Addition and Subtraction

Master The Curriculum

1

Fluency Teaching Slides

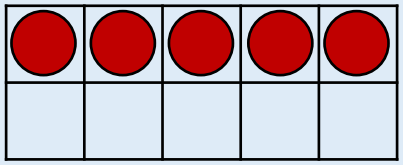
Add by Counting On 1

Fluency & Reasoning Teaching Slides

Activity 1 Add by Counting On

Use ten frames to complete the number story.

First



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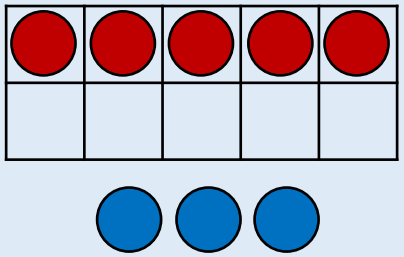

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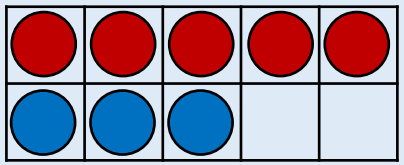


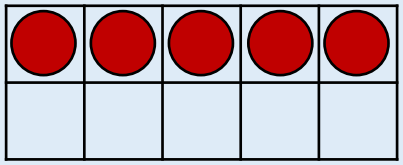
First there were ___ cars in the car park.
Then ___more cars parked in the car park.
Now there are ___ cars in the car park.

What number did you start with? Then what happened? Now what do I have?

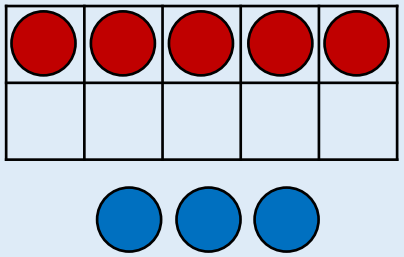
Activity 1 Add by Counting On

Use ten frames to complete the number story.

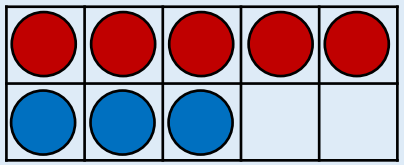
First



Then



Now

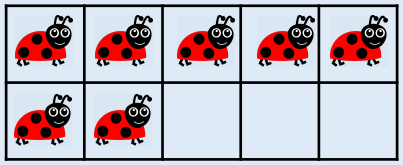


First there were 5 cars in the car park.
Then 3 more cars parked in the car park.
Now there are 8 cars in the car park.

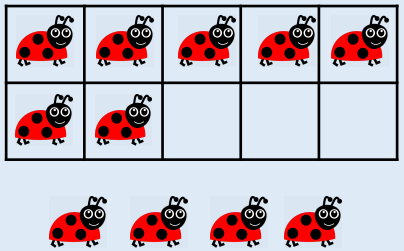
Activity 1 Add by Counting On

Use ten frames to complete the number story.

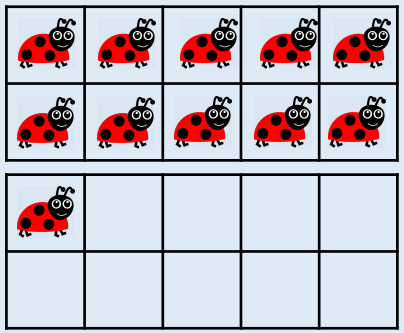
First



Then



Now

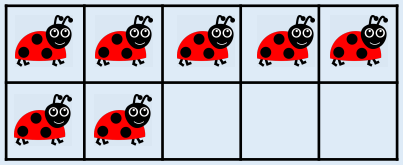


First there were ___ ladybirds.
Then ___more joined the group.
Now there are ___ ladybirds.

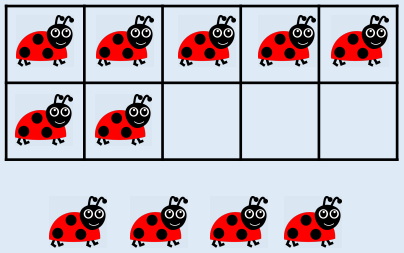
Activity 1 Add by Counting On

Use ten frames to complete the number story.

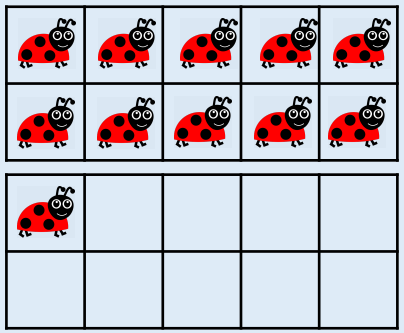
First



Then



Now

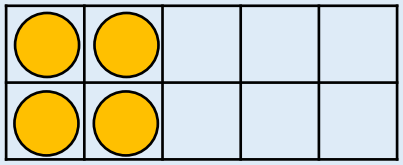


First there were 7 ladybirds.
Then 4 more joined the group.
Now there are 11 ladybirds.

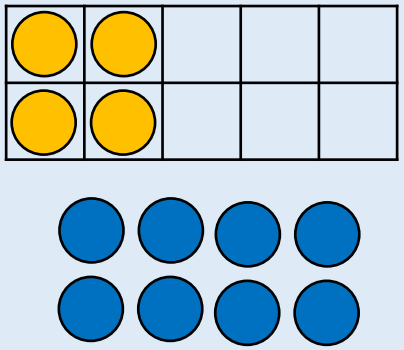
Activity 1 Add by Counting On

Use ten frames to complete the number story.

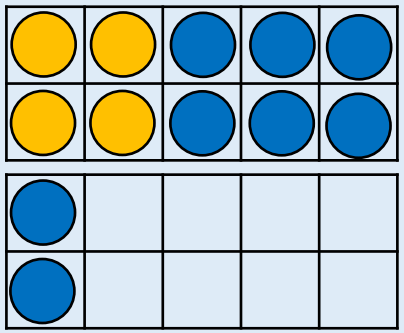
First



Then



Now



First there were ___.

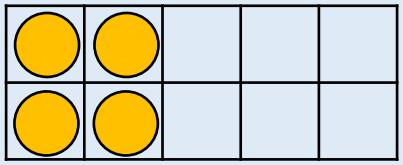
Then ___ more were added.

Now there are ___.

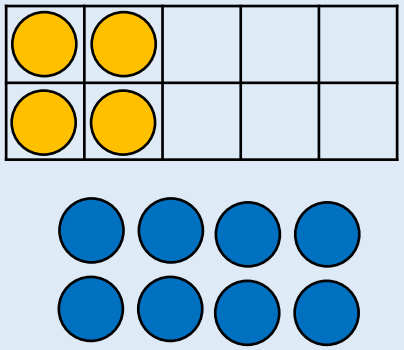
Activity 1 Add by Counting On

Use ten frames to complete the number story.

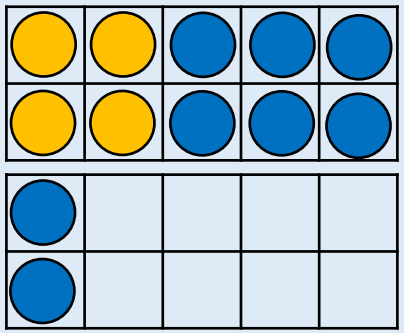
First



Then



Now



First there were 4.

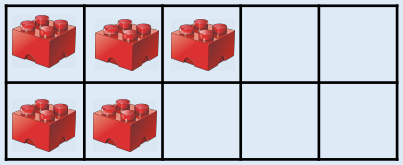
Then 8 more were added.

Now there are 12.

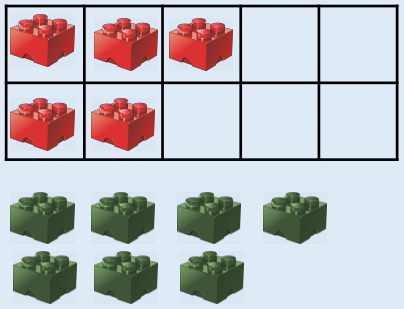
Activity 1 Add by Counting On

Use ten frames to complete the number story.

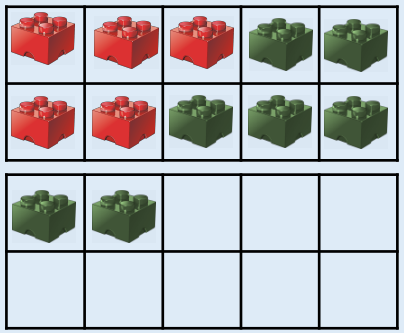
First



Then



Now



First there were ___.

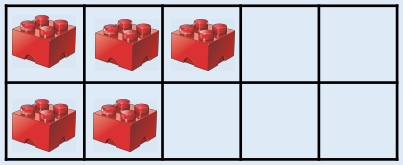
Then ___ more were added.

Now there are ___.

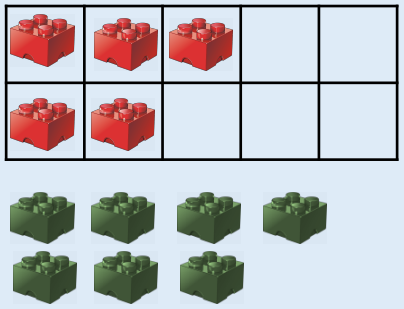
Activity 1 Add by Counting On

Use ten frames to complete the number story.

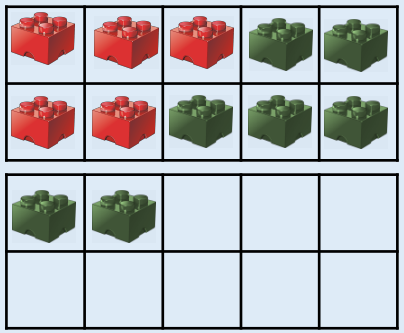
First



Then



Now



First there were 5.

Then 7 more were added.

Now there are 12.

Activity 2 Add by Counting On

Esin has 13 prize tokens. She wins 5 more.
How many prize tokens does Esin have now?

What does each number represent?

Activity 2 Add by Counting On

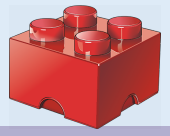
Esin has 13 prize tokens. She wins 5 more.
How many prize tokens does Esin have now?

First there were 13 prize tokens.
Then Esin wins 5 more.
Now there are 18 prize tokens.

Activity 2 Add by Counting On

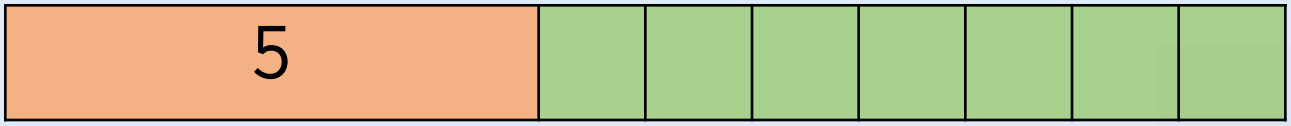
Zach has 5 Lego pieces. He buys 7 more.
How many Lego pieces does Zach have now?

5							

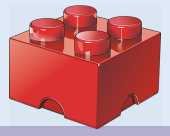


Activity 2 Add by Counting On

Zach has 5 Lego pieces. He buys 7 more.
How many Lego pieces does Zach have now?



First Zach has 5 Lego pieces.
Then he buys 7 more.
Now Zach has 12 Lego pieces.

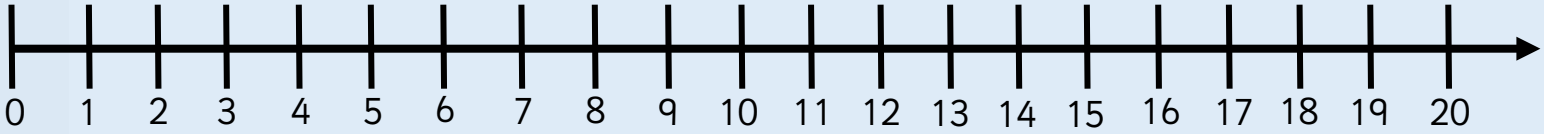


Activity 3

Add by Counting On

Malachi starts at 9 and counts on 6.
Show his calculation on the number line.

$9 + 6 = \square$

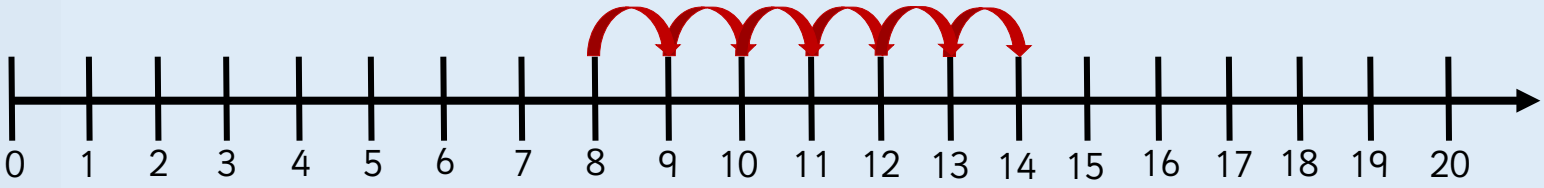


How can I represent counting on using practical equipment?

Activity 3 Add by Counting On

Malachi starts at 9 and counts on 6.
Show his calculation on the number line.

$9 + 6 = \boxed{15}$

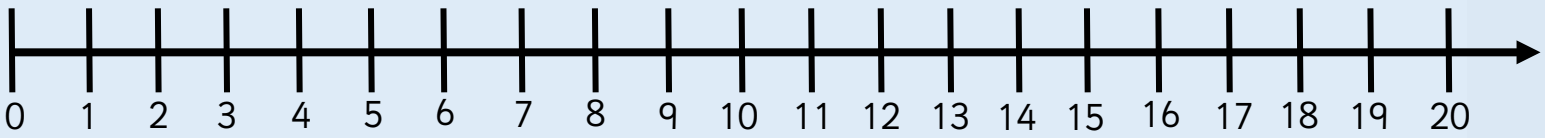


Activity 3

Add by Counting On

Tia has 11 medals. She wins 7 more.
Show her calculation on the number line.

$$11 + 7 = \square$$

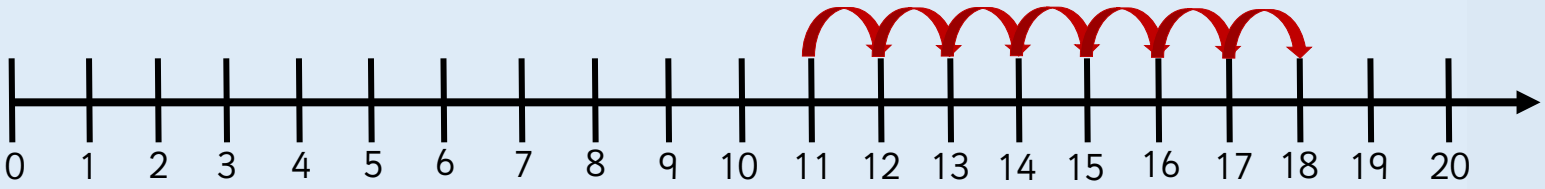


Activity 3

Add by Counting On

Tia has 11 medals. She wins 7 more.
Show her calculation on the number line.

$$11 + 7 = \boxed{18}$$



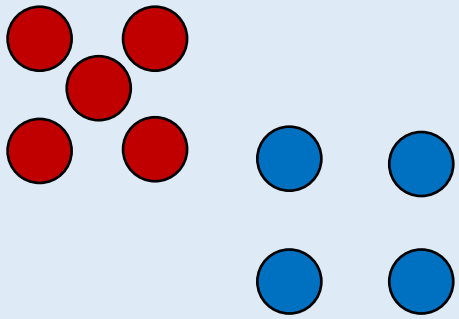
Reasoning - 1 Add by Counting On

Use the diagram and counters to tell your own number story for these calculations:

0 + 10 = ____

6 + 0 = ____

13 + ____ = 17



First | Then | Now

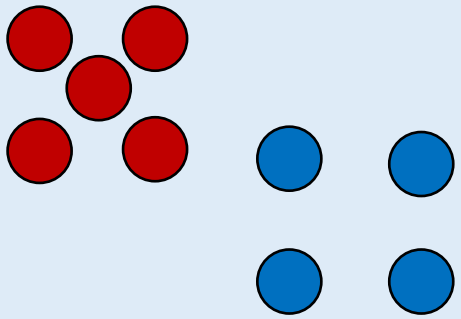
Reasoning - 1 Add by Counting On

Use the diagram and counters to tell your own number story for these calculations:

0 + 10 = ____

6 + 0 = ____

13 + ____ = 17



Children can come up with a range of contexts where they have an amount that is increasing. Using 'First, then and now' they describe it.

Reasoning - 2 Add by Counting On

Malachi and Zach are working out 10 + 6.

Malachi

10, 11, 12, 13, 14, 15

11, 12, 13, 14, 15, 16

Zach

Use a number line to show who is correct.

Reasoning - 2 Add by Counting On

Malachi and Zach are working out 10 + 6.

Malachi

10, 11, 12, 13, 14, 15

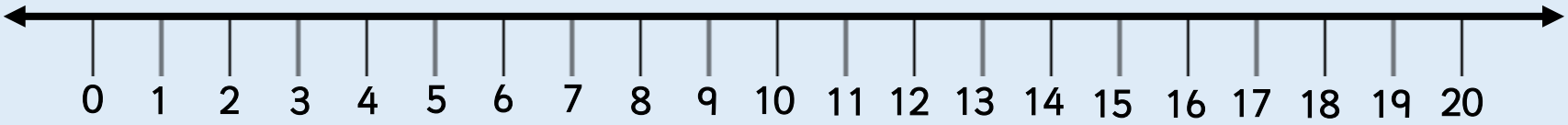
11, 12, 13, 14, 15, 16

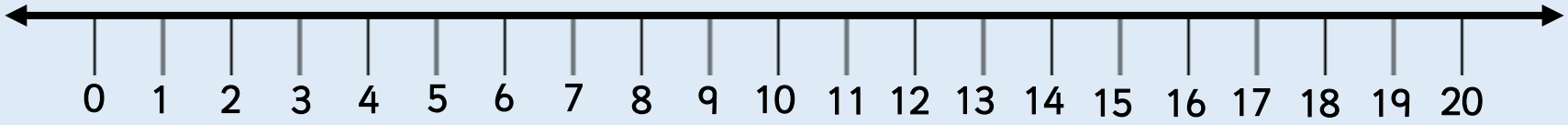
Zach

Zach is correct as he has counted on 6 steps from 10.
Malachi has incorrectly included 10 when counting.

Reasoning - 3 Add by Counting On

Rosie starts at 8 and adds on 5.
Tia starts at 5 and adds on 8.





Show their calculations on the number lines.
What do you notice? Does this always happen?
Which method do you like best? Why?

Reasoning - 3 Add by Counting On

Rosie starts at 8 and adds on 5.
Tia starts at 5 and adds on 8.

Both children end on 13.
This is because 8 + 5 is equivalent to 5 + 8.

The children can explore their own calculations to understand that addition is always commutative.
They see that Rosie's method is quicker because there is less to count on.

Discussion

Add by Counting On

What number did you start with? Then what happened?
Now what do I have?

What does each number represent?
What do the counters represent?

How can I represent counting on using practical equipment?
How can I represent counting on using a bar model or a number line?

Find & Make Number Bonds

1

Fluency & Reasoning Teaching Slides

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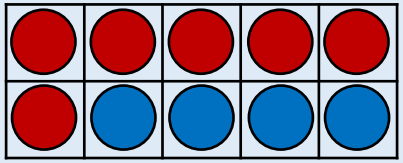
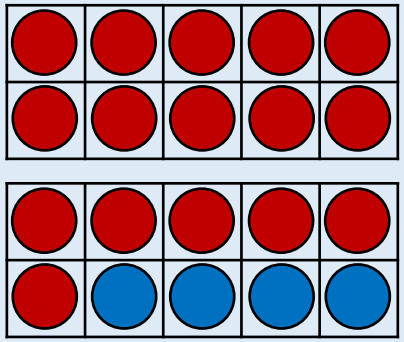
Activity 1 — Find & Make Number Bonds

What number bond is represented in the pictures?



There are ___ red counters.
There are ___ blue counters.
Altogether there are ___ counters.
___ + ___ = ___ ___ + ___ = ___

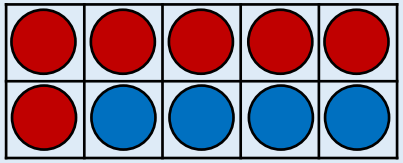


There are ___ red counters.
There are ___ blue counters.
Altogether there are ___ counters.
___ + ___ = ___
___ + ___ = ___

What strategy do you use to make sure you find all the number bonds?

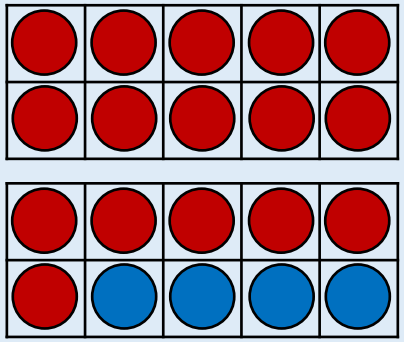
Activity 1 Find & Make Number Bonds

What number bond is represented in the pictures?



There are 6 red counters.
There are 4 blue counters.
Altogether there are 10 counters.

