

Have a pencil and paper ready  
so you can write down what  
you're doing and send it to us!

Day One

## Talking Time:

Here is a bar model.

Can you write down all four number sentences that belong in this fact family?



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Here is a bar model.

Can you write down all four number sentences that belong in this fact family?



$$13 + 7 = 20$$

$$7 + 13 = 20$$

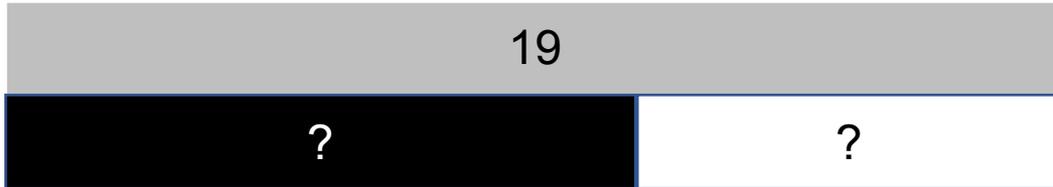
$$20 - 7 = 13$$

$$20 - 13 = 7$$

## Talking Time:

Here is a bar model.

Which numbers **could be** missing and why?



Can you use your two missing numbers to write down all four number sentences that belong in this fact family?

### Extension:

You have found one pair of numbers that work.

How many other pairs of numbers would also work? How do you know that you have them all?

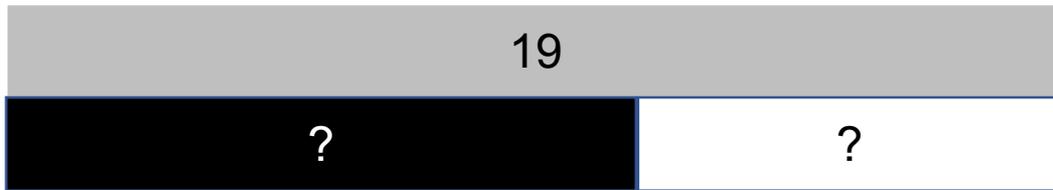
## Talking Time:

Here is a bar model.

Which numbers **could be** missing and why?

There is more than one pair of answers.

You could use 10 and 9. The numbers must total 19.



Can you use your two missing numbers to write down all four number sentences that belong in this fact family?

$$10 + 9 = 19$$

$$9 + 10 = 19$$

$$19 - 9 = 10$$

$$19 - 10 = 9$$

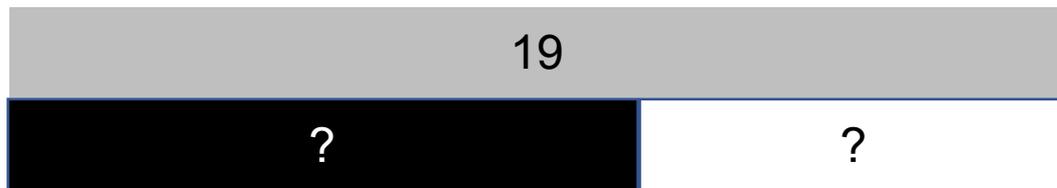
### Extension:

You have found one pair of numbers that work.

How many other pairs of numbers would also work? How do you know that you have them all?

## Talking Time:

Here is the bar model from the last slide.



Which of these pairs of numbers would **NOT** work in this bar model? Why not?

11 and 8

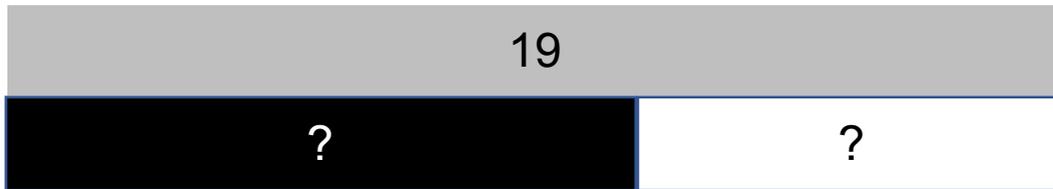
14 and 5

2 and 17

14 and 6

## Talking Time:

Here is the bar model from the last slide.



Which of these pairs of numbers would **NOT** work in this bar model? Why not?

11 and 8

14 and 5

2 and 17

14 and 6

14 and 6 would not work because  $14 + 6$  or  $6 + 14 = 20$ , and so  $20 - 6 = 14$  and  $20 - 14 = 6$ .

All of the other pairs would work.

