
8) 11 = 6 + ___
9) 11 = ___ + 7
10) ___ + 6 = 11
11) 9 + ___ = 11
12) 11 = 1 + ___
13) 11 – 1 = ___
14) 11 – 3 = ___
15) 11 – 8 = ___
16) 11 – ___ = 5
17) 11 – ___ = 9
18) 11 – ___ = 11
19) 3 = 11 – ___
20) 7 = 11 – ___
21) 1 = 11 – ___
22) 11 – ___ = 4
23) 11 – 2 = ___
24) 2 = 11 – ___
25) 7 + ___ = 11
26) 11 – 2 = ___
27) 11 = ___ + 5
28) 3 = 11 – ___
29) 10 = 11 – ___
30) ___ + 8 = 11
31) 4 + ___ = 11
32) 11 – ___ = 5
33) 11 – ___ = 1
34) 11 = 2 + ___
35) 11 = ___ + 8
36) 4 = 11 – ___

6	10	8	5	1	3

Choose different pairs of numbers from the list above to complete these equations.

___ + ___ = 11 11 - ___ = ___ 11 = ___ + ___

0	1	2	3	4	5	6	7	8	9	10	11	12

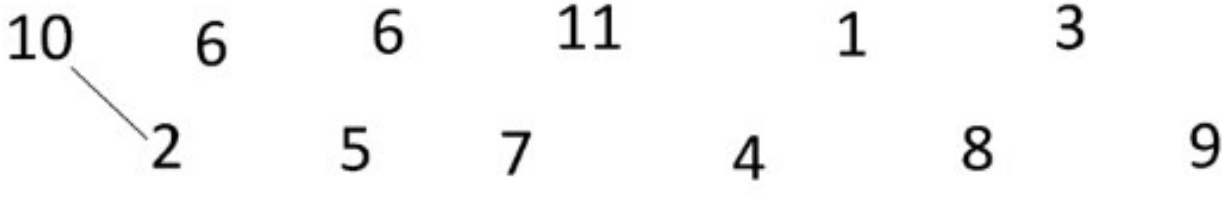
Fill in the missing numbers to make 12.

8 + ___ = 12	10 + ___ = 12	6 + ___ = 12
4 + ___ = 12	7 + ___ = 12	8 + ___ = 12
11 + ___ = 12	5 + ___ = 12	2 + ___ = 12

Fill in the missing facts

12 is 1 more than 11	12 is ___ more than 10
12 is ___ more than 9	12 is ___ more than 8
12 is ___ more than 7	12 is ___ more than 6
12 is ___ more than 5	12 is ___ more than 4
12 is ___ more than 3	12 is ___ more than 2
12 is ___ more than 1	12 is ___ more than 0

Join up the pairs of numbers that add up to 12

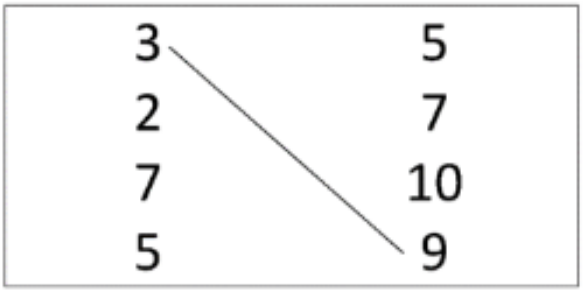


Fill in the missing numbers to make 12.

1)	7 + ___ = 12	2)	4 + ___ = 12	3)	10 + ___ = 12
4)	2 + ___ = 12	5)	9 + ___ = 12	6)	3 + ___ = 12
7)	___ + 5 = 12	8)	___ + 6 = 12	9)	___ + 0 = 12
10)	___ + 4 = 12	11)	___ + 1 = 12	12)	___ + 11 = 12

Join the bonds

Join up the number bonds that add up to make 12.



4	2
1	4
10	8
8	11

Circle the bonds

Put a circle around all the pairs of numbers that total 12.

9	5	2	10	6	3
4	3	7	5	9	2
6	1	9	3	10	1
8	4	6	6	9	4
3	2	5	7	3	8
9	1	11	0	10	2