6 + 4 = 10 4 + 6 = 10



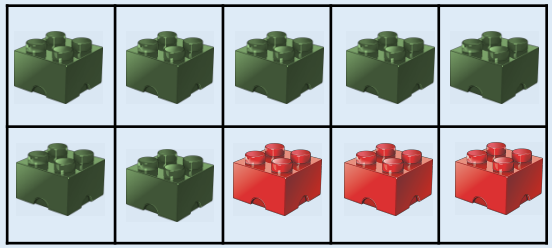
There are 16 red counters.
There are 4 blue counters.
Altogether there are 20 counters.

16 + 4 = 20
4 + 16 = 20

This represents number bonds of 10 and 20.

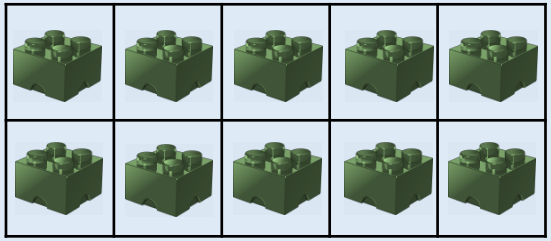
Activity 1 Find & Make Number Bonds

What number bond is represented in the pictures?



There are ___ green Lego pieces.
There are ___ red Lego pieces.
Altogether there are ___ Lego pieces.

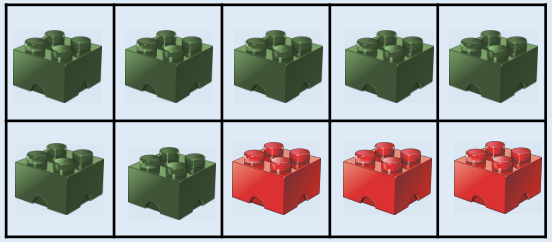
___ + ___ = ___ ___ + ___ = ___



There are ___ green Lego pieces.
There are ___ red Lego pieces.
Altogether there are ___ Lego pieces.

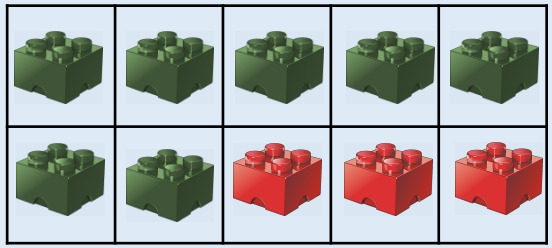
___ + ___ = ___

___ + ___ = ___



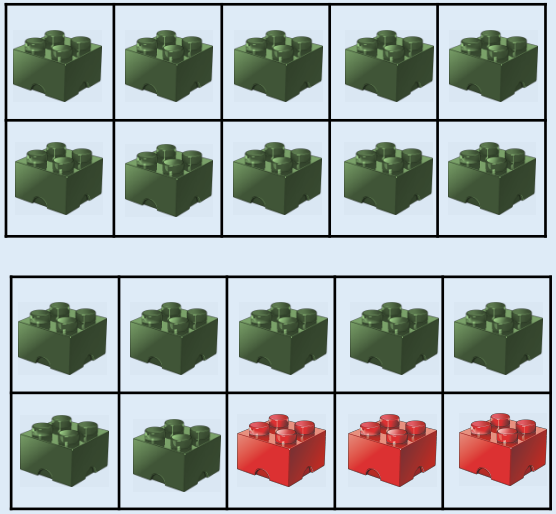
Activity 1 — Find & Make Number Bonds

What number bond is represented in the pictures?



There are 7 green Lego pieces.
There are 3 red Lego pieces.
Altogether there are 10 Lego pieces.

7 + 3 = 10 3 + 7 = 10



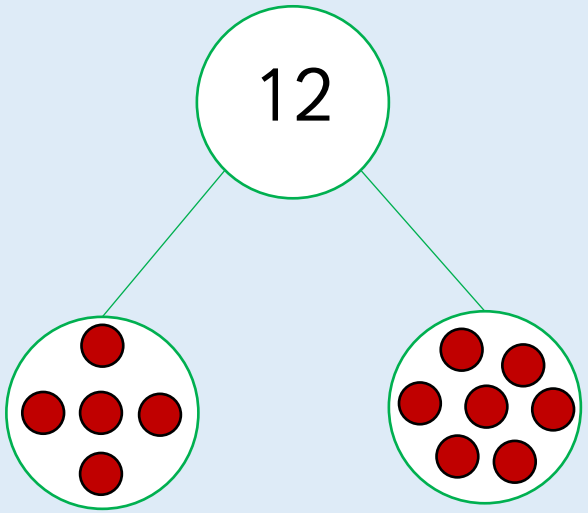
There are 17 green Lego pieces.
There are 3 red Lego pieces.
Altogether there are 20 Lego pieces.

17 + 3 = 20
3 + 17 = 20

This represents number bonds of 10 and 20.

Activity 2 Find & Make Number Bonds

Continue the pattern to find all the number bonds to 12.
How do you know you have found them all?



$12 = 12 + 0$

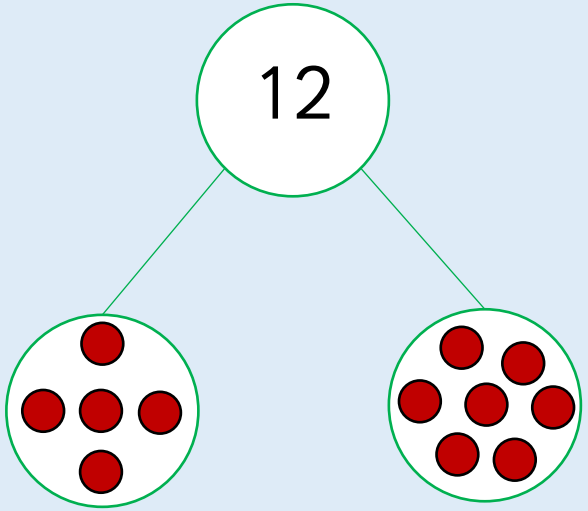
$12 = 11 + \_\_\_\_$

$12 = 10 + \_\_\_\_$

What number bond can we see?

Activity 2 Find & Make Number Bonds

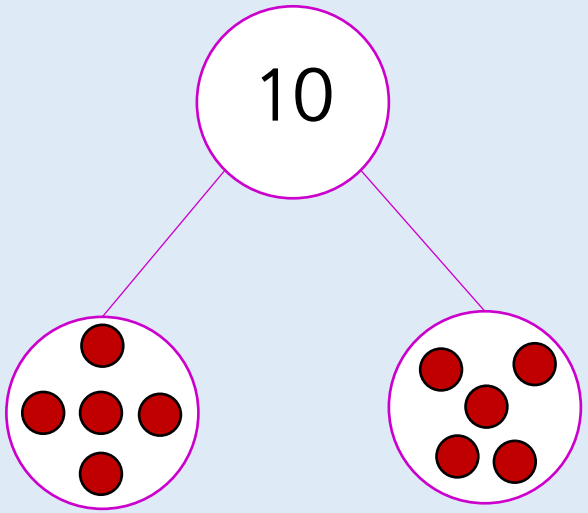
Continue the pattern to find all the number bonds to 12.
How do you know you have found them all?



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

Activity 2 Find & Make Number Bonds

Continue the pattern to find all the number bonds to 10.
How do you know you have found them all?



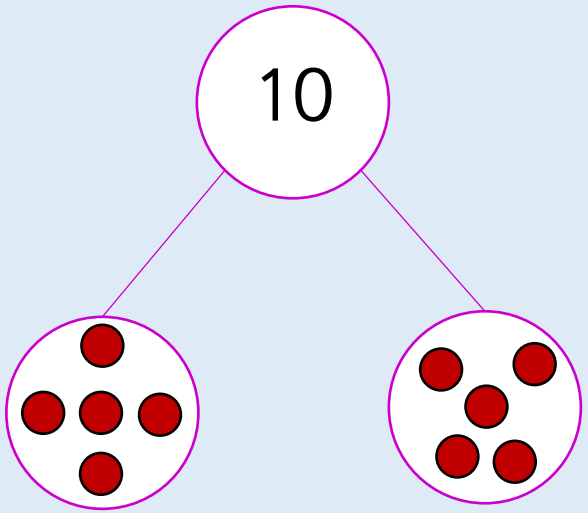
$10 = 10 + 0$

$10 = 9 + \_\_\_\_$

$10 = 8 + \_\_\_\_$

Activity 2 Find & Make Number Bonds

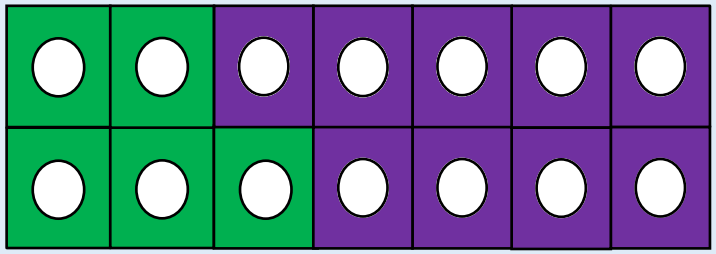
Continue the pattern to find all the number bonds to 10.
How do you know you have found them all?



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

Activity 3 Find & Make Number Bonds

Describe the number bond shown.



___ and ___ make ___

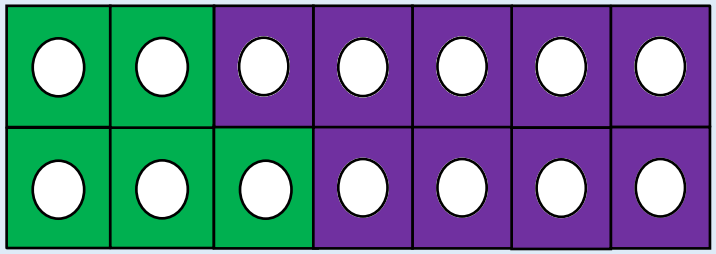
___ is made of ___ and ___

___ + ___ = ___ ___ + ___ = ___

___ − ___ = ___ ___ − ___ = ___

Activity 3 Find & Make Number Bonds

Describe the number bond shown.



5 and 9 make 14

14 is made of 5 and 9

5 + 9 = 14 9 + 5 = 14

14 – 5 = 9 14 – 9 = 5

Reasoning - 1

Find & Make Number Bond

Use equipment to represent each of the calculations below.

$$6 + 4 = 10$$

$$16 + 4 = 20$$

$$20 = 6 + 14$$

What is the same? What is different?
Explain your thinking.

Reasoning - 1 Find & Make Number Bond

Use equipment to represent each of the calculations below.

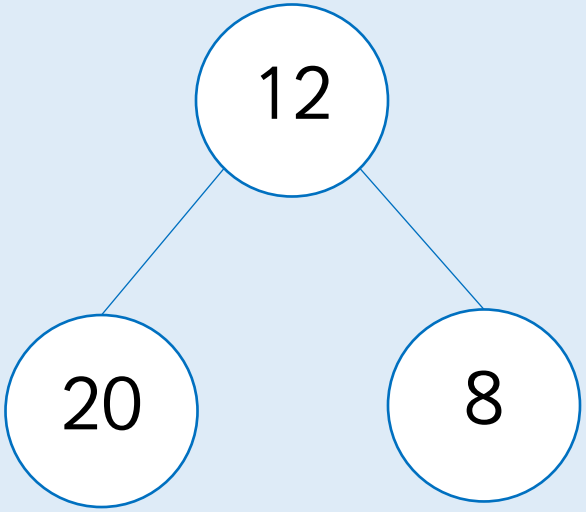
Children may notice that the = is in different place.

They might notice that the number of ones remains the same and that ten has been added to create a number bond to 20.

Mathematical equipment such as ten frames or Base 10 will make this clear.

Reasoning - 2 Find & Make Number Bond

Zach represents a number bond to 20 in the part whole model.

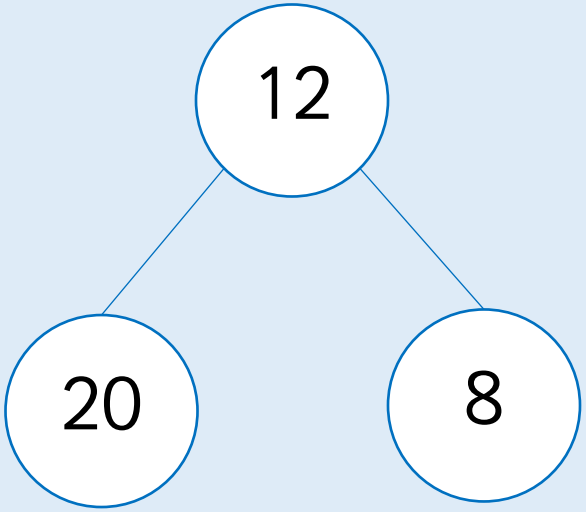


Can you spot his mistake?

Reasoning - 2

Find & Make Number Bond

Zach represents a number bond to 20 in the part whole model.



Possible response:
Zach has put 20 as a part but it should be a whole.

Reasoning - 3 Find & Make Number Bond

True or False?

There are half the amount of numbers bonds to 10 than there are number bonds to 20.

Prove it – can you use a systematic approach?

Reasoning - 3 Find & Make Number Bond

True or False?

There are half the amount of numbers bonds to 10 than there are number bonds to 20.

False – there are 11 number bonds to 10 and 21 number bonds to 20.
Children can show this in various ways.

Discussion

Find & Make Number Bonds

What strategy could you use to make sure you find all the number bonds?

What number bonds can we see?
How does this help us find the number bond to 20?

How does knowing your number bonds to 10 help you to work out your number bonds to 20?

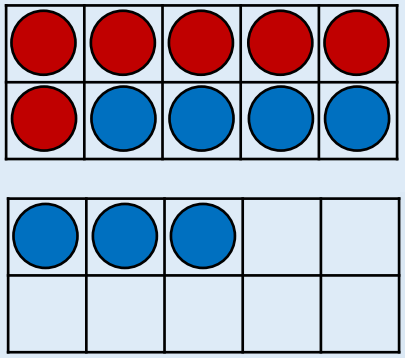
Add by Making 10

1

Fluency & Reasoning Teaching Slides

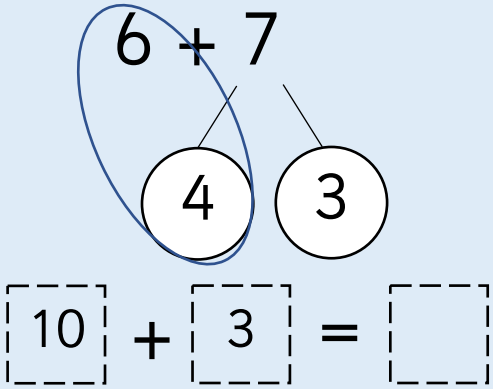
Activity 1 Add by Making 10

Leanna has used the 10 frames to calculate 6 + 7



Leanna

I partitioned the 7 into 4 and 3 so that I could make a full 10.

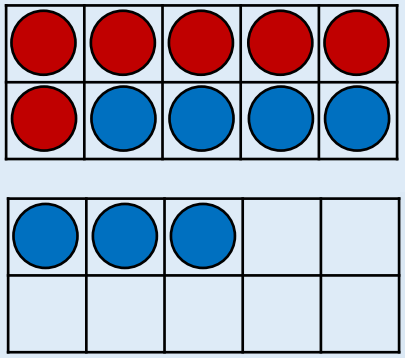


Can you see that 6 + 4 = 10? Where is it on the tens frame? Where is it in the number sentence?

How does using the counters help you to see this strategy?

Activity 1 Add by Making 10

Leanna has used the 10 frames to calculate 6 + 7



Leanna

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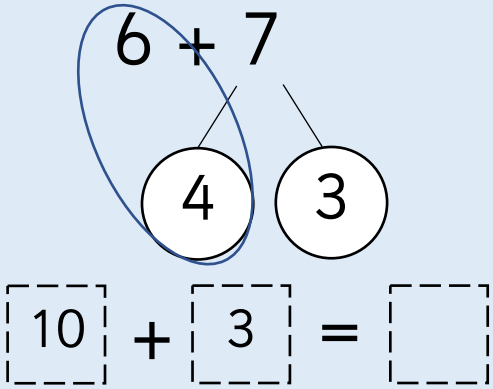
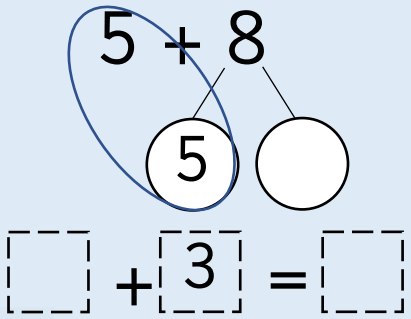
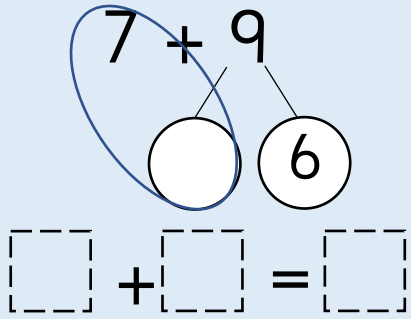
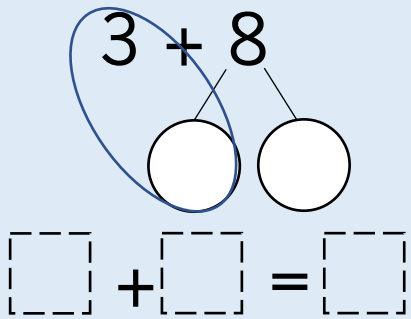


Use Leanna's method to complete:



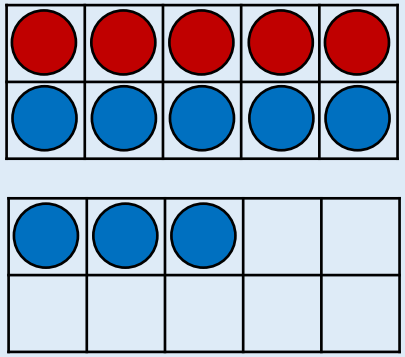


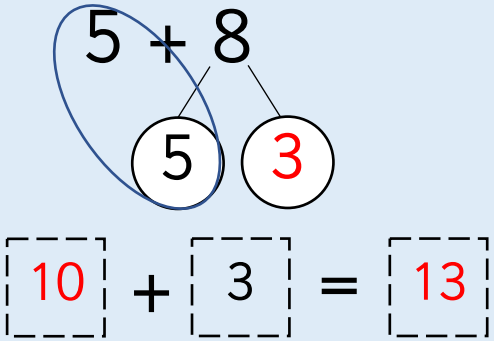


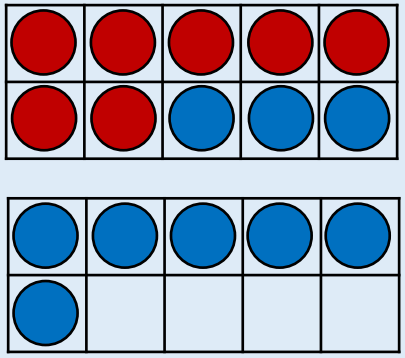
How does using the counters help you to see this strategy?

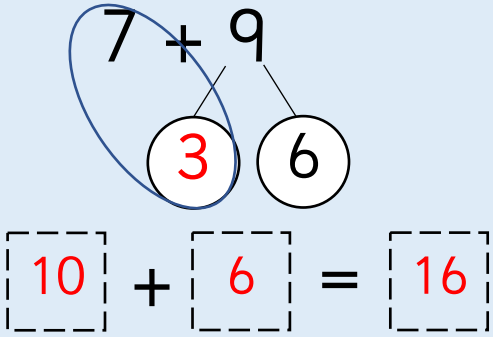
Activity 1 Add by Making 10

Leanna has used the 10 frames to calculate 6 + 7









Activity 1 Add by Making 10

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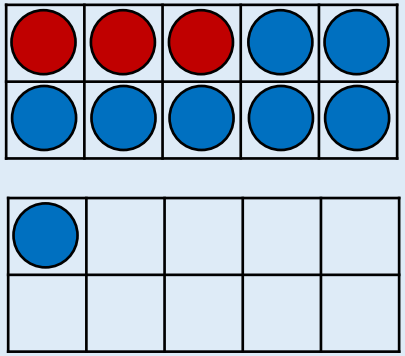
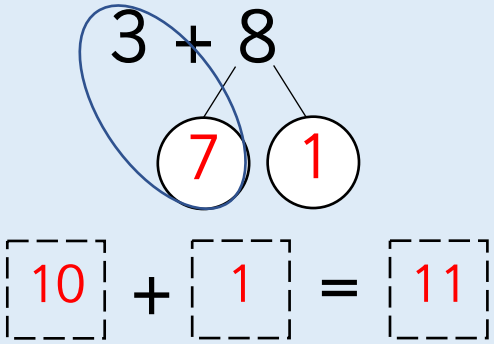


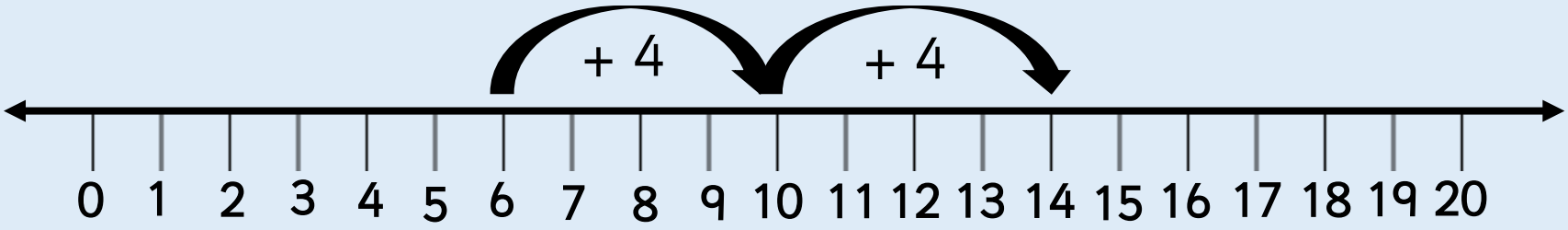


Activity 2 Add by Making 10

Malachi has used a number line to calculate 6 + 8

Malachi

I partitioned 8 into 4 and 4 to make it easier.