Remember:  
Always point to the SMALLEST number!  
Example:

$$10 > 5$$

10 is greater than 5

$$11 < 13$$

11 is less than 13

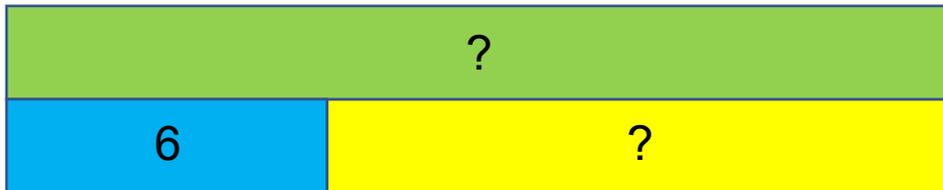
## Activity:

Here is a bar model with missing numbers.

If the first bar's number is  $> 10$ , but  $< 20$ , what could the missing numbers be?

How many possible answers are there?

How do you know that you have found them all?



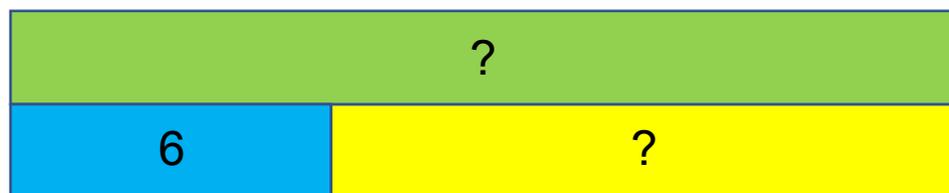
## Activity:

Here is a bar model with missing numbers.

If the first bar's number is  $> 10$ , but  $< 20$ , what could the missing numbers be?

How many possible answers are there?

How do you know that you have found them all?



There are 9 possible answers.

5 and 11

6 and 12

7 and 13

8 and 14

9 and 15

10 and 16

11 and 17

12 and 18

13 and 19

*To make sure you have them all, just make a list starting from 5 and 11. The gap between the numbers will always be 6. Stop at 19.*

- I can find all related addition and subtraction facts within 20
- I know the purposes of the addition, subtraction and equals signs
- I can explain the relationship between addition and subtraction using different models

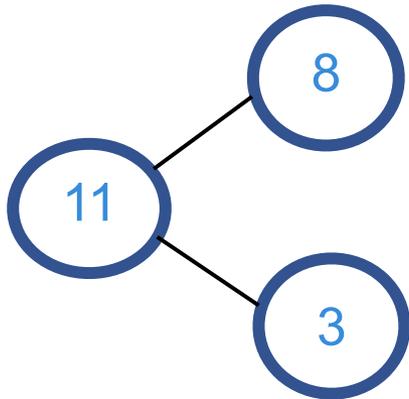
## Evaluation:

### Odd One Out

Here is a bar model.

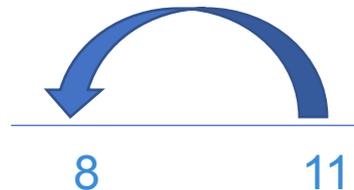
All the representations match, except one.

Which one is the odd one out?



$$11 - 8 = 3$$

There were 11 biscuits in a pack.  
3 were eaten.



$$8 = 11 + 3$$

- I can find all related addition and subtraction facts within 20
- I know the purposes of the addition, subtraction and equals signs
- I can explain the relationship between addition and subtraction using different models

## Evaluation:

### Odd One Out

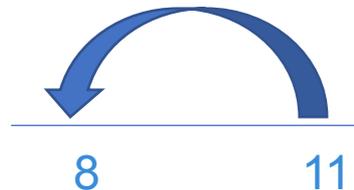
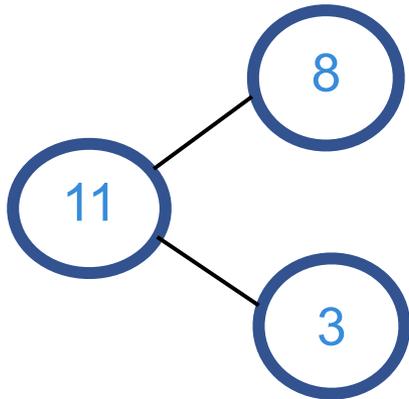
Here is a bar model.

All the representations match, except one.