Use Malachi's method to calculate:

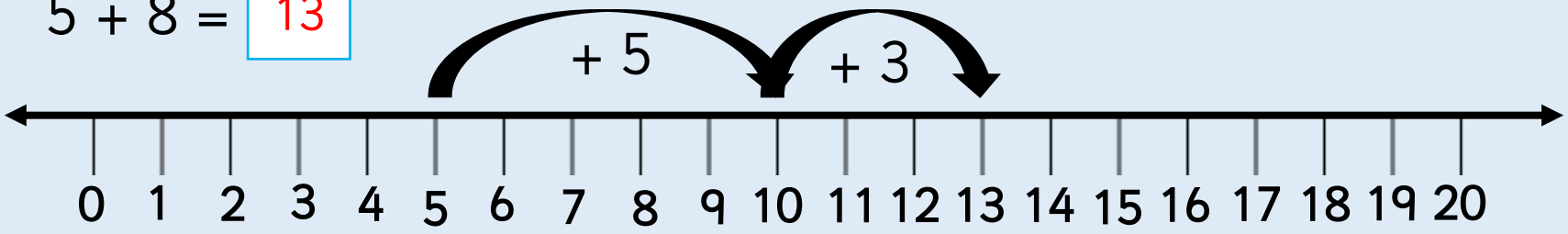
5 + 8 = ☐ 9 + 4 = ☐ 6 + 8 = ☐

How does using a number line help you see this strategy?

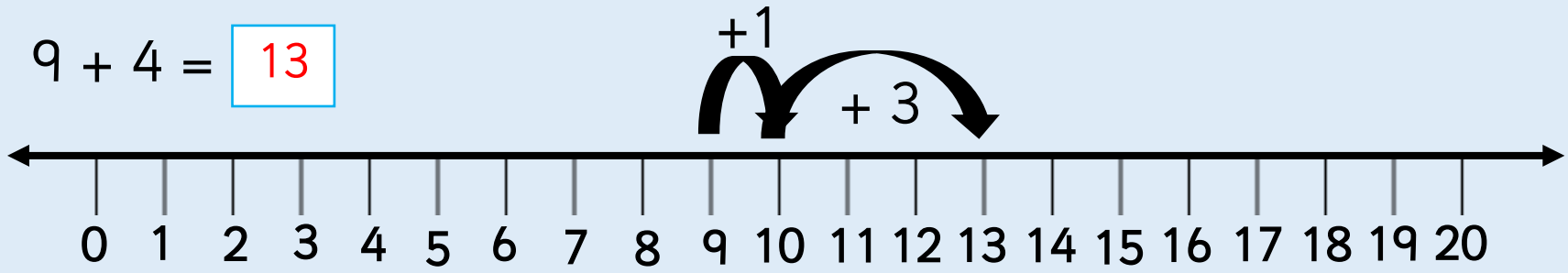
Activity 2 Add by Making 10

Malachi has used a number line to calculate 6 + 8

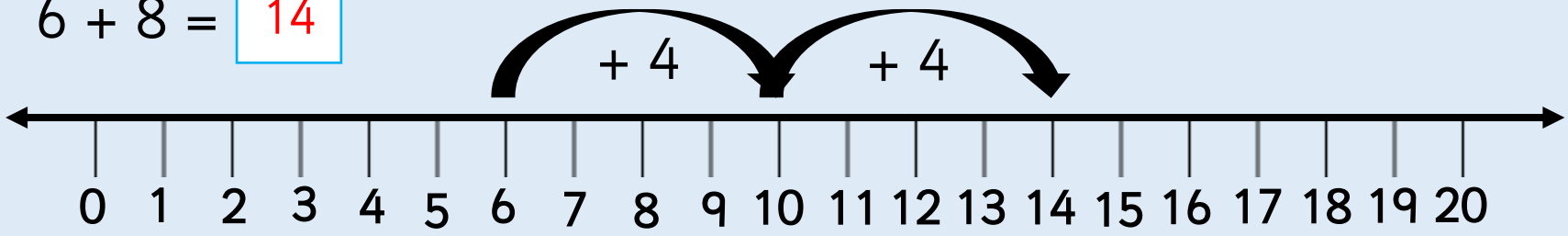
5 + 8 = 13



9 + 4 = 13



6 + 8 = 14

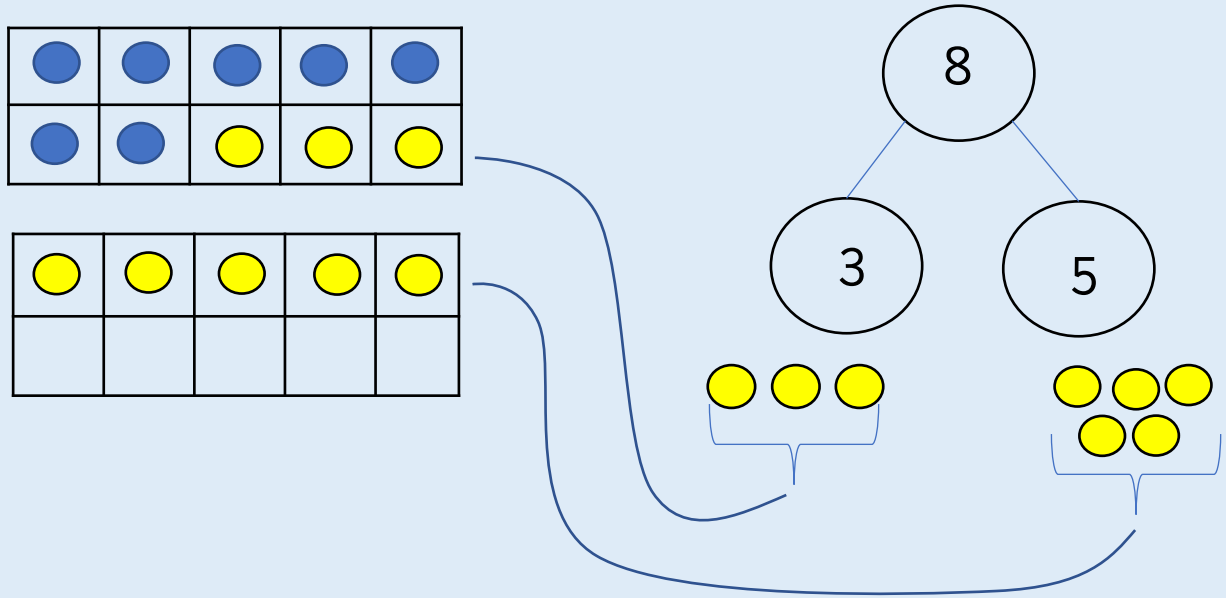


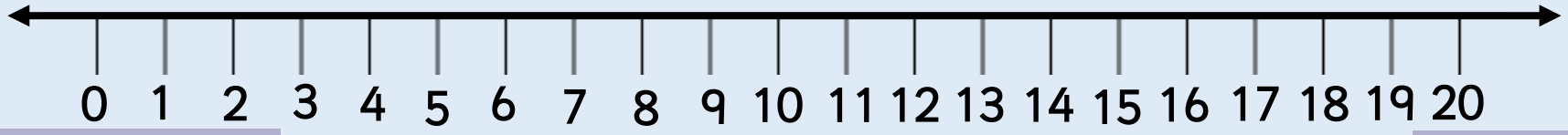
Activity 3 Add by Making 10

Esin has 7 sweets and Zach gives her 8 more.
How many sweets does she have altogether?

Show your calculation on the number line.

7 + 3 = 10
10 + 5 = 15





Activity 3 Add by Making 10

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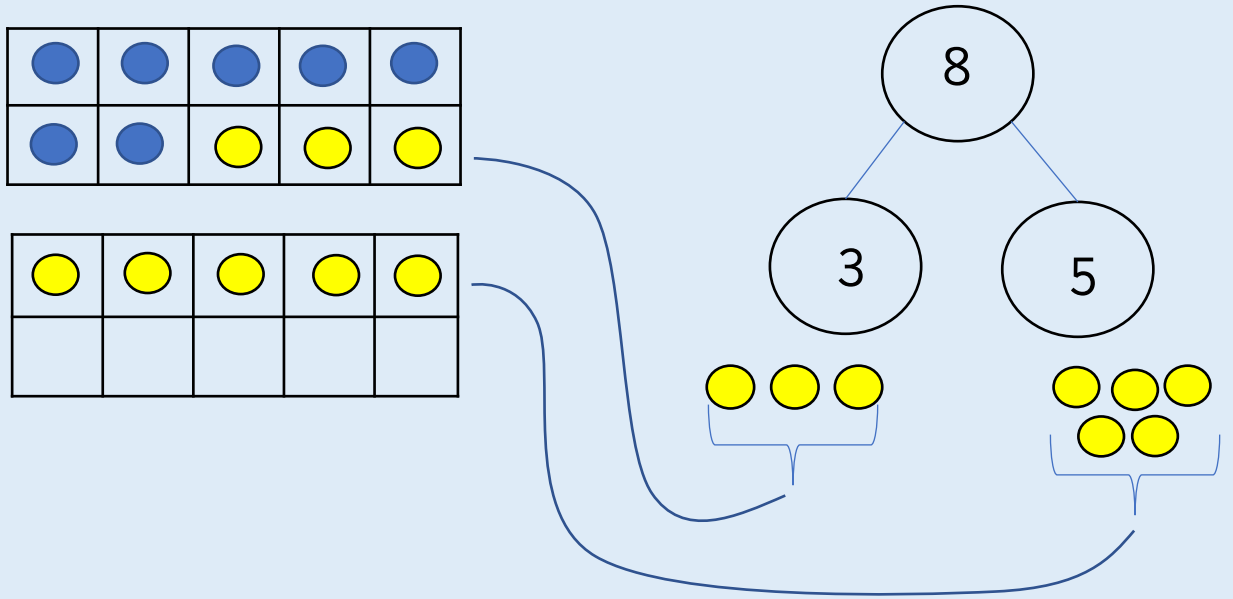
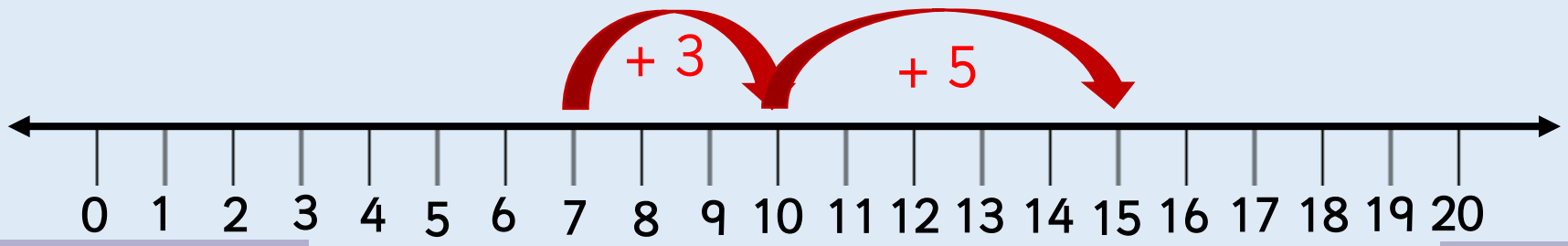
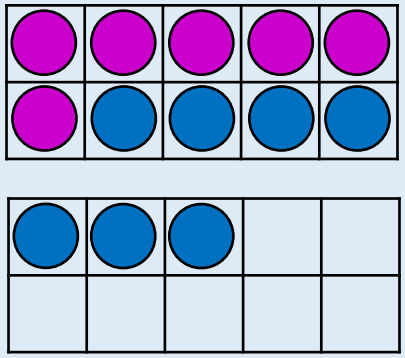
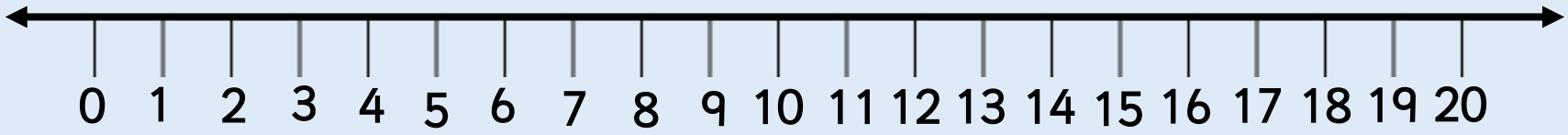




Activity 4 Add by Making 10

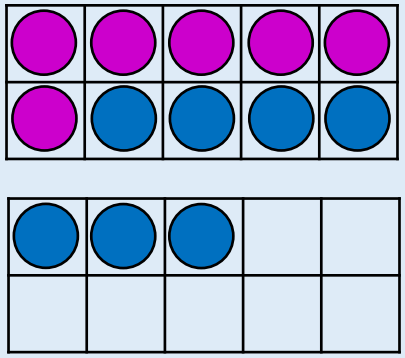
Write a number sentence to describe what has happened on the ten frames. Use the number line to find the answer.



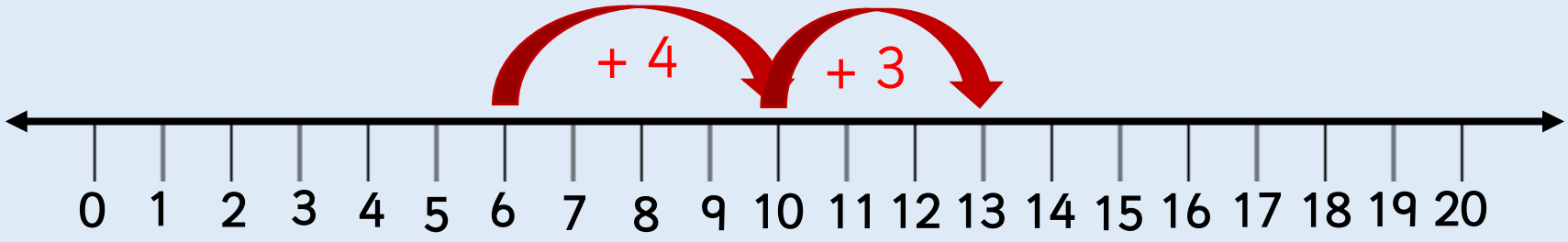


Activity 4 Add by Making 10

Write a number sentence to describe what has happened on the ten frames. Use the number line to find the answer.



$$6 + 7 = 13$$

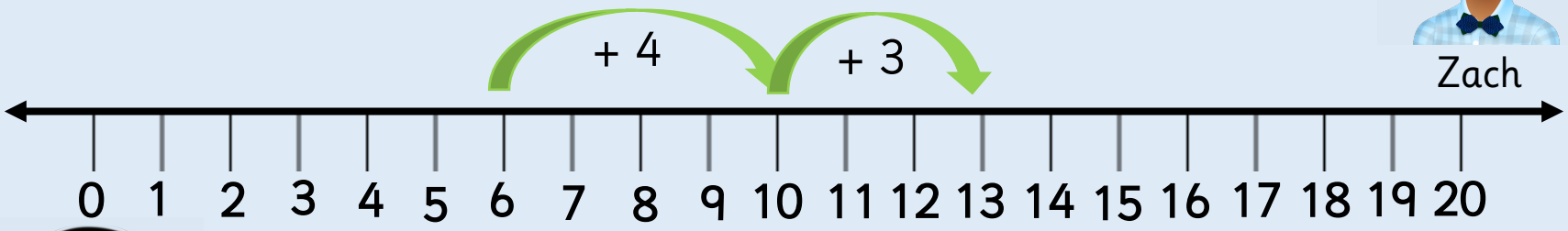


Reasoning - 1 Add by Making 10

Zach and Rosie are adding together 6 and 7 using a number line.

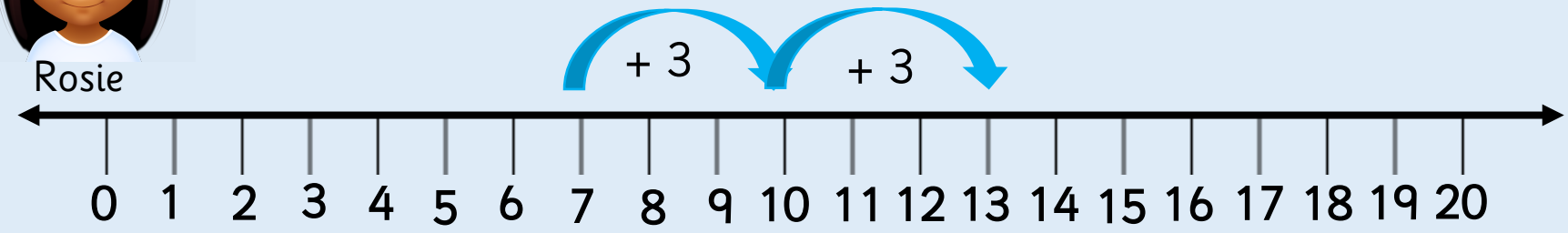
Zach

Zach shows it this way:



Rosie

Rosie shows it this way:



Who is correct? Explain your answer.

Reasoning - 1 Add by Making 10

Zach and Rosie are adding together 6 and 7 using a number line.

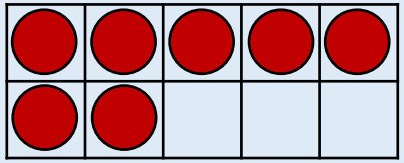
They are both correct because addition is commutative and the answer to both calculations is 13.

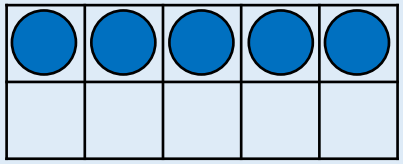
Zach has started with 6 and partitioned 7 into 4 and 3 to make 10. Rosie has started with 7 and partitioned 6 into 3 and 3 to make 10.

Reasoning - 2

Add by Making 10

Esin uses ten frames to calculate seven plus 5





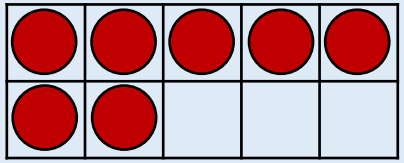
Esin

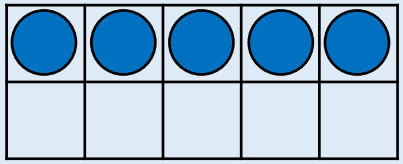
7 + 5 = 15

Do you agree? Explain why.

Reasoning - 2 Add by Making 10

Esin uses ten frames to calculate seven plus 5





Esin

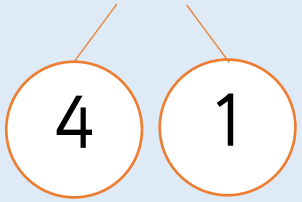
7 + 5 = 15

Esin is wrong because the answer should be 12. She should have filled the first ten frame before starting a second one.

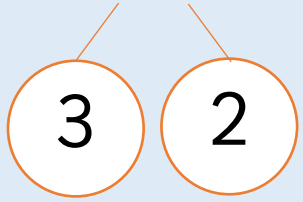
Reasoning - 3 Add by Making 10

Tia is calculating 7 + 5.

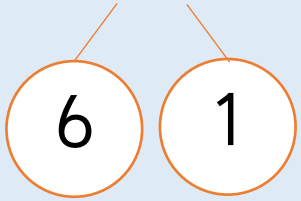
7 + 5



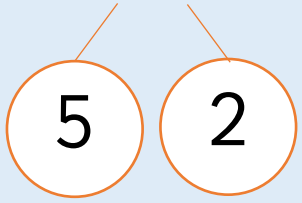
7 + 5



7 + 5



7 + 5



Which of these methods is most helpful? Why?

Reasoning - 3 Add by Making 10

Tia is calculating 7 + 5.

Partitioning the 5 into 3 and 2 is helpful as 7 and 3 make 10.

Partitioning the 7 into 5 and 2 is helpful as 5 and 5 make 10.

Discussion

Add by Making 10

How can you partition a number and
use your number bonds to 10 to help you?

How does using the counters help you to see this strategy?

How does using a number line help you to see this strategy?

Subtraction – Not Crossing 10

1

Fluency & Reasoning Teaching Slides

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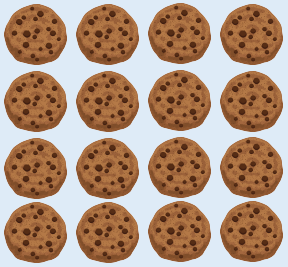
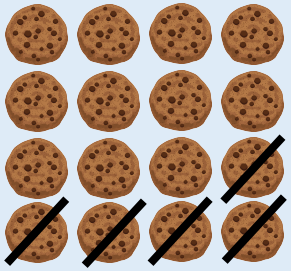
Activity 1 Subtraction – Not Crossing 10

There are 16 biscuits on a plate.
Malachi eats 5 of them. Complete the sentences.

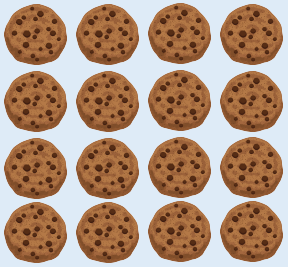
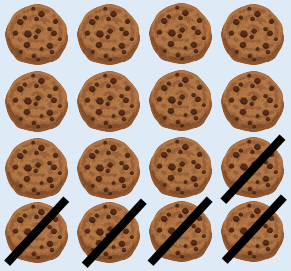
First	Then	Now
		

First there were _____ biscuits.
Then _____ were eaten.
Now there are _____ biscuits.
16 – 5 = _____

If Malachi ate nothing, what number would we use to represent this?

Activity 1 Subtraction – Not Crossing 10

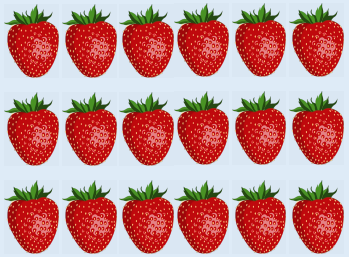
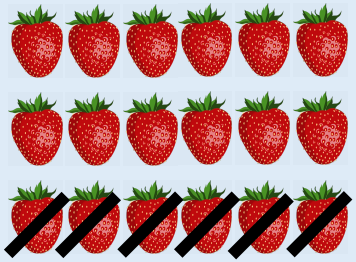
There are 16 biscuits on a plate.
Malachi eats 5 of them. Complete the sentences.

First	Then	Now
		

First there were 16 biscuits.
Then 5 were eaten.
Now there are 11 biscuits.
16 – 5 = 11

Activity 1 Subtraction – Not Crossing 10

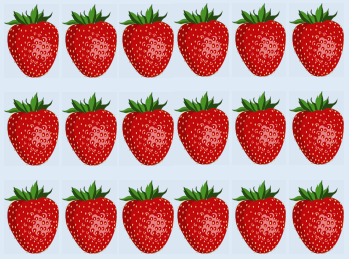
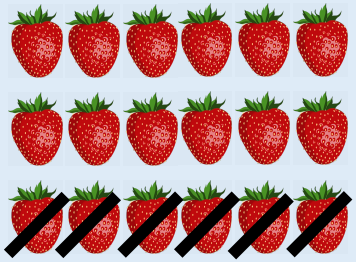
There were 18 strawberries on a plate and Zach ate 6 of them. Complete the sentences.

First	Then	Now
		

First there were ____ strawberries.
Then ____ were eaten.
Now there are ____ strawberries.
18 – 6 = ____

Activity 1 Subtraction – Not Crossing 10

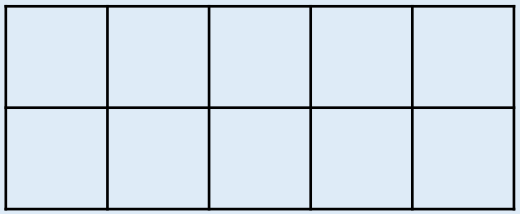
There were 18 strawberries on a plate and Zach ate 6 of them. Complete the sentences.

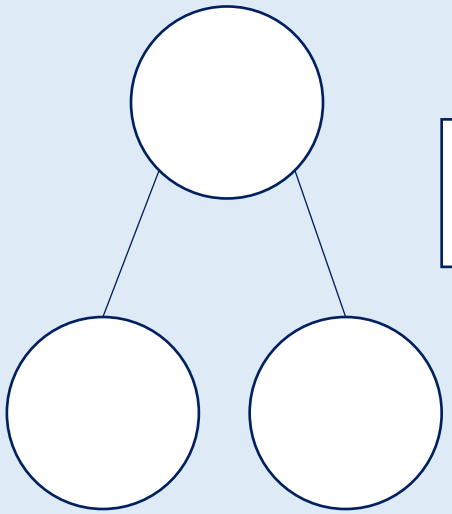
First	Then	Now
		

First there were 18 strawberries.
Then 6 were eaten.
Now there are 12 strawberries.
18 – 6 = 12

Activity 2 Subtraction – Not Crossing 10

First there were 9 sheep. Then they all ran away.
How many sheep are left?
Use ten frames and counters to represent the sheep.



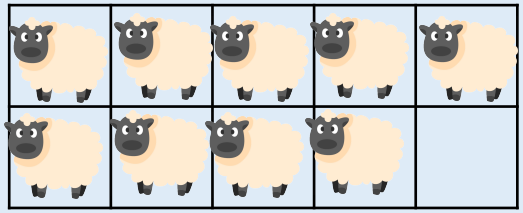


How many objects were there at first?

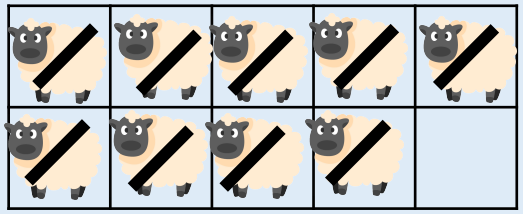
Activity 2 Subtraction – Not Crossing 10

First there were 9 sheep. Then they all ran away.
How many sheep are left?
Use ten frames and counters to represent the sheep.

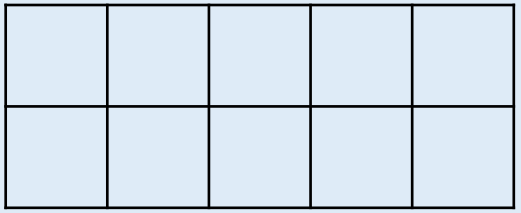
First



Then



Now

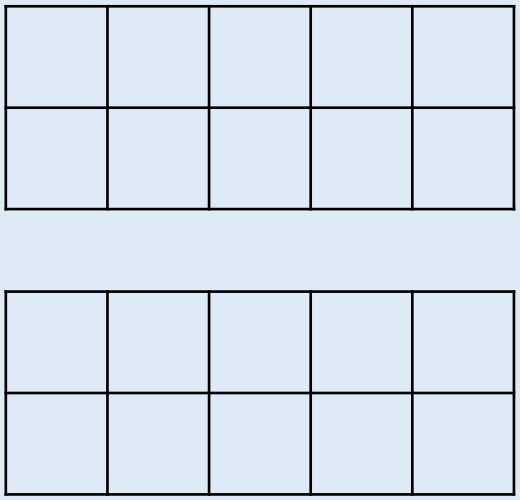


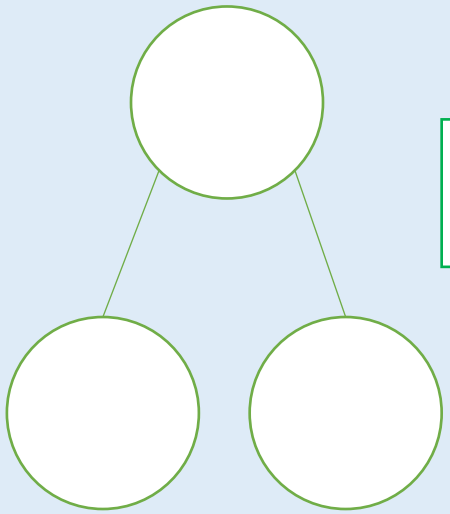
$$9 - 9 = 0$$

Activity 2

Subtraction – Not Crossing 10

First there were 16 birds. Three of them flew away.
How many birds are left?
Use ten frames and counters to represent the birds.



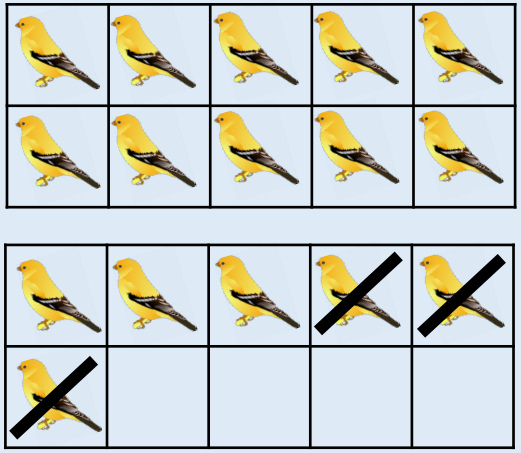


Activity 2 Subtraction – Not Crossing 10

First there were 16 birds. Three of them flew away.
How many birds are left?
Use ten frames and counters to represent the sheep.

First

Then

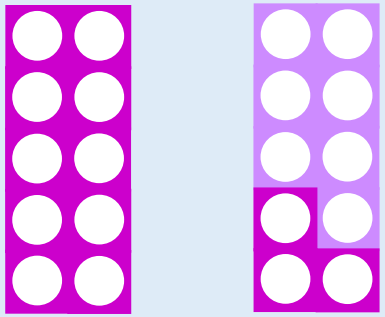


Now

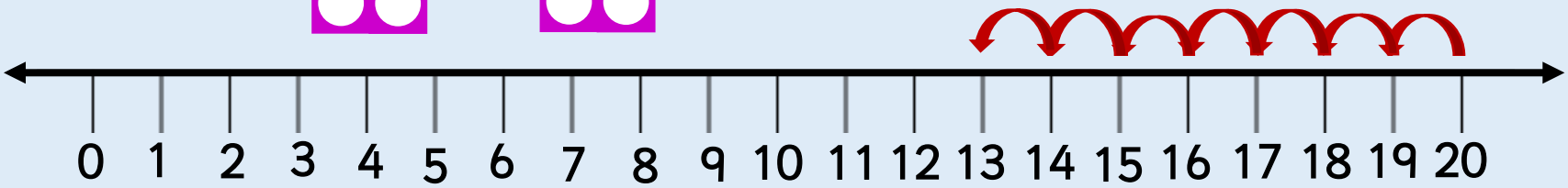
$$16 - 3 = 13$$

Activity 3 Subtraction – Not Crossing 10

Use the number pieces and the number line to complete the number sentences.



20 – 7 = ____



Use this method to calculate:

20 – 8

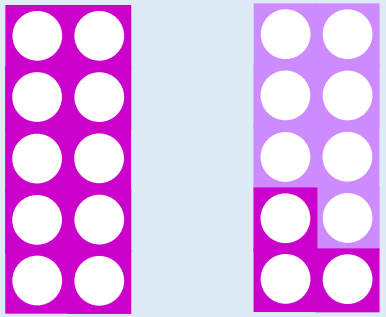
16 – 6

19 – 4

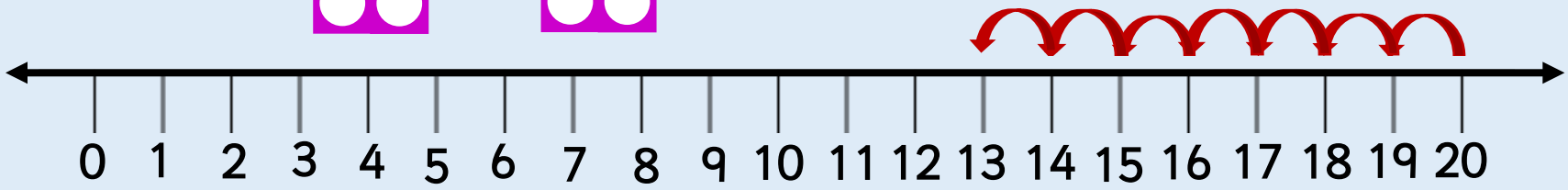
How many objects are there now?

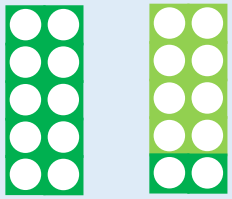
Activity 3 Subtraction – Not Crossing 10

Use the number pieces and the number line to complete the number sentences.

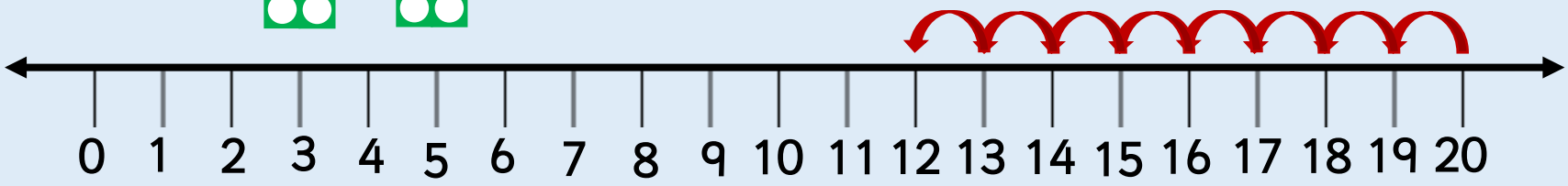


20 – 7 = 13



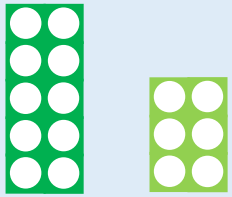


20 – 8 = 12

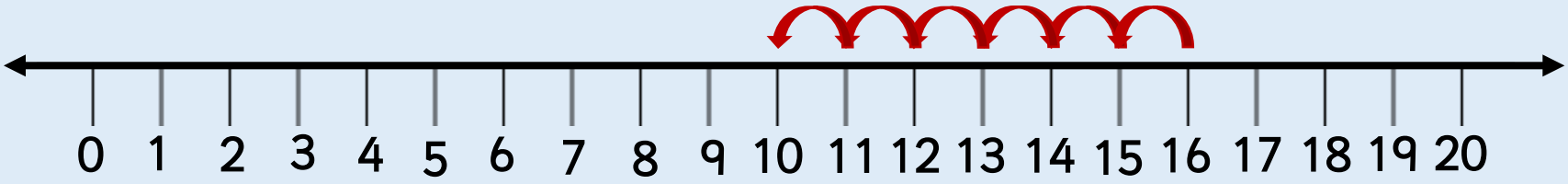


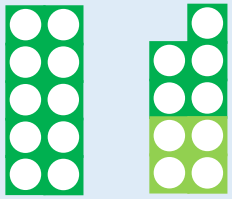
Activity 3 Subtraction – Not Crossing 10

Use the number pieces and the number line to complete the number sentences.

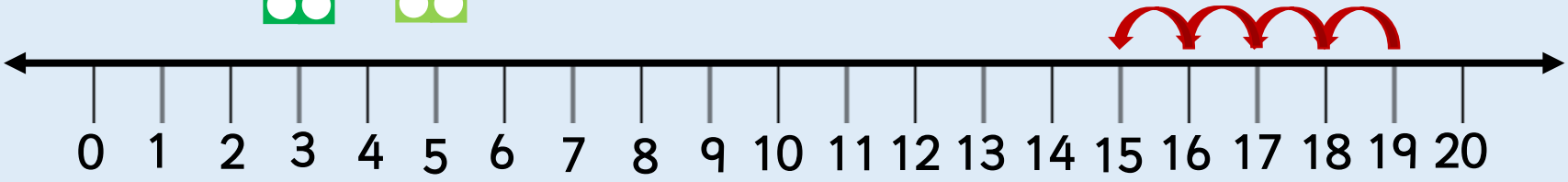


16 – 6 = 10



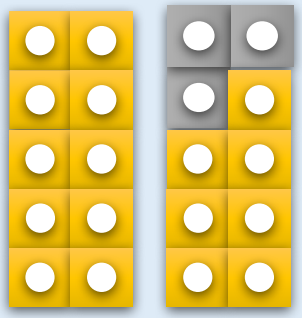


19 – 4 = 15

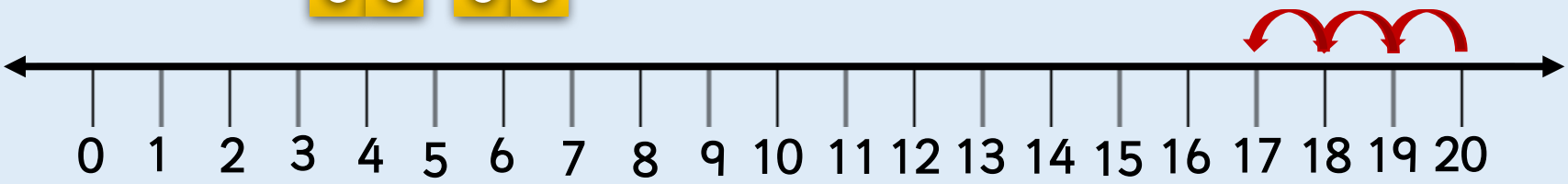


Activity 3 Subtraction – Not Crossing 10

Use the number pieces and the number line to complete the number sentences.



20 – 3 = ____



Use this method to calculate:

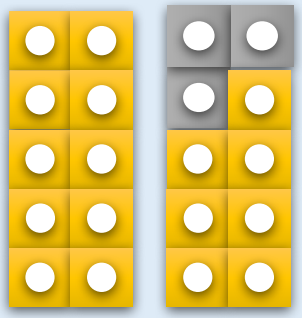
18 – 5

20 – 7

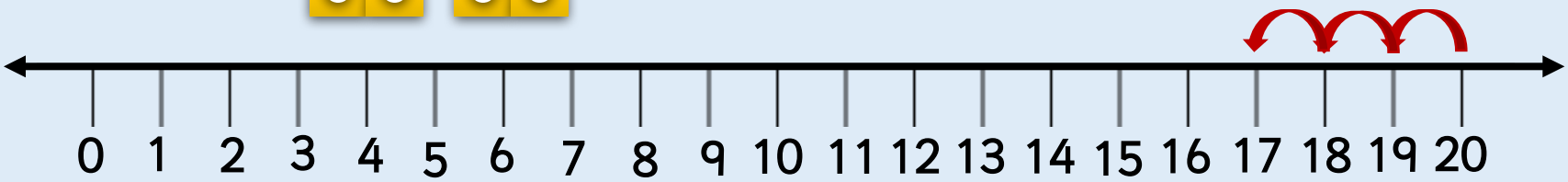
19 – 3

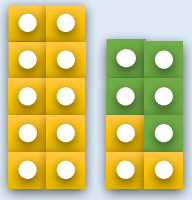
Activity 3 Subtraction – Not Crossing 10

Use the number pieces and the number line to complete the number sentences.

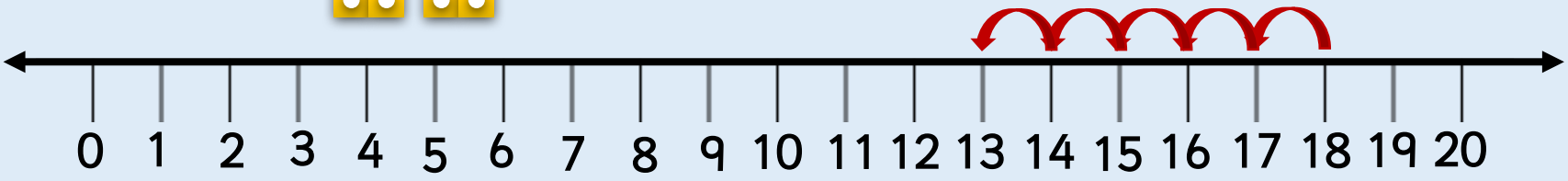


20 – 3 = 17



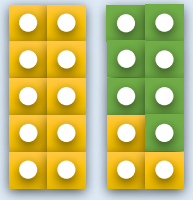


18 – 5 = 13

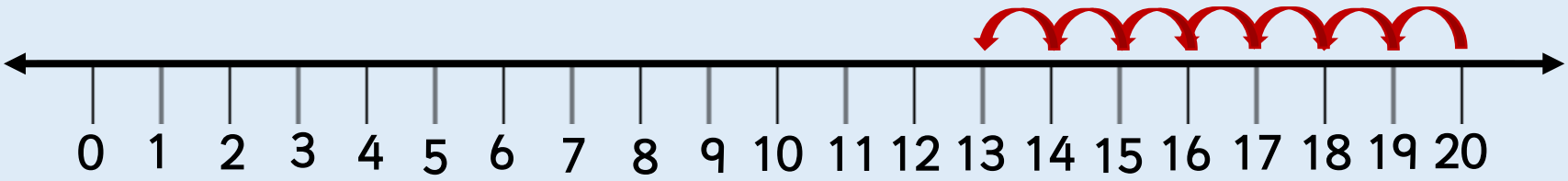


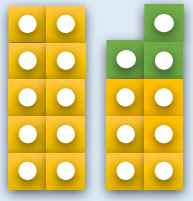
Activity 3 Subtraction – Not Crossing 10

Use the number pieces and the number line to complete the number sentences.