Which one is the odd one out?



$$11 - 8 = 3$$



$8 = 11 + 3$  is the odd one out.

$$8 = 11 + 3$$

Day Two

Week 4 -  
13-4-20

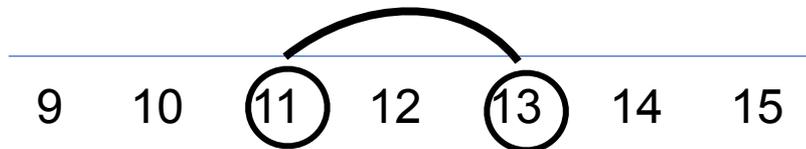
- I can use the inverse to check addition and subtraction calculations
- I can use different strategies including concrete resources, number lines and estimating
- I can explain the strategy I have chosen to use to check my answers

## Starter:

Here is part of a number line.

Which **four calculations or family of facts** could this part of the number line be representing?

Can you explain your thinking?



Remember:

Inverse means **OPPOSITE!**

Addition is the inverse of subtraction  
Subtraction is the inverse of addition

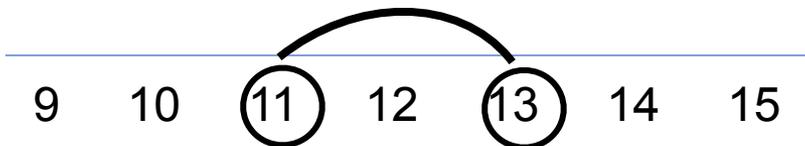
- I can use the inverse to check addition and subtraction calculations
- I can use different strategies including concrete resources, number lines and estimating
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## Starter:

Here is part of a number line.

Which **four calculations or family of facts** could this part of the number line be representing?

Can you explain your thinking?



$$11 + 2 = 13$$

$$2 + 11 = 13$$

$$13 - 2 = 11$$

$$13 - 11 = 2$$

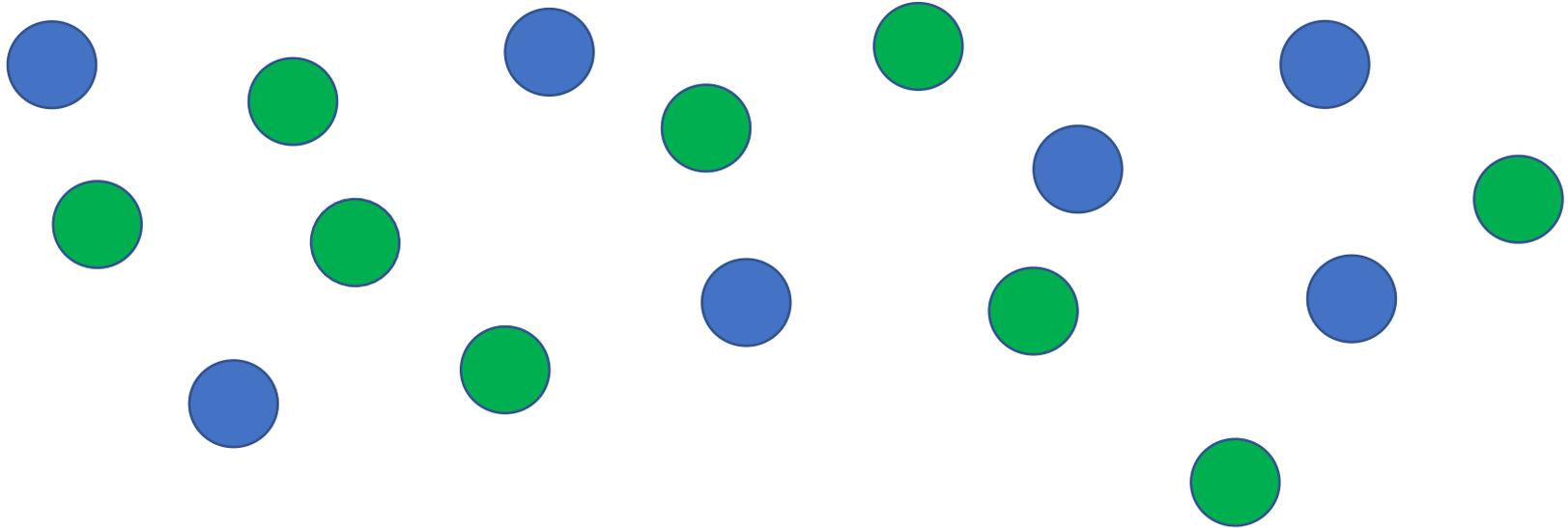
For every pair of numbers,  
there are 4 facts:  
2 addition and 2 subtraction.

## Talking Time:

Here is a calculation.

$$9 + 7 = 16$$

How could you use these objects to prove that the calculation is right?