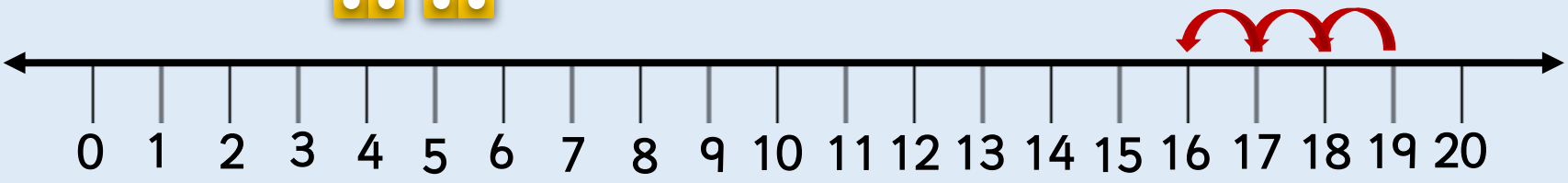


20 – 7 = 13





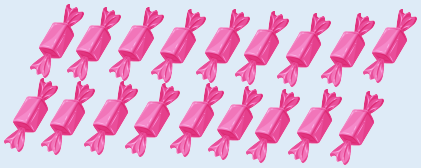
19 – 3 = 16



Reasoning - 1

Subtraction – Not Crossing 10

Tia, Zach and Esin are working out which calculation is represented below.

First	Then	Now
		

Tia

18 – 18 = 0

18 – 0 = 18

Zach

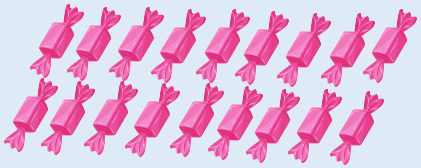
Esin

0 – 18 = 18

Can you work out who is correct? Explain why.

Reasoning - 1 Subtraction – Not Crossing 10

Tia, Zach and Esin are working out which calculation is represented below.

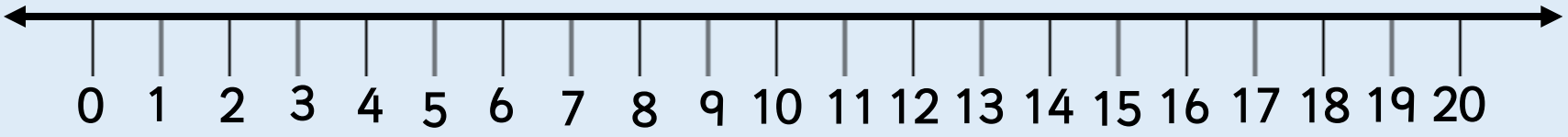
First	Then	Now
		

Possible response:

Zach is correct because first there were 18 sweets and now there are still 18 sweets so zero sweets were eaten.

Reasoning - 2 Subtraction – Not Crossing 10

How many ways can you complete this number sentence?

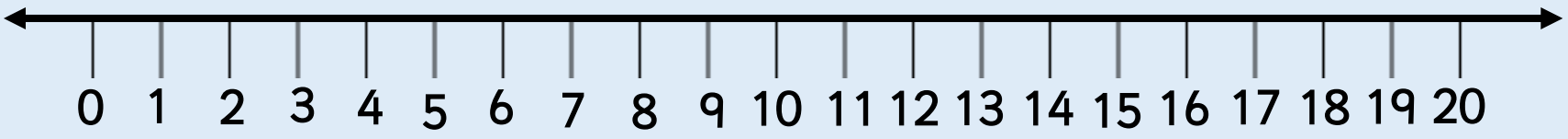


$$\square - \square = 10$$

Use the number line to help you.

Reasoning - 2 Subtraction – Not Crossing 10

How many ways can you complete this number sentence?



20 – 10 = 10
19 – 9 = 10
18 – 8 = 10
17 – 7 = 10
16 – 6 = 10
Etc.

Discussion

Subtraction – Not Crossing 10

How many objects were there at first? Then what happened to the objects? How many objects are there now?

If Malachi ate nothing, what number would we use to represent this? How do we write this as a calculation? What does the zero represent in this calculation?

If Malachi ate all the biscuits, what number would we be left with? How do we write this as a calculation? What does the zero represent in this calculation?

Subtraction – Crossing 10 (1)

1

Fluency & Reasoning Teaching Slides

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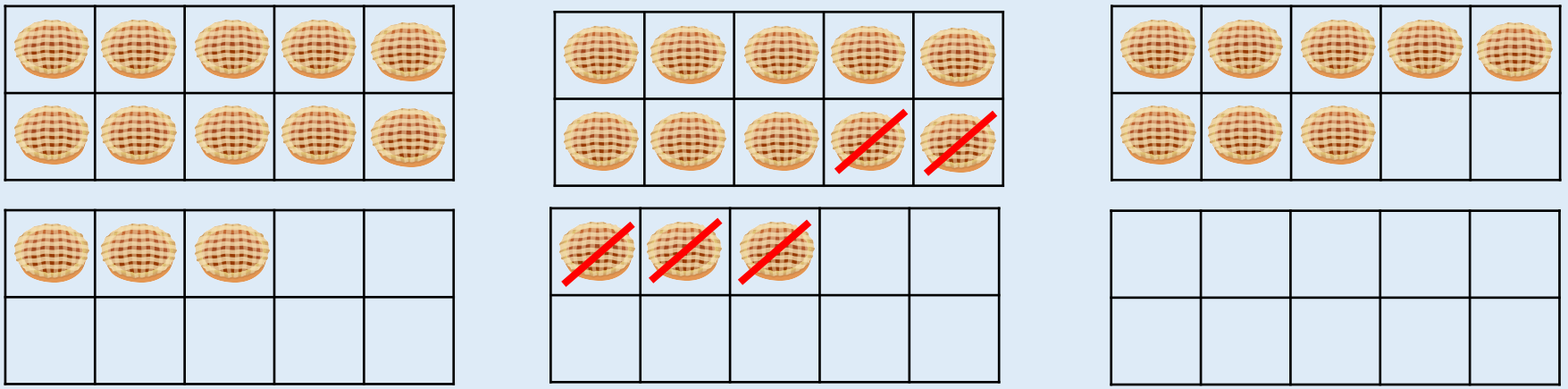
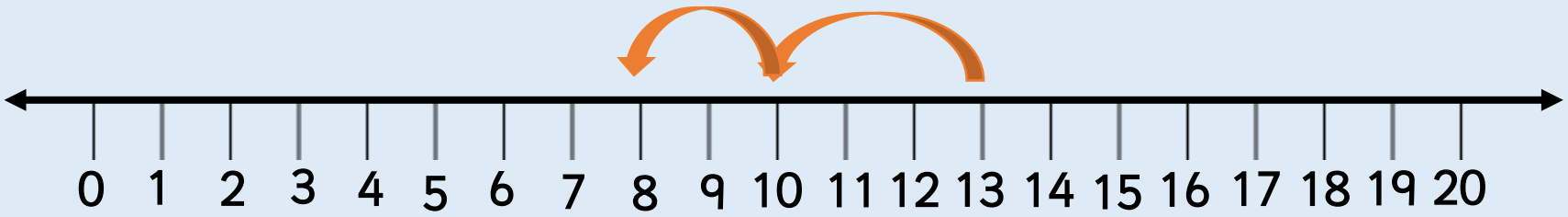
Activity 1

Subtraction – Crossing 10 (1)

First there were 13 jam tarts.
Then 5 were eaten. Now there are 8 jam tarts.



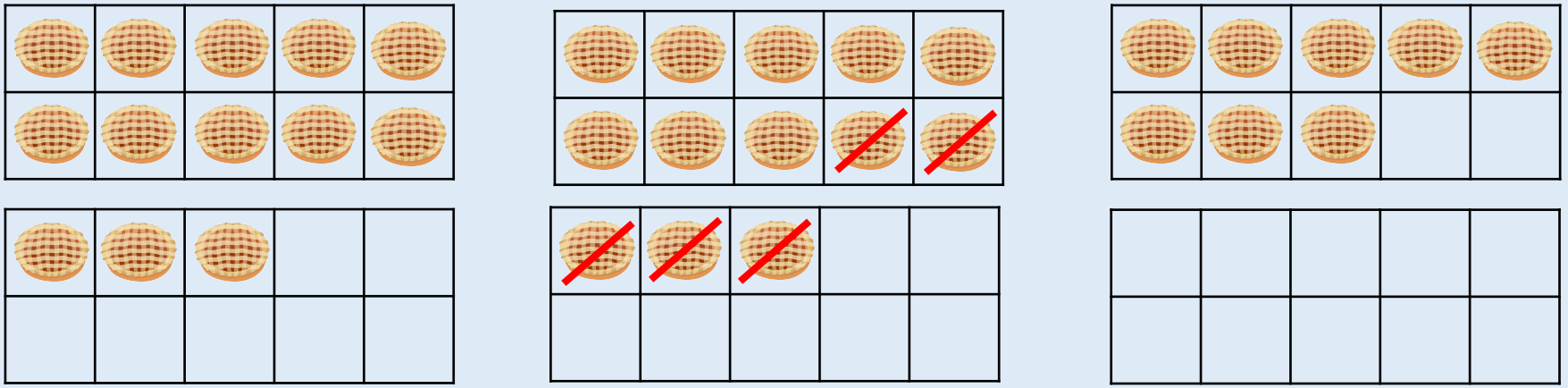


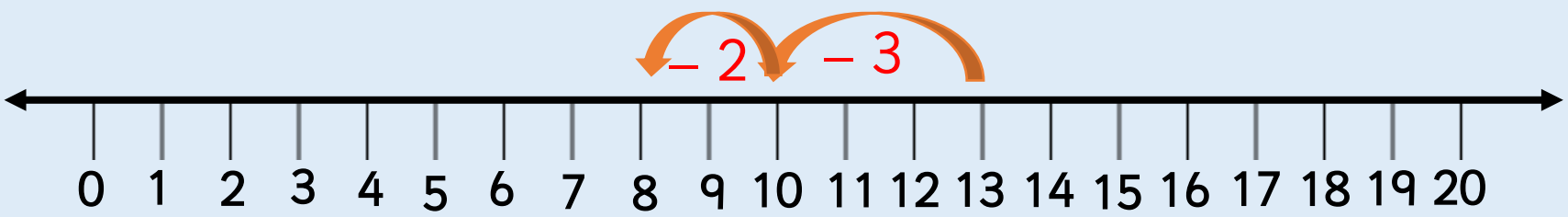
How can you partition a number to help you subtract?

Activity 1

Subtraction – Crossing 10 (1)

First there were 13 jam tarts.
Then 5 were eaten. Now there are 8 jam tarts.



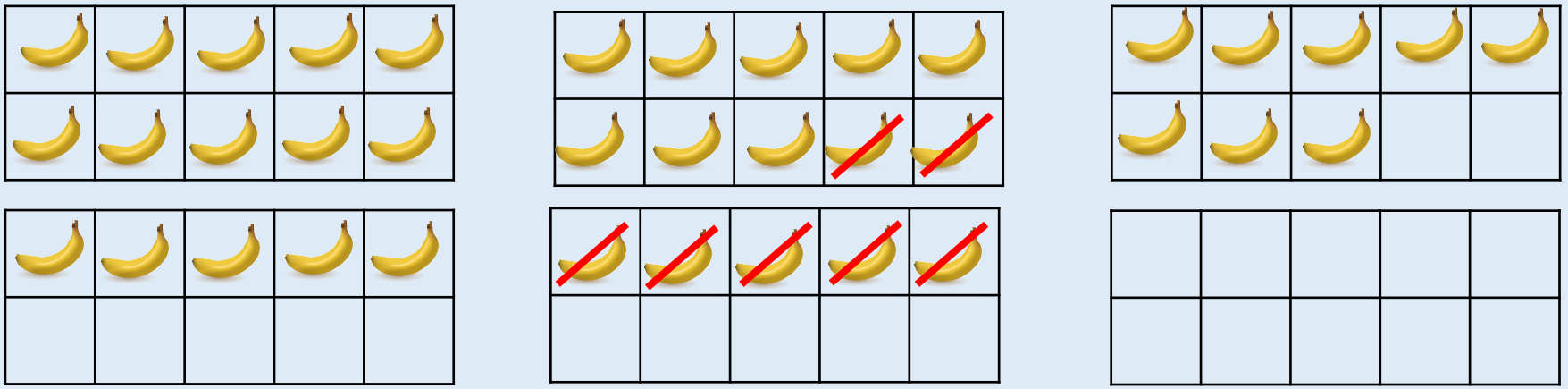


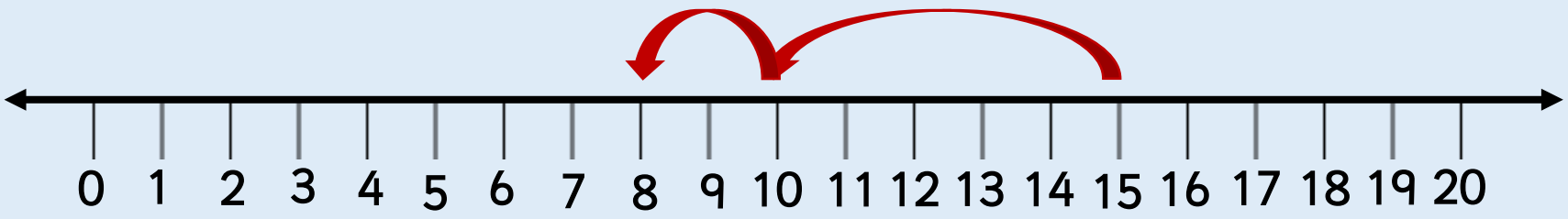
13 – 5 = 8

Activity 1

Subtraction – Crossing 10 (1)

First there were 15 bananas.
Then 7 were eaten. Now there are 8 bananas.

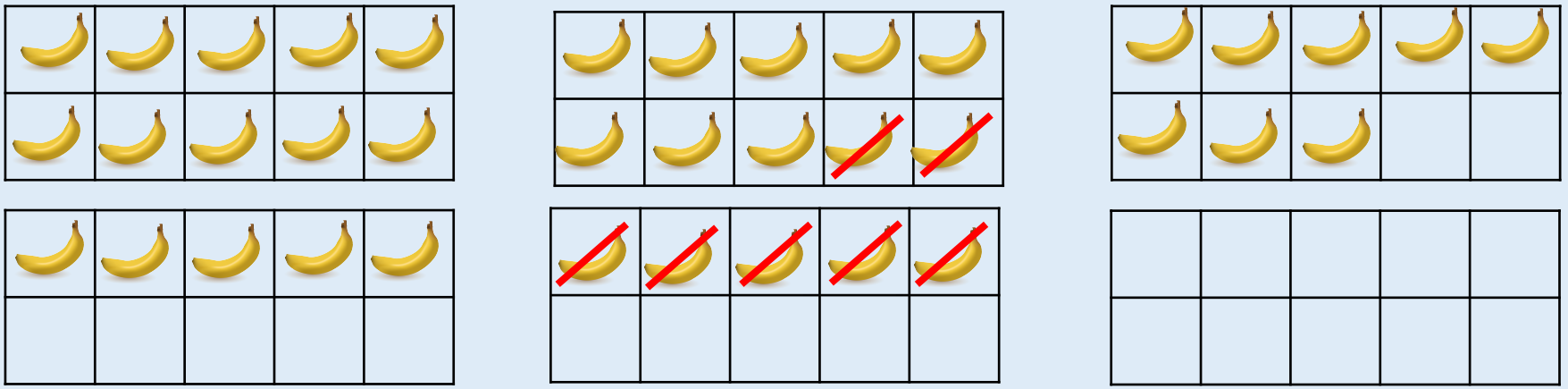


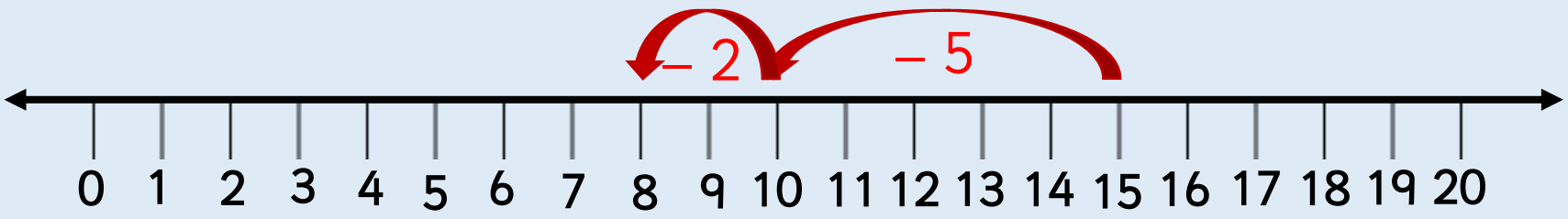


Activity 1

Subtraction – Crossing 10 (1)

First there were 15 bananas.
Then 7 were eaten. Now there are 8 bananas.



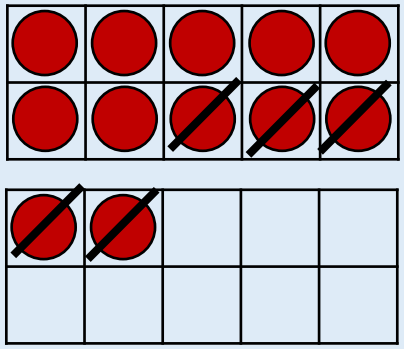


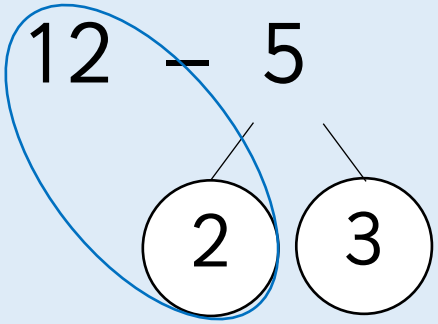
15 – 7 = 8

Activity 2

Subtraction – Crossing 10 (1)

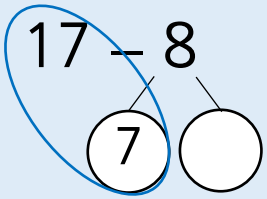
Leanna has used the ten frames to calculate 12 – 5



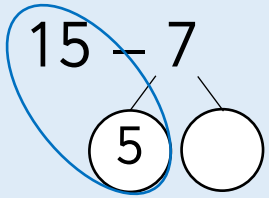


10 – 3 = 7

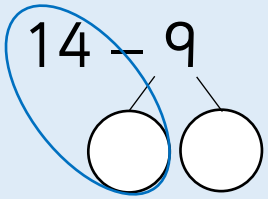
Use her method to complete:



10 – ☐ = ☐



☐ – ☐ = ☐



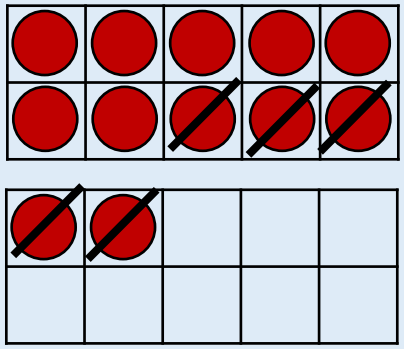
☐ – ☐ = ☐

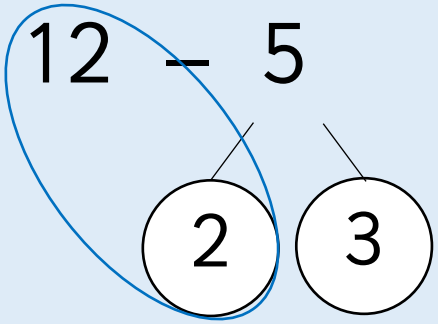
How does using the counters help you to see this strategy?

Activity 2

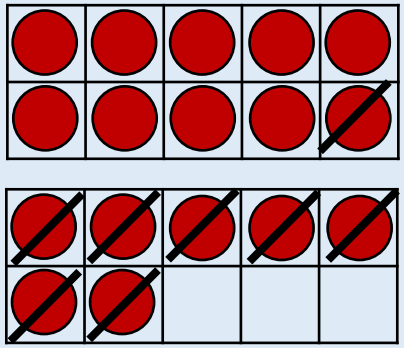
Subtraction – Crossing 10 (1)

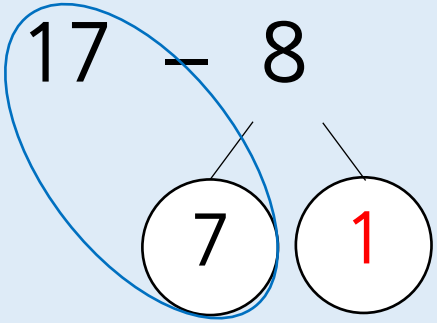
Leanna has used the ten frames to calculate 12 – 5





10 – 3 = 7



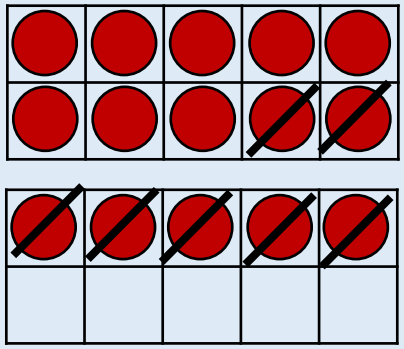


10 – 1 = 9

Activity 2

Subtraction – Crossing 10 (1)

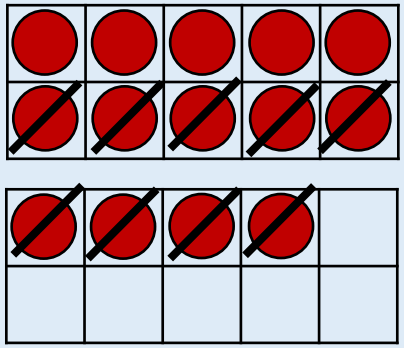
Leanna has used the ten frames to calculate 12 – 5



15 – 7

5 2

10 – 2 = 8



14 – 9

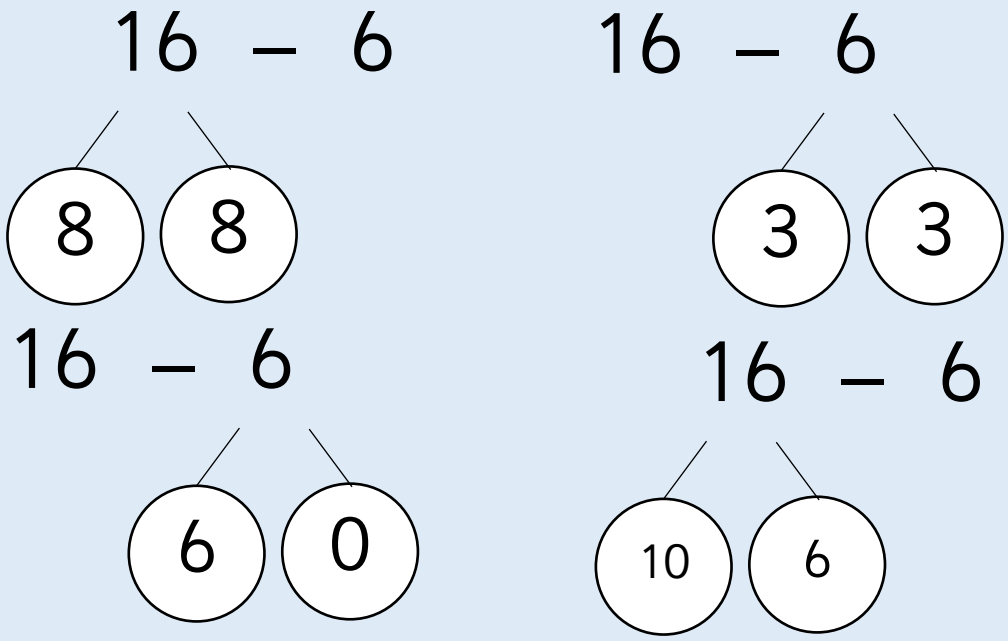
4 5

10 – 5 = 5

Reasoning - 1

Subtraction – Crossing 10 (1)

Leanna is calculating 16 – 6



Which of these methods is most helpful? Why?
Could you find a way to partition 16 to help you subtract 6?