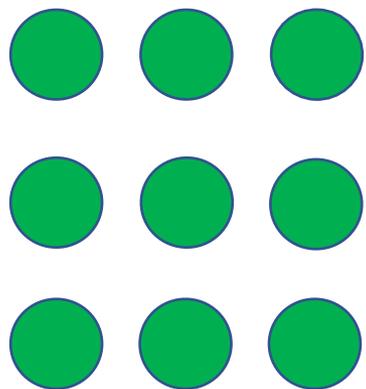


## Talking Time:

Here is a calculation.

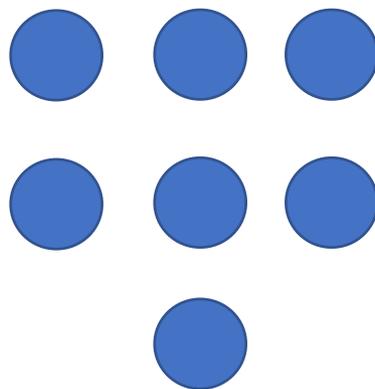
$$9 + 7 = 16$$

How could you use these objects to prove that the calculation is right?



9

+



7

=

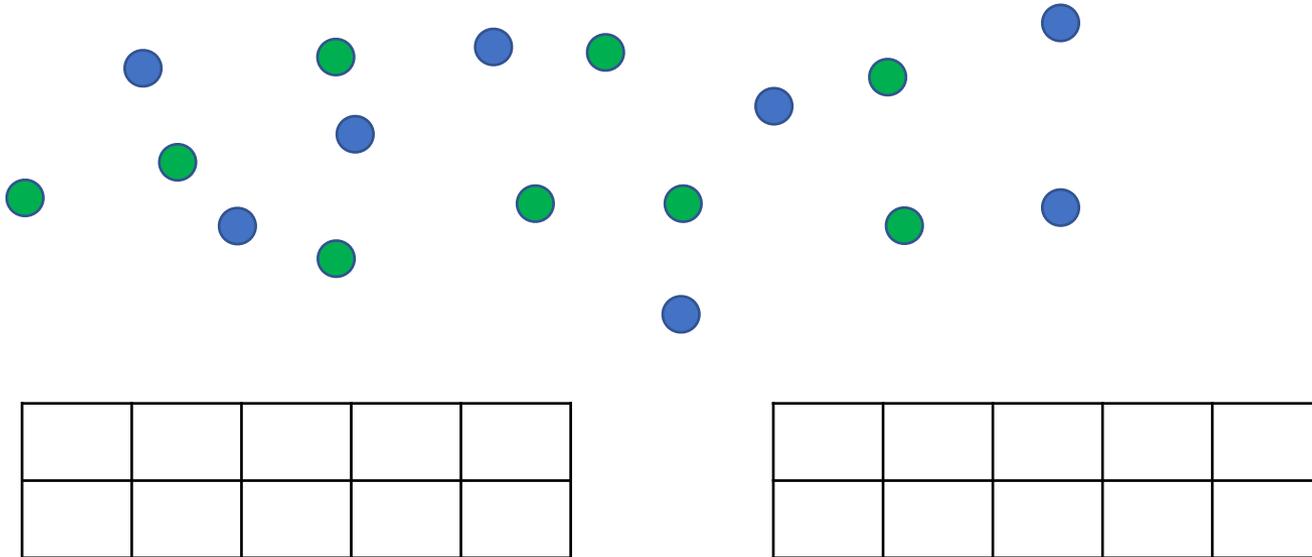
16

## Talking Time:

Here is a calculation.

$$8 + 9 = 17$$

How could you use these ten frames and counters to prove that the calculation is right?

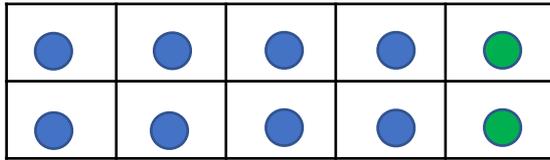


## Talking Time:

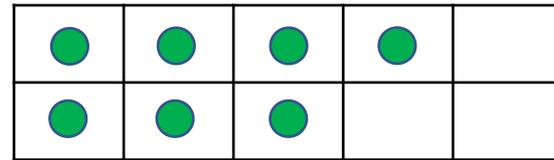
Here is a calculation.

$$8 + 9 = 17$$

How could you use these ten frames and counters to prove that the calculation is right?