Reasoning - 1

Subtraction – Crossing 10 (1)

Leanna is calculating 16 – 6

Partitioning the 6 into 6 and 0 is useful as Leanna can subtract the 6 to make 10 then subtract the 0.

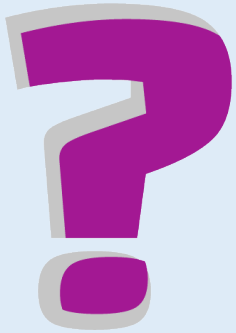
If you partition 16 into 6 and 10, you can subtract 6.

Reasoning - 2

Subtraction – Crossing 10 (1)

Zach works out 14 – 5

$$14 - 4 = 10 - 1 = 9$$



Why is Zach's working out wrong?

Reasoning - 2 Subtraction – Crossing 10 (1)

Zach works out 14 – 5

$$14 - 4 = 10 - 1 = 9$$

Zach has used the = sign incorrectly.
10 – 1 is not equal to 14 – 4. He should have written:

$$14 - 4 = 10$$
$$10 - 1 = 9$$

Reasoning - 3

Subtraction – Crossing 10 (1)

Use <, > or = to make the statements correct.

Rosie

I can do this without working out any answers.

16 – 4 ◯ 11 – 4

13 – 3 ◯ 17 – 7

11 – 6 ◯ 11 – 5

Is Rosie correct? Explain how you know

Reasoning - 3

Subtraction – Crossing 10 (1)

Use <, > or = to make the statements correct.

Rosie

I can do this without working out any answers.

16 – 4 **>** 11 – 4

13 – 3 **=** 17 – 7

11 – 6 **<** 11 – 5

Discussion

Subtraction – Crossing 10 (1)

How can you partition a number to help you subtract?

How does using the counters help you to see this strategy?

How does using a number line help you to see this strategy?

Can you think of another way to represent this problem?

Subtraction – Crossing 10 (2)

1

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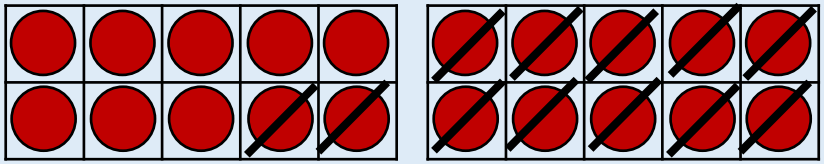
Activity 1 Subtraction – Crossing 10 (2)

Complete the number sentences to describe what happens to the sweets.



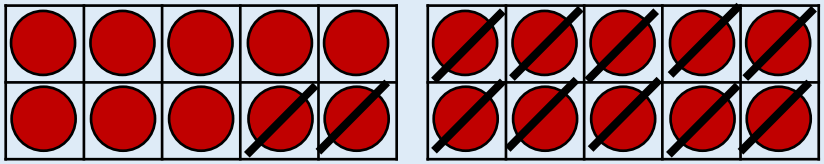
First there were ____ sweets.
Then ___ sweets were eaten.
Now there are ____ sweets.

$\square - \square = \square$

How do the counters and bar models help you subtract?

Activity 1 Subtraction – Crossing 10 (2)

Complete the number sentences to describe what happens to the sweets.



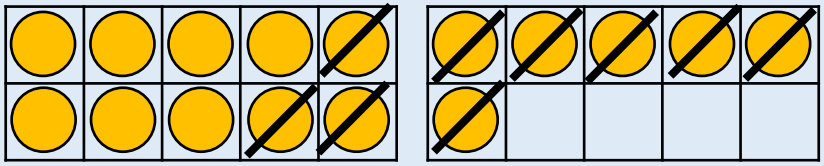
First there were 20 sweets.
Then 12 sweets were eaten.
Now there are 8 sweets.

20 – 12 = 8

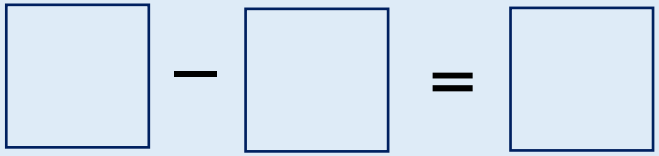
Activity 1

Subtraction – Crossing 10 (2)

Complete the number sentences to describe what happens to the sweets.

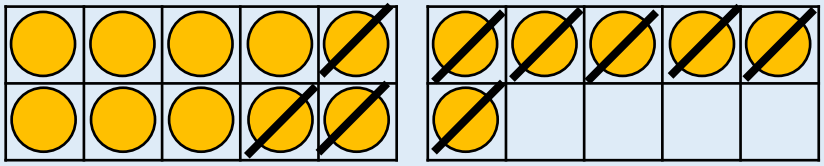


First there were ____ biscuits.
Then ___ biscuits were eaten.
Now there are ____ biscuits.



Activity 1 Subtraction – Crossing 10 (2)

Complete the number sentences to describe what happens to the sweets.



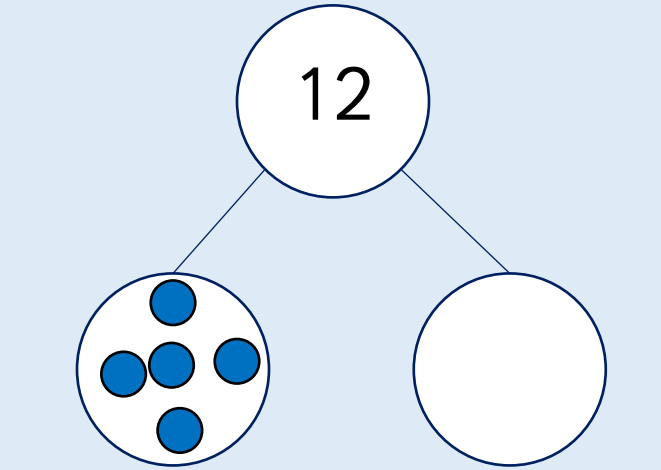
First there were 16 biscuits.
Then 9 biscuits were eaten.
Now there are 7 biscuits.

16 − 9 = 7

Activity 2

Subtraction – Crossing 10 (2)

There are 12 cars in the car park.
5 of them are blue. How many are red?



□ – □ = □

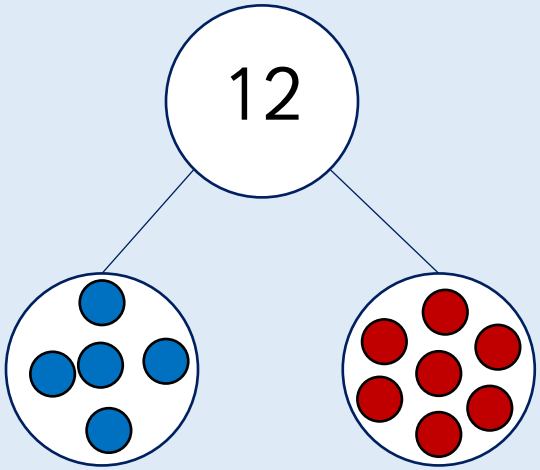
____ of the cars are red.

Which method would you use to show your thinking and why?

Activity 2

Subtraction – Crossing 10 (2)

There are 12 cars in the car park.
5 of them are blue. How many are red?



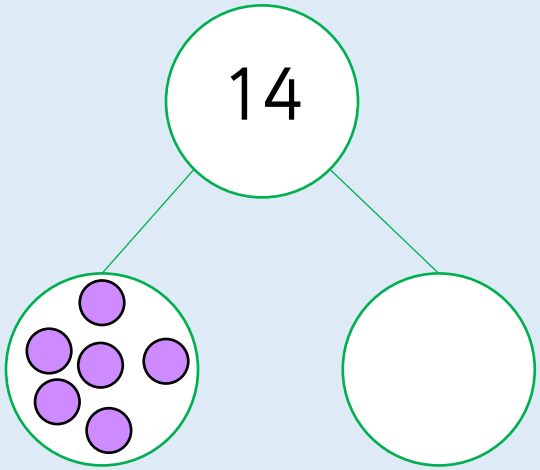
12 – 5 = 7

7 of the cars are red.

Activity 2

Subtraction – Crossing 10 (2)

There are 14 pink and purple flowers in a vase. 6 of them are purple. How many are pink?



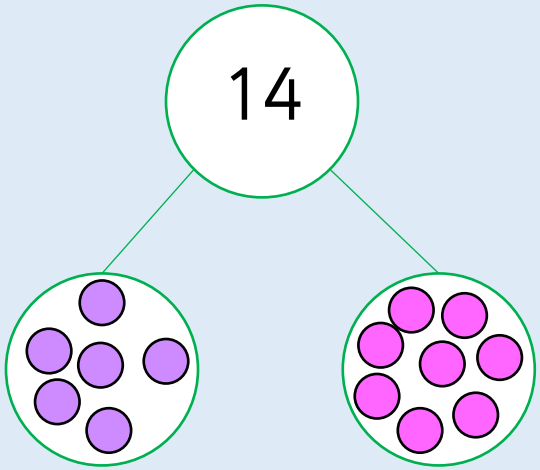
□ − □ = □

____ of the flowers are pink.

Activity 2

Subtraction – Crossing 10 (2)

There are 14 pink and purple flowers in a vase. 6 of them are purple. How many are pink?



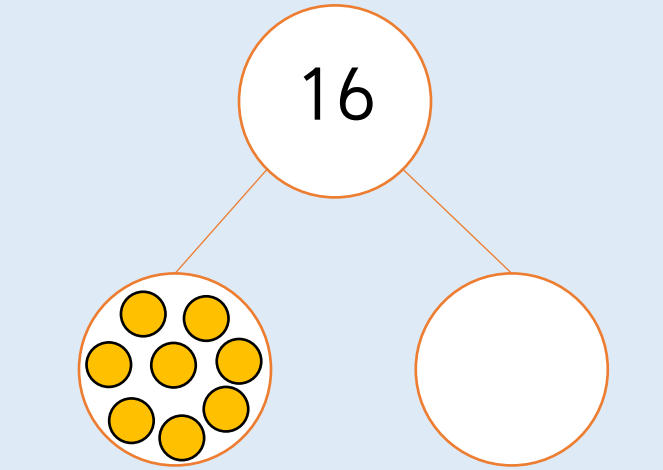
14 − 6 = 8

8 of the flowers are pink.

Activity 2

Subtraction – Crossing 10 (2)

There are 16 red and yellow bricks in the toy box.
8 of them are yellow. How many are red?



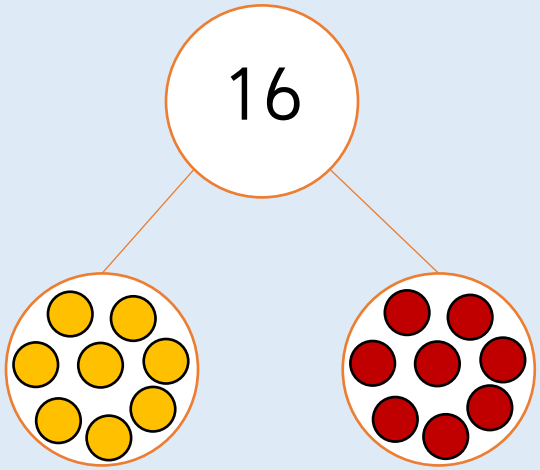
□ – □ = □

____ of the bricks are red.

Activity 2

Subtraction – Crossing 10 (2)

There are 16 red and yellow bricks in the toy box.
8 of them are yellow. How many are red?



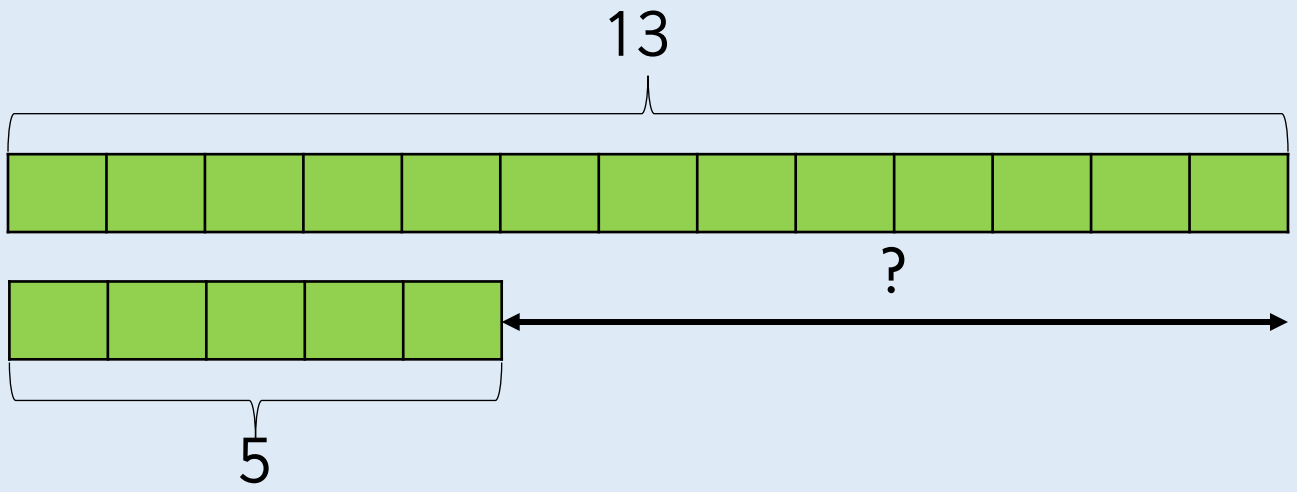
16 – 8 = 8

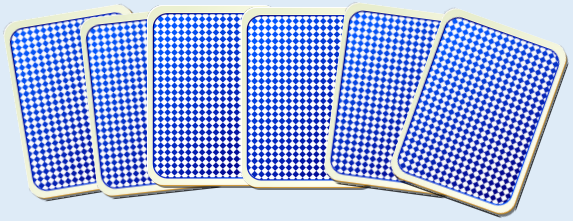
8 of the bricks are red.

Activity 3

Subtraction – Crossing 10 (2)

Zach has 13 playing cards. Malachi has 5 playing cards. How many more cards does Zach have?



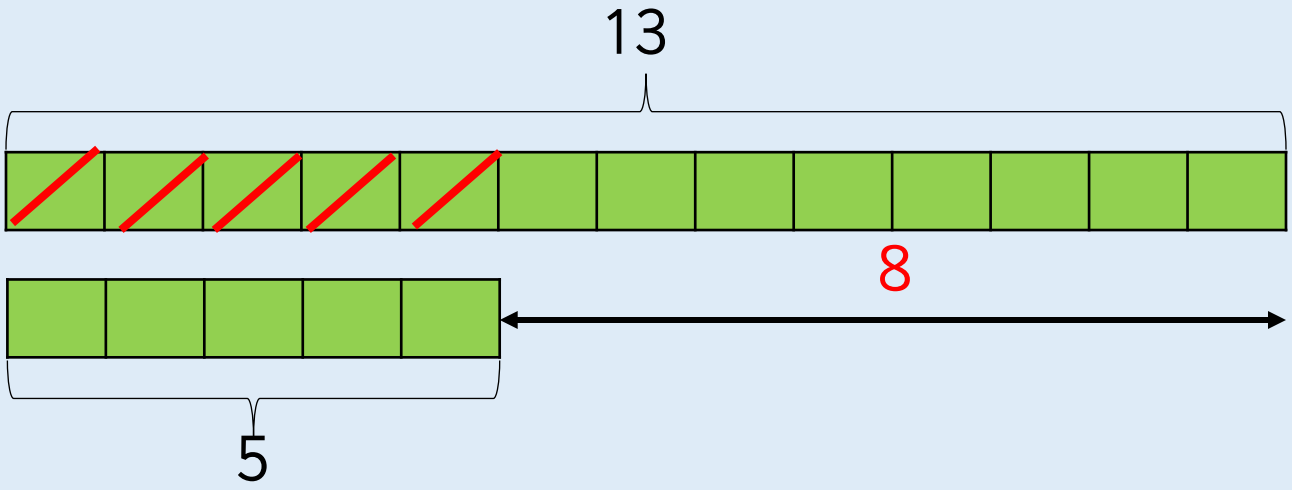


Did you count forwards or backwards? Why?

Activity 3

Subtraction – Crossing 10 (2)

Zach has 13 playing cards. Malachi has 5 playing cards. How many more cards does Zach have?



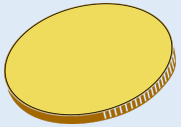
13 – 5 = 8

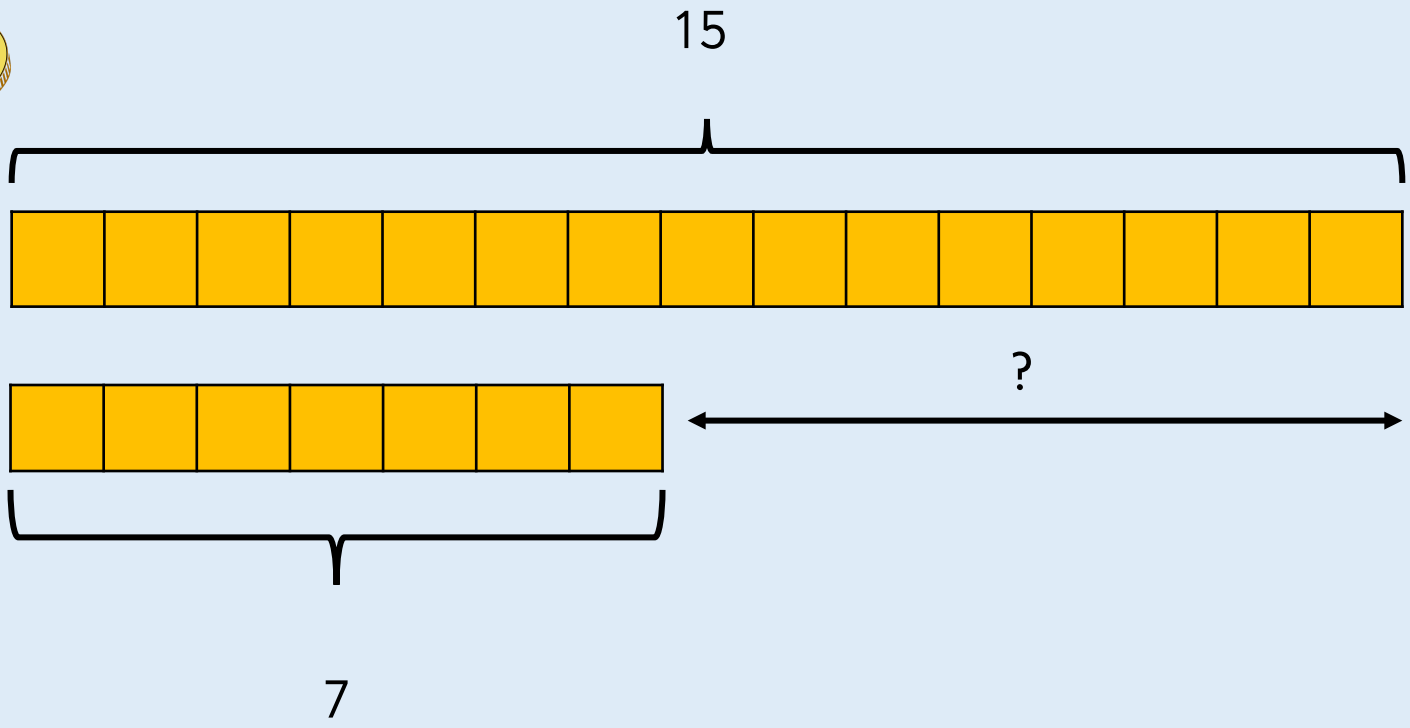
Zach has 8 more playing cards.

Activity 3

Subtraction – Crossing 10 (2)

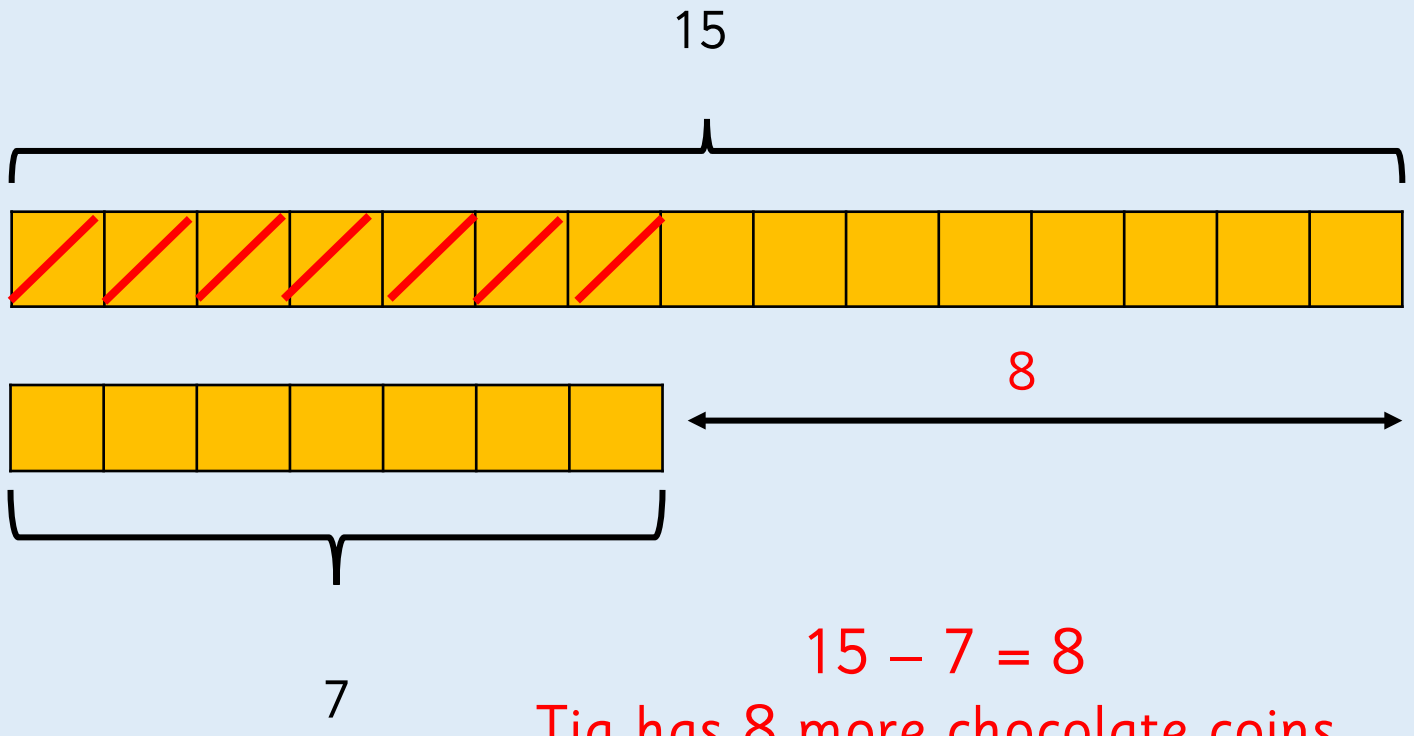
Tia has 15 chocolate coins. Esin has 7 chocolate coins. How many more does Tia have?





Activity 3 Subtraction – Crossing 10 (2)

Tia has 15 chocolate coins. Esin has 7 chocolate coins. How many more does Tia have?



15 – 7 = 8

Tia has 8 more chocolate coins.

Reasoning - 1

Subtraction – Crossing 10 (2)

A

Malachi has 13 balloons. 5 of the balloons burst. How many are left?

B

Malachi has 13 balloons. 5 of the balloons are blue. The rest are yellow. How many yellow balloons does Malachi have?

C

Malachi has 13 red balloons and 5 yellow balloons. How many more red balloons does he have?

Reasoning - 1

Subtraction – Crossing 10 (2)

A

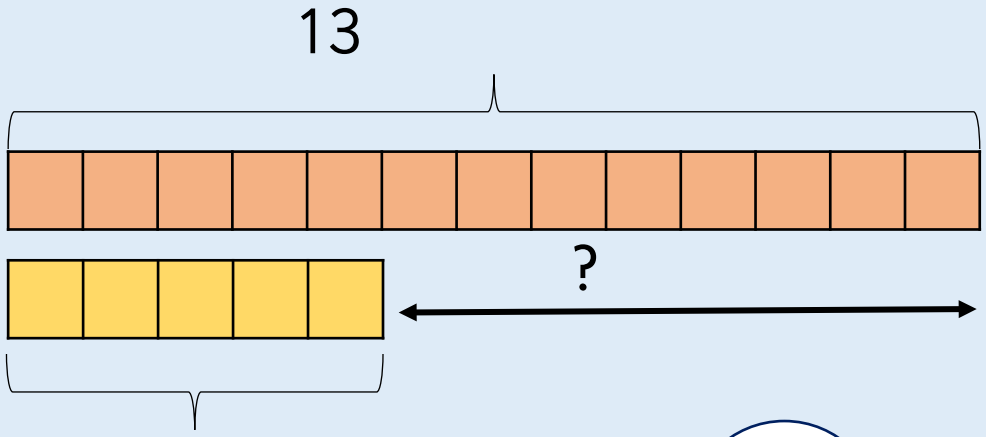
Malachi has 13 balloons.
5 of the balloons burst.
How many are left?

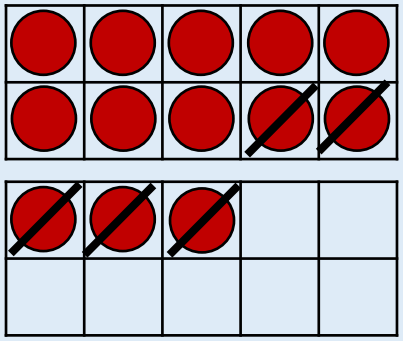
B

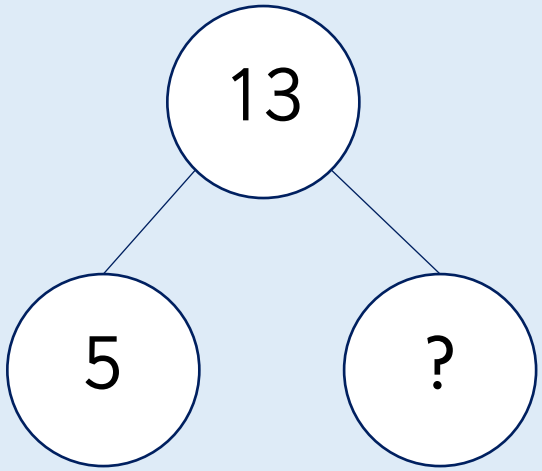
Malachi has 13 balloons.
5 of the balloons are blue.
The rest are yellow.
How many yellow balloons does Malachi have?

C

Malachi has 13 red balloons and 5 yellow balloons.
How many more red balloons does he have?





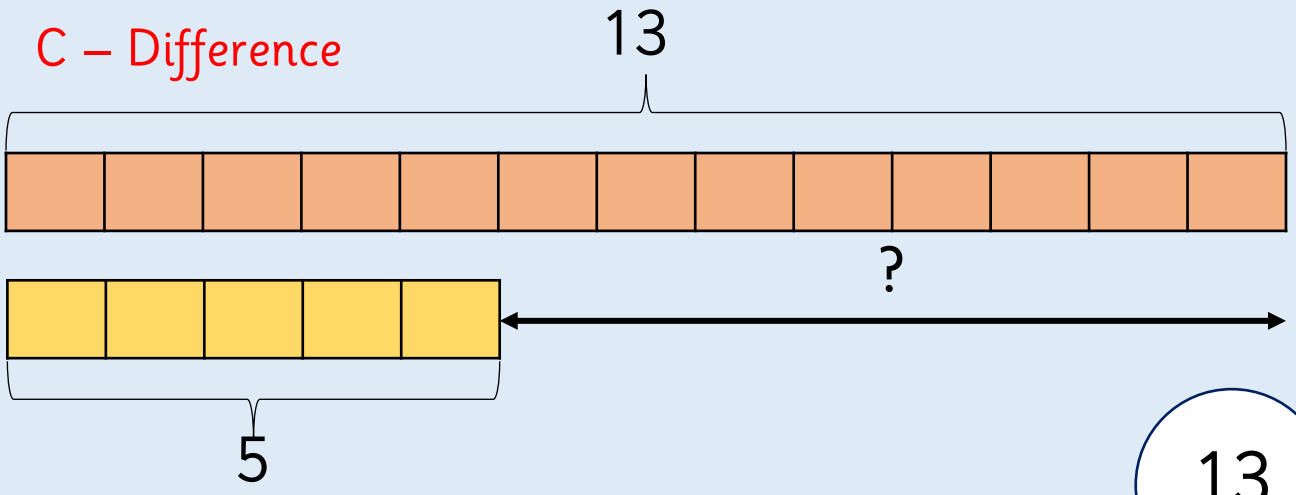


Which method would you use to solve each problem?

Reasoning - 1

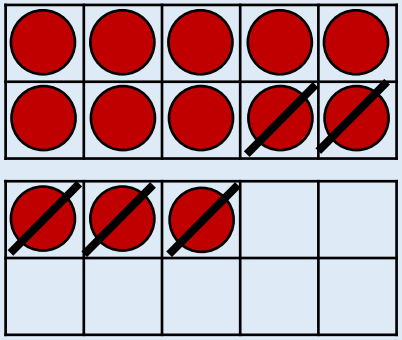
Subtraction – Crossing 10 (2)

C – Difference



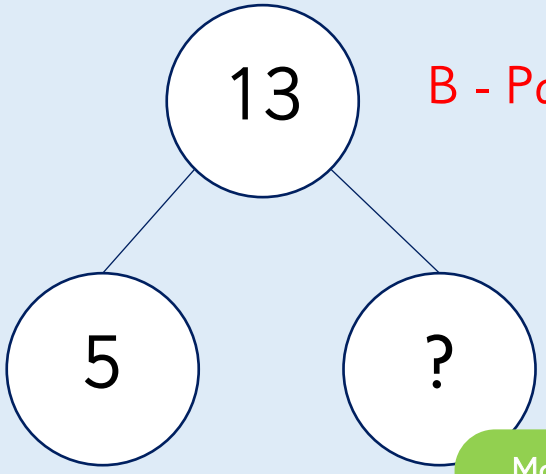
Malachi has 13 red balloons and 5 yellow balloons. How many more red balloons does he have?

A – Take away



Malachi has 13 balloons. 5 of the balloons burst. How many are left?

B - Partitioning



Malachi has 13 balloons. 5 of the balloons are blue. The rest are yellow. How many yellow balloons does Malachi have?

Ask the children to justify which method they would use and why.

Reasoning - 2

Subtraction – Crossing 10 (2)

Zach has 15 apples. Tia has none.
Zach gives Tia 8 apples.

Who has the most apples now?
Explain how you know.

Reasoning - 2

Subtraction – Crossing 10 (2)

Zach has 15 apples. Tia has none.
Zach gives Tia 8 apples.

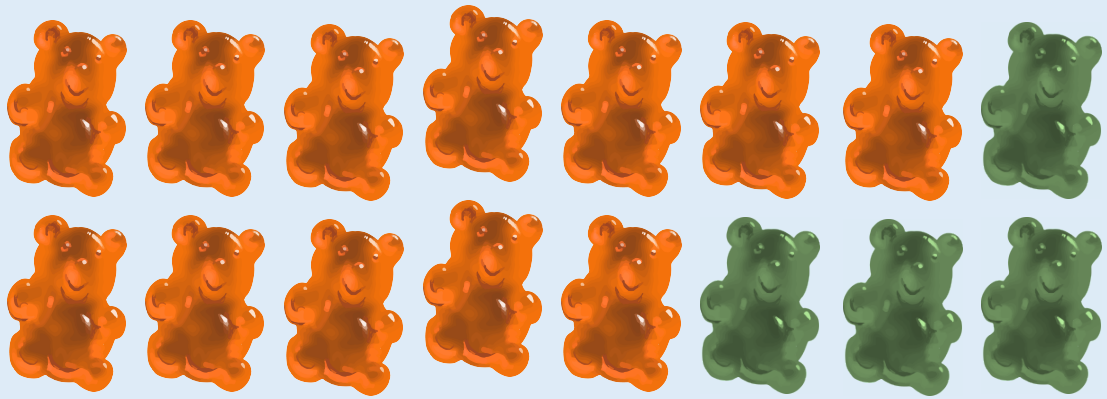
Tia because she has 8 and Zach only has 7 left.
15 – 8 = 7

Who has the most apples now?
Explain how you know.

Reasoning - 3

Subtraction – Crossing 10 (2)

Look at the following objects.



Malachi works out these calculations.

16 – 4 = ___

16 – 12 = ___

12 – 4 = ___

What question could he have asked each time?

Reasoning - 3

Subtraction – Crossing 10 (2)

Look at the following objects.

16 – 4 = 12

(Malachi has 16 bears. He eats 4. How many are left?)

16 – 12 = 4

(12 are orange. How many are green?)

12 – 4 = 8

(How many more orange bears are there?)

Discussion

Subtraction – Crossing 10 (2)

How do the counters and bar models help you to subtract?

Which method would you use to show your thinking and why?

Did you count forwards or backwards? Why?

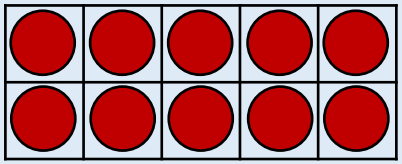
Related Facts

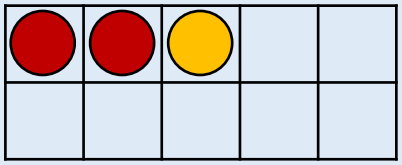
1

Fluency & Reasoning Teaching Slides

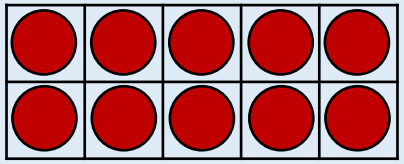
Activity 1 Related Facts

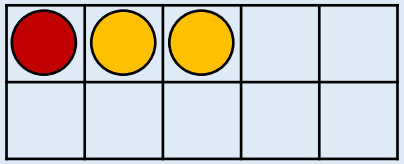
Complete the addition sentences.



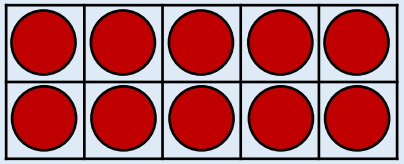


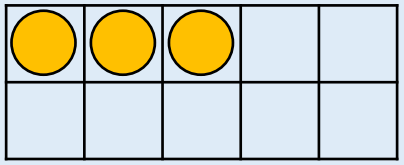
12 + 1 = 13





11 + ___ = 13





___ + ___ = ___

Can you write a subtraction sentence for each?

13 – 1 = 12

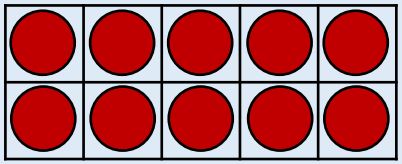
13 – ___ = ___

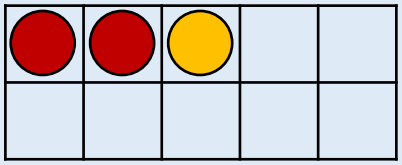
___ – ___ = ___

If we know 12 + 1 = 13, what else do we know?

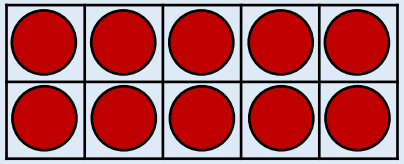
Activity 1 Related Facts

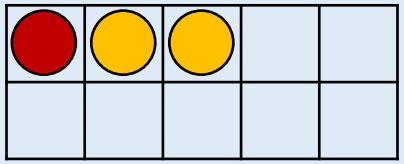
Complete the addition sentences.



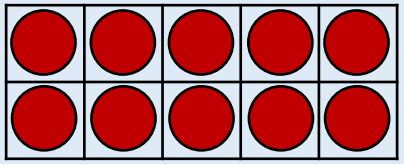


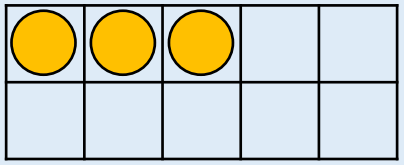
12 + 1 = 13





11 + 2 = 13





10 + 3 = 13

Can you write a subtraction sentence for each?

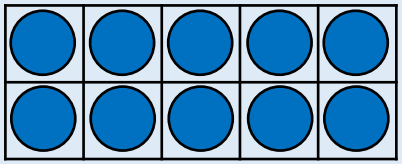
13 – 1 = 12

13 – 2 = 11

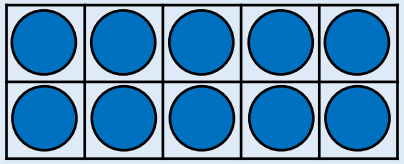
13 – 3 = 10

Activity 1 Related Facts

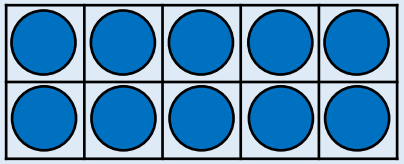
Complete the addition sentences.



13 + 1 = 14



12 + ___ = 14



11 + ___ = 14

Can you write a subtraction sentence for each?

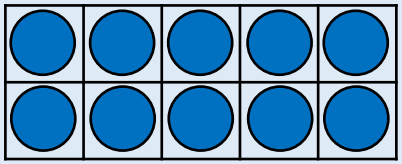
14 – ___ = ___

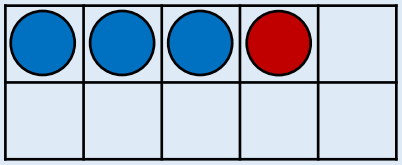
14 – ___ = ___

14 – ___ = ___

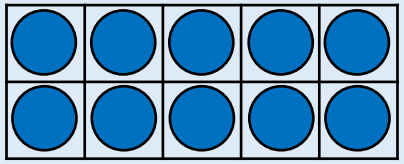
Activity 1 Related Facts

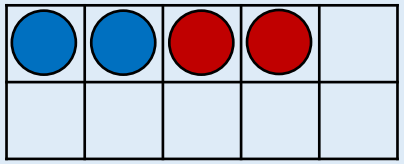
Complete the addition sentences.



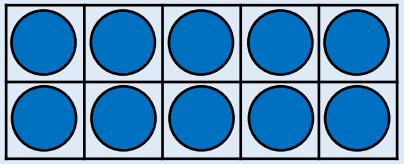


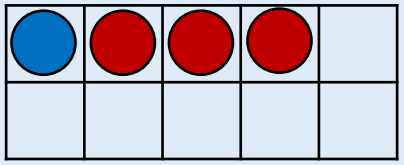
13 + 1 = 14





12 + 2 = 14





11 + 3 = 14

Can you write a subtraction sentence for each?

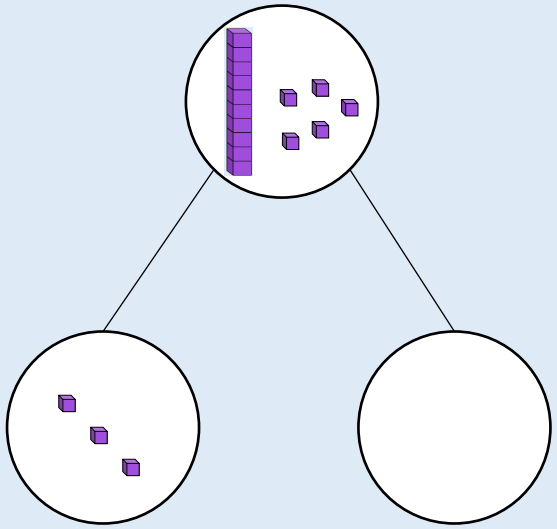
14 – 1 = 13

14 – 2 = 12

14 – 3 = 11

Activity 2 Related Facts

Complete:



15 – ___ = 3

15 – 3 = ___

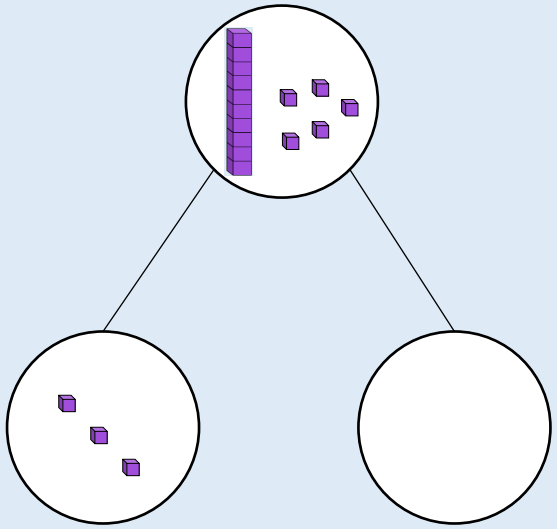
3 + ___ = 15

___ + 3 = 15

If we know 15 – 3 = 12, why can't we say 3 – 15 = 12?