$$8 + 2 + 7$$



$$7 = 17$$

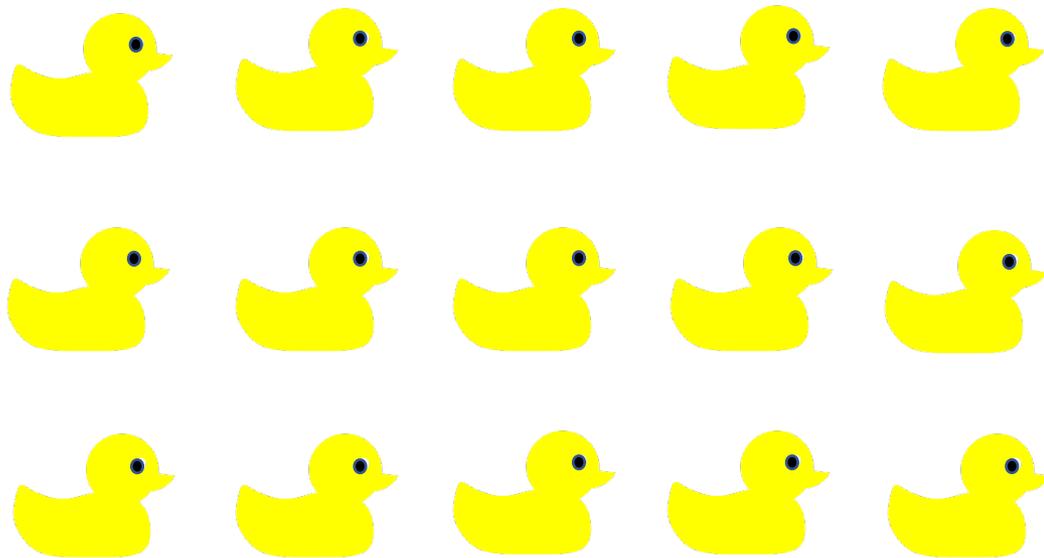
$8 + 9$  is the same as  $8 + 2 + 7$

## Talking Time:

Here is a calculation.

$$15 - 9 = 6$$

How could you use these objects to prove that the calculation is right?

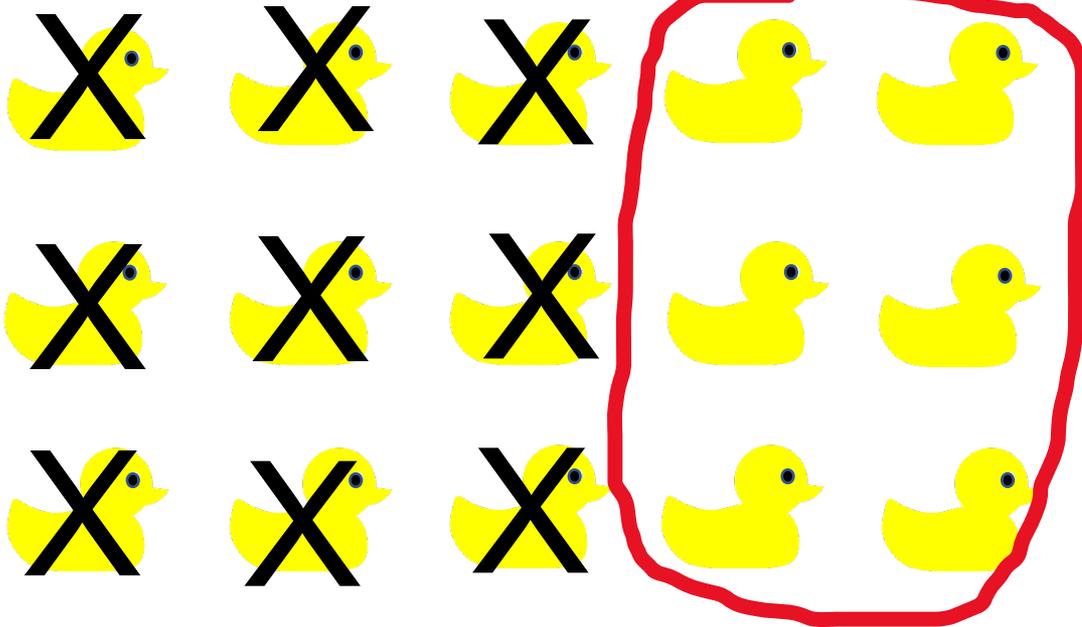


## Talking Time:

Here is a calculation.

$$15 - 9 = 6$$

How could you use these objects to prove that the calculation is right?

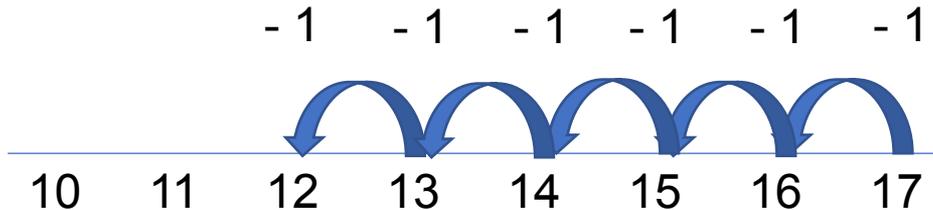


## Activity 1:

Ava used a number line to check this calculation

$$17 - 6 = 11.$$

Ava thinks that the answer should be 12.  
This is what she did.



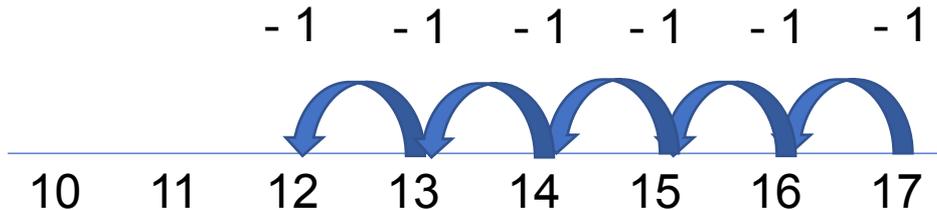
Do you agree with Ava? Why / why not?

## Activity 1:

Ava used a number line to check this calculation

$$17 - 6 = 11.$$

Ava thinks that the answer should be 12.  
This is what she did.



Do you agree with Ava? Why / why not?



Ava is not correct.

The answer is 11.

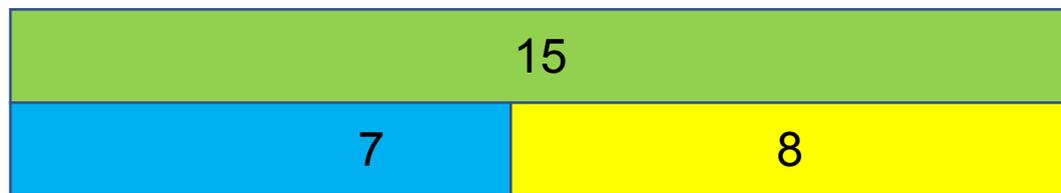
Ava has only counted back 5 jumps and not 6.  
She has counted the number she started at as a jump back.

Day Three

## Talking Time:

Here is a bar model.

It is showing the calculation  $7 + 8 = 15$ .



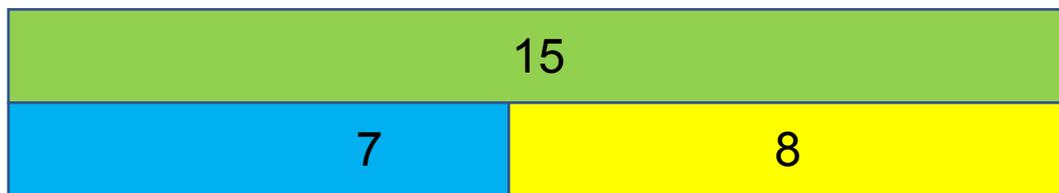
Can you use an inverse calculation to check that answer?

Is there more than one inverse calculation that we could use to check?

## Talking Time:

Here is a bar model.

It is showing the calculation  $7 + 8 = 15$ .



Can you use an inverse calculation to check that answer?

Is there more than one inverse calculation that we could use to check?

You could use  $15 - 7 = 8$

or

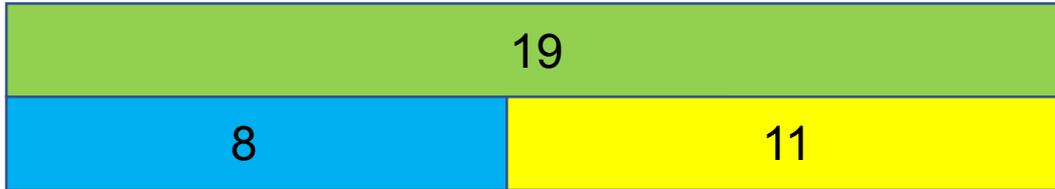
$15 - 8 = 7$  to check

*Also, remember that  $8 + 7 = 15$  would be a way to check.*

## Talking Time:

Here is a bar model.

It is showing this calculation  $8 + 11 = 19$ .



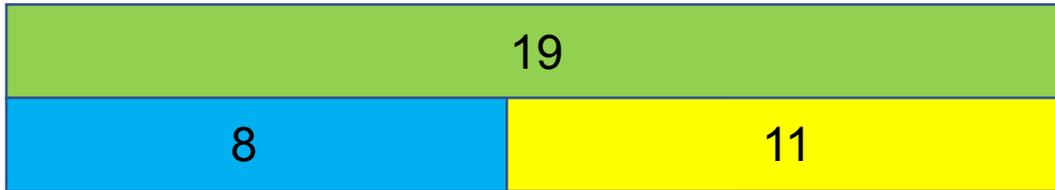
Can you use an inverse calculation to check that answer?

Is there more than one inverse calculation that we could use to check?

## Talking Time:

Here is a bar model.

It is showing this calculation  $8 + 11 = 19$ .



Can you use an inverse calculation to check that answer?

Is there more than one inverse calculation that we could use to check?

You could use  $19 - 8 = 11$

or

$19 - 11 = 8$  to check

## Talking Time:

Here is a bar model.

It is showing a calculation.



How could you find the missing number to make the calculation correct?

Would 5 be a good estimate for the answer?

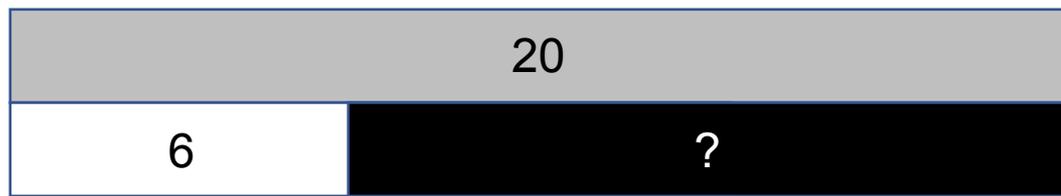
Why / why not?

How could you check that your answer is correct?

## Talking Time:

Here is a bar model.

It is showing a calculation.



How could you find the missing number to make the calculation correct?

You could use real objects or a number line or count on from 6 to 20.

Would 5 be a good estimate for the answer? **No**

Why / why not?

$6 + 4 = 10$ , so  $6 + 5 = 11$ . 5 is too small a number.

How could you check that your answer is correct?

You could use the inverse, real objects or a number line.

The missing number is 14.

$$6 + 14 = 20$$

$$14 + 6 = 20$$

$$20 - 6 = 14$$

$$20 - 14 = 6$$

**Day Four**

## Activity 2:

Ollie calculated that

$$14 - 9 = 5.$$

He checked his answer using the inverse.



If  $14 - 9 = 5$ , then the  
inverse is  
 $14 + 9$  which is 23.

Something is not right. Can you help Ollie out?

## Activity 2:

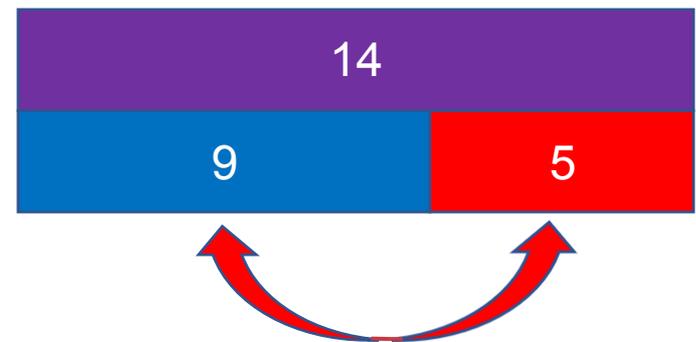
Ollie calculated that

$$14 - 9 = 5.$$

He checked his answer using the inverse.



If  $14 - 9 = 5$ , then the  
inverse is  
 $14 + 9$  which is 23.



Something is not right. Can you help Ollie out?

Ollie could use a bar model to help to show  
that the inverse should be  $9 + 5 = 14$  or  $5 + 9 = 14$ .

## Talking Time:

Alice writes this calculation.

$$19 - 13 = 6.$$

Which **one** of these number sentences could help her to check the answer?

$$19 + 13$$

$$13 - 6$$

$$13 + 6$$

$$13 + 19$$



### Extension:

Can you explain, in mathematical sentences, why the other three do NOT work?

## Talking Time:

Alice writes this calculation.

$$19 - 13 = 6.$$

Which **one** of these number sentences could help her to check the answer?

$$19 + 13$$

$$13 - 6$$

**13 + 6 is the one that works, because**

$$13 + 19 \quad 13 + 6 = 19.$$



### Extension:

Can you explain, in mathematical sentences, why the other three do NOT work?

## Talking Time:

Alice writes this calculation

$$11 + 8 = 19.$$

Which of these number sentences could help her to check the answer?

$$8 + 11$$

$$19 - 8$$

$$19 - 11$$

$$11 - 19$$



## Talking Time:

Alice writes this calculation

$$11 + 8 = 19.$$



Which of these number sentences could help her to check the answer?

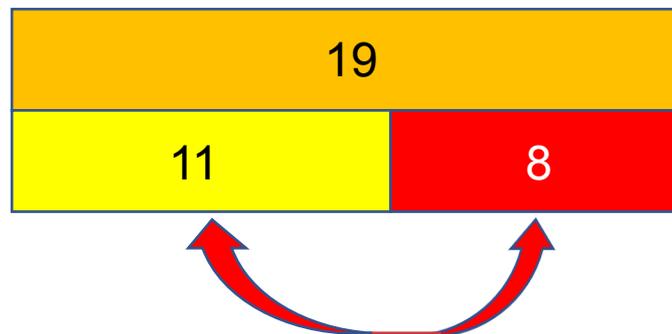
$$8 + 11$$

$$19 - 8$$

$$19 - 11$$

$$11 - 19$$

Only  $11 - 19$  does not work as a check.

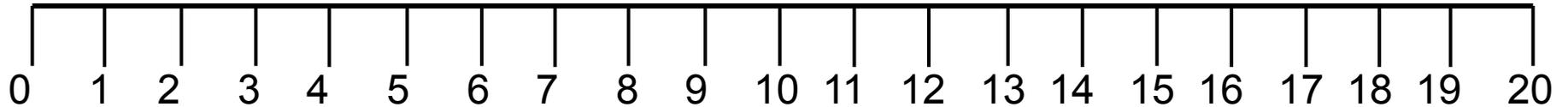


Day Five

### Activity 3:

How could Lola use the number line to show how to check that

$$20 - 13 = 7?$$

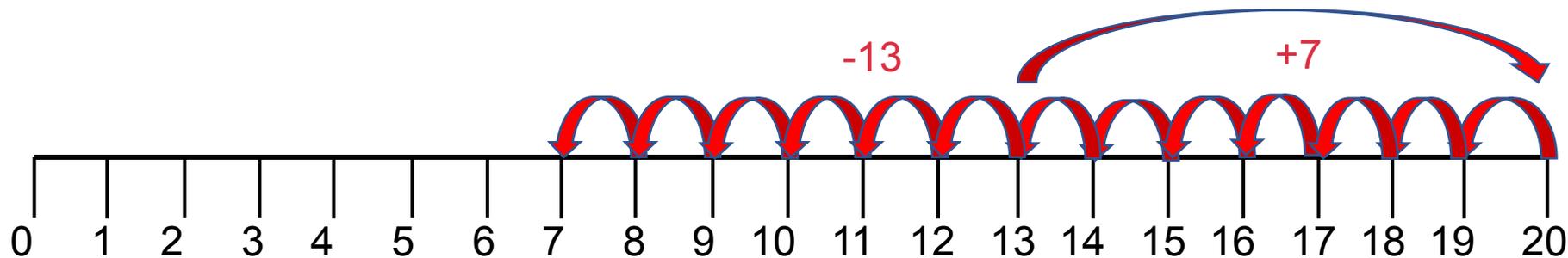


### Activity 3:

How could Lola use the number line to show how to check that

$$20 - 13 = 7?$$

Lola could start at 20 and count back 13  
or she could start at 13 and add on 7.



*Are there any other calculations that Lola could use to check?*

- I can use the inverse to check addition and subtraction calculations
- I can use different strategies including concrete resources, number lines and estimating
- I can explain the strategy I have chosen to use to check my answers

## Evaluation:

Riley has been asked to check his friend's work.

These are the calculations that his friend has written:

$$23 + 7 = 94$$

$$27 - 22 = 15$$

$$19 - 7 = 26$$

These do not look right!

What should Riley say to his friend to help him?



- I can use the inverse to check addition and subtraction calculations
- I can use different strategies including concrete resources, number lines and estimating
- I can explain the strategy I have chosen to use to check my answers

## Evaluation:

Riley has been asked to check his friend's work.  
These are the calculations that his friend  
has written:

$$23 + 7 = 94$$

Riley's friend has added 2 tens and 7 ones.

The real answer should be 30.

Start at 23 and count on 7.

$$27 - 22 = 15$$

27 is only 5 away from 22. Start at 27 and count back 5.

$$19 - 7 = 26$$

Riley's friend has added and not subtracted.

These do not look right!

What should Riley say to his friend to help him?