Activity 2 Related Facts

Complete:



15 – 12 = 3

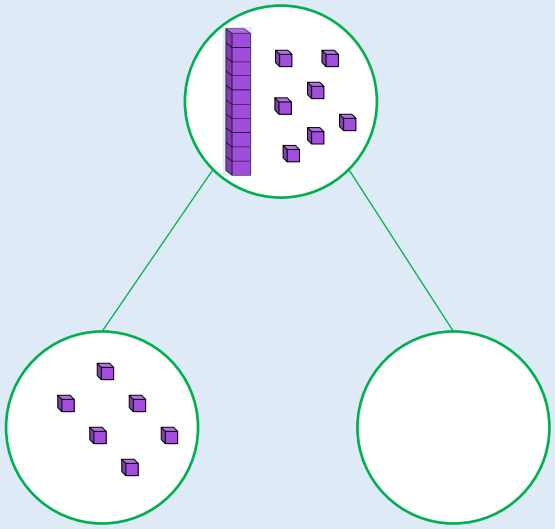
15 – 3 = 12

3 + 12 = 15

12 + 3 = 15

Activity 2 Related Facts

Complete:



17 subtract ___ equals 6

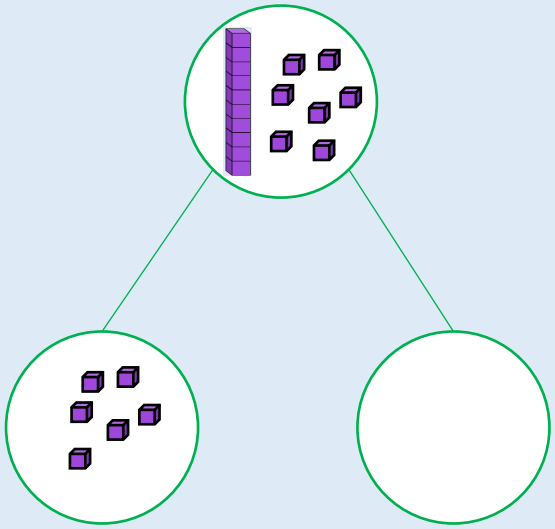
17 – 6 = ___

6 add ___ equals 17

___ + 6 = 17

Activity 2 Related Facts

Complete:



17 subtract 11 equals 6

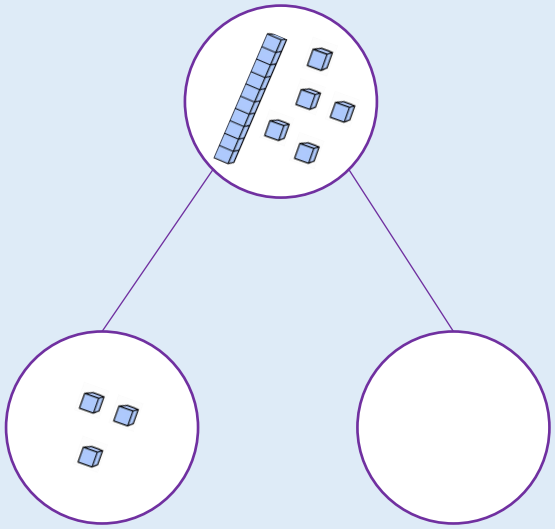
17 – 6 = 11

6 add 11 equals 17

11 + 6 = 17

Activity 2 Related Facts

Complete:



15 subtract ___ equals 3

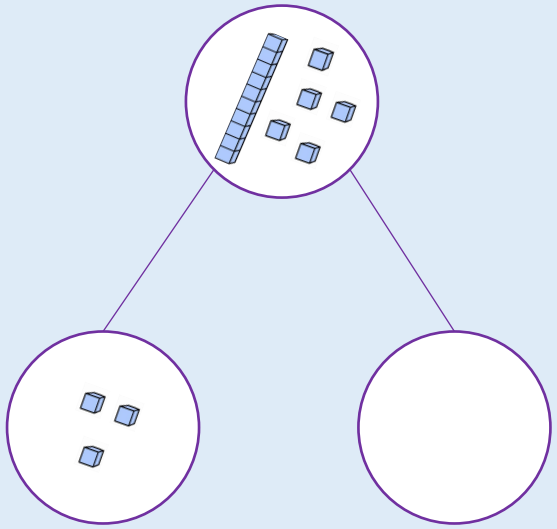
15 – 3 = ___

3 add ___ equals 15

___ + 3 = 15

Activity 2 Related Facts

Complete:



15 subtract 12 equals 3

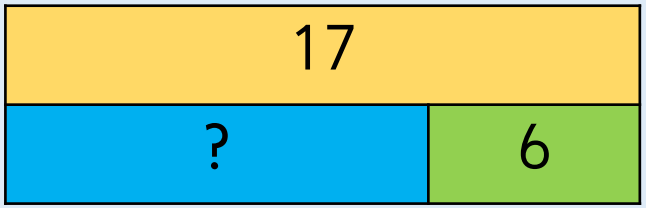
15 – 3 = 12

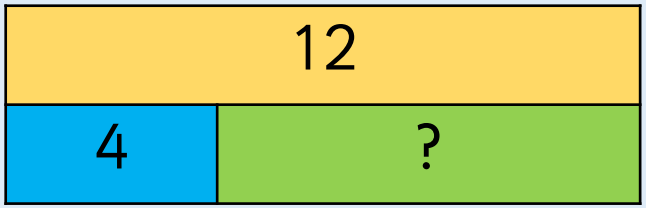
3 add 12 equals 15

12 + 3 = 15

Activity 3 Related Facts

Complete and write addition and subtraction sentences for each bar model.



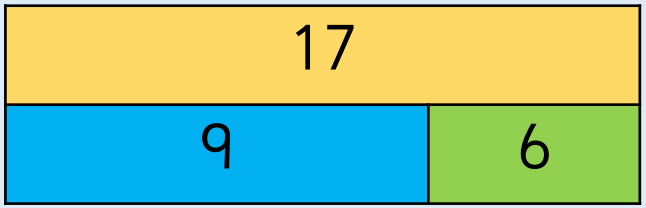


Can you use the numbers 8, 7 and 15 to make a bar model?
Can you write addition and subtraction sentences for this bar model?

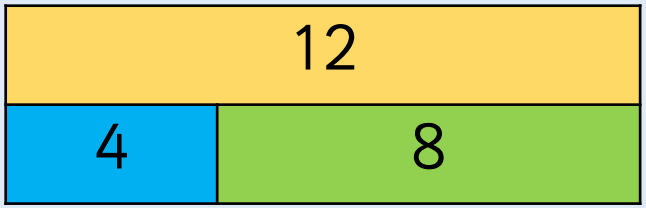
What's the same and what's different?

Activity 3 Related Facts

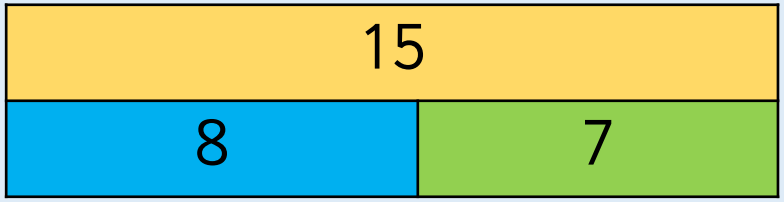
Complete and write addition and subtraction sentences for each bar model.



17 – 6 = 9
17 – 9 = 6
9 + 6 = 17
6 + 9 = 17



12 – 4 = 8
12 – 8 = 4
4 + 8 = 12
8 + 4 = 12

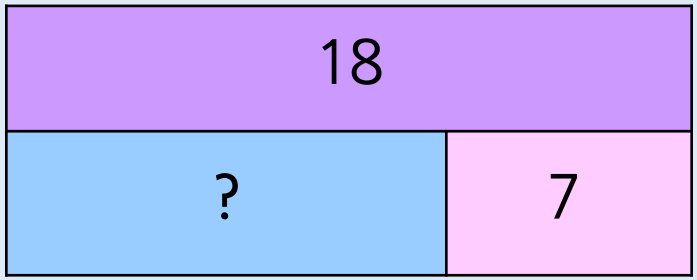


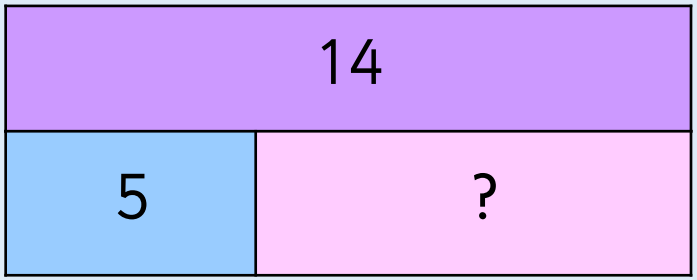
15 – 8 = 7
15 – 7 = 8

8 + 7 = 15
7 + 8 = 15

Activity 3 Related Facts

Complete and write addition and subtraction sentences for each bar model.

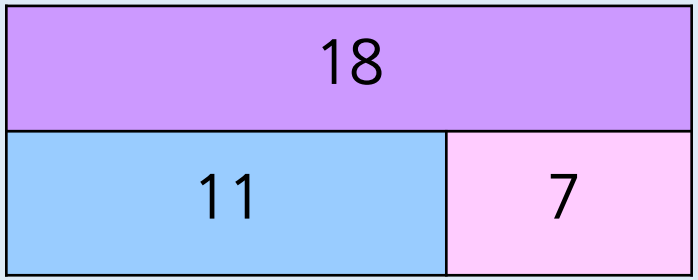




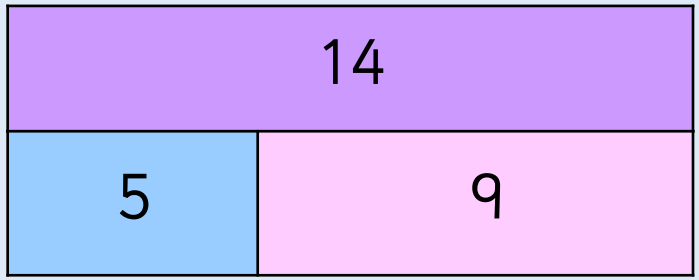
Can you use the numbers 5, 8 and 13 to make a bar model?
Can you write addition and subtraction sentences for this bar model?

Activity 3 Related Facts

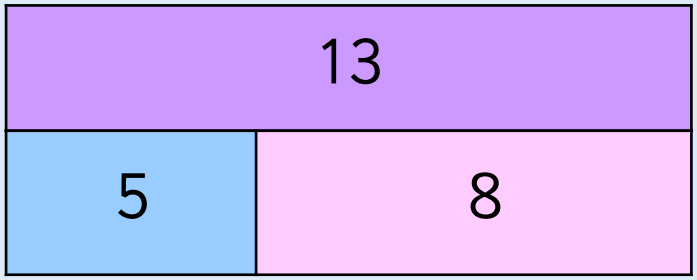
Complete and write addition and subtraction sentences for each bar model.



18 – 11 = 7
18 – 7 = 11
11 + 7 = 18
7 + 11 = 18



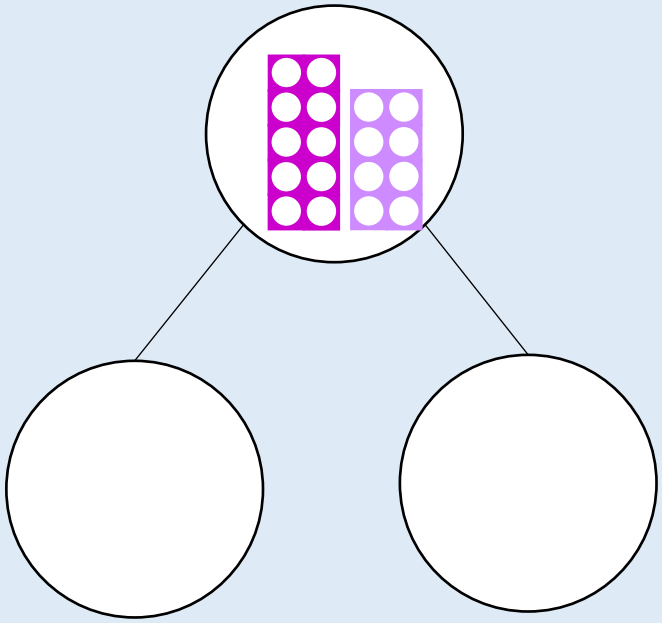
14 – 5 = 9
14 – 9 = 5
5 + 9 = 14
9 + 5 = 14



13 – 5 = 8
13 – 8 = 5
5 + 8 = 13
8 + 5 = 13

Reasoning - 1 Related Facts

Use the cards to write as many addition and subtraction sentences as you can.



eight	add
ten	subtract
eighteen	is equal to

Reasoning - 1 Related Facts

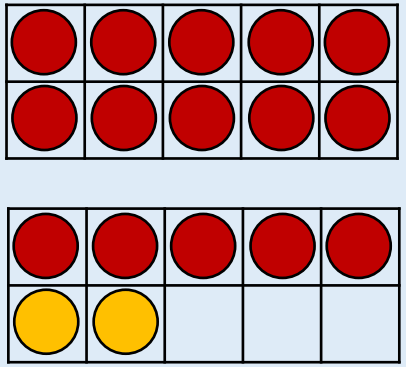
Use the cards to write as many addition and subtraction sentences as you can.

Children can use the words to create sentences.

Possible answers:
Eight add ten is equal to eighteen.
Eight is equal to eighteen subtract ten.

Reasoning - 2 Related Facts

Circle the addition and subtraction number sentences that match the ten frames.



15 + 2 = 17

15 – 2 = 17

2 + 17 = 15

17 – 15 = 2

17 + 2 = 15

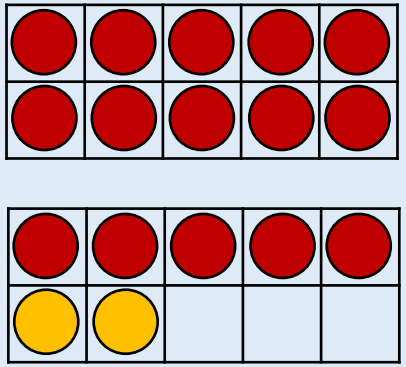
17 – 2 = 15

17 = 2 + 15

15 – 17 = 3

Reasoning - 2 Related Facts

Circle the addition and subtraction number sentences that match the ten frames.



15 + 2 = 17
17 – 15 = 2
17 – 2 = 15
17 = 2 + 15

Discussion

Related Facts

What's the same and what's different?

If we know 12 + 1 = 13, what else do we know?

Can you see any patterns?

If we know that 15 – 3 = 12, why can't we say 3 – 15 = 12?

Compare Number Sentences

1

Fluency & Reasoning Teaching Slides

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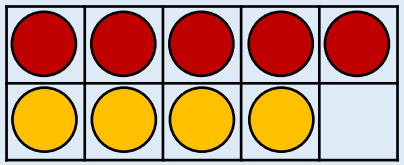
Activity 1 Compare Number Sentences

Which card completes the number sentence?

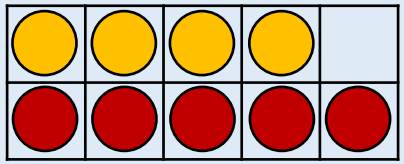


5 + 4

is more than

is less than

is equal to

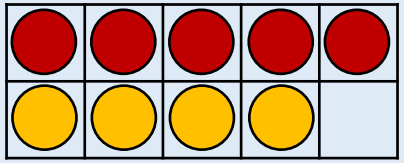


4 + 5

Do you always have to work out the answers to be able to compare calculations?

Activity 1 Compare Number Sentences

Which card completes the number sentence?

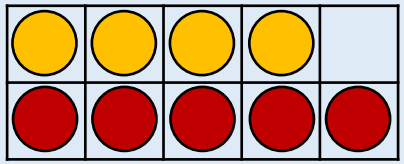


5 + 4

is more than

is less than

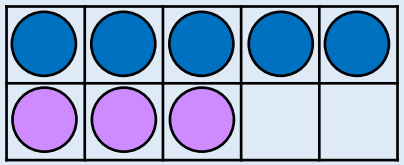
is equal to



4 + 5

Activity 1 Compare Number Sentences

Which card completes the number sentence?

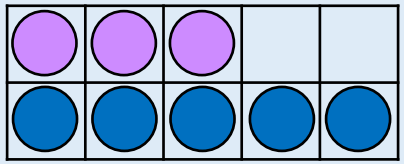


5 + 3

is more than

is less than

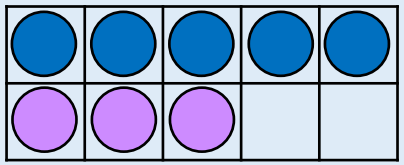
is equal to



3 + 5

Activity 1 Compare Number Sentences

Which card completes the number sentence?

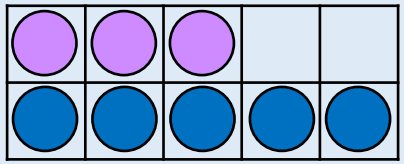


5 + 3

is more than

is less than

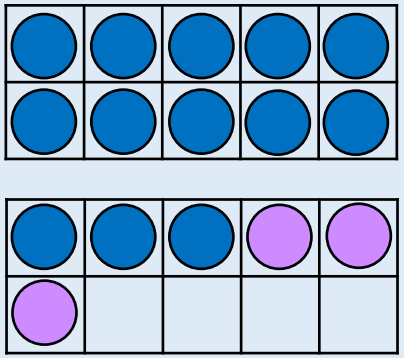
is equal to



3 + 5

Activity 1 Compare Number Sentences

Which card completes the number sentence?

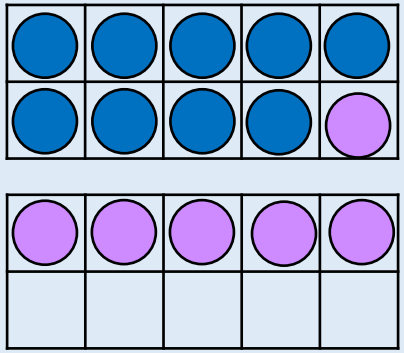


13 + 3

is more than

is less than

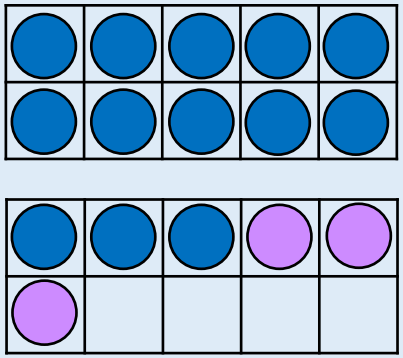
is equal to



9 + 6

Activity 1 Compare Number Sentences

Which card completes the number sentence?

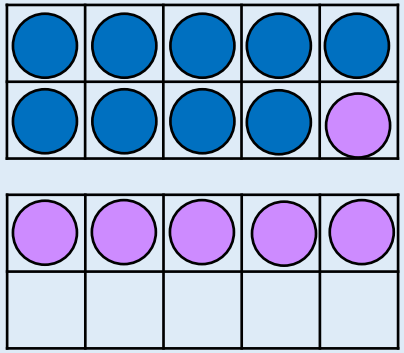


13 + 3

is more than

is less than

is equal to



9 + 6

Activity 2 Compare Number Sentences

Use <, > or = to compare the number sentences.

3 + 8	○	8 + 3
18 – 5	○	18
12 + 4	○	12 – 4

What does each symbol mean?

Activity 2 Compare Number Sentences

Use <, > or = to compare the number sentences.

3 + 8	=	8 + 3
18 – 5	<	18
12 + 4	>	12 – 4

Activity 2 Compare Number Sentences

Use <, > or = to compare the number sentences.

16 – 4	◯	16 – 7
13 + 5	◯	12 – 5
5 + 9	◯	7 + 6

Activity 2 Compare Number Sentences

Use <, > or = to compare the number sentences.

16 – 4	>	16 – 7
13 + 5	>	12 – 5
5 + 9	>	7 + 6

Activity 3 Compare Number Sentences

Choose the correct digit card to make the number sentences correct.

4	8	2

$13 - 5 < 13 - \_\_\_$

$16 - 4 = \_\_\_ + 4$

$9 + \_\_\_ > 9 + 1$

What does each symbol mean?

Activity 3 Compare Number Sentences

Choose the correct digit card to make the number sentences correct.

4	8	2

$13 - 5 < 13 - \underline{2}$

$16 - 4 = \underline{8} + 4$

$9 + \underline{4} > 9 + 1$

Reasoning - 1 Compare Number Sentences

Esin

Any number less than 10 would make this correct.
8 + 10 < 8 + ____

Do you agree with Esin?
Explain why.

Reasoning - 1 Compare Number Sentences

Esin

Any number less than 10 would make this correct.
8 + 10 < 8 + ____

Esin is incorrect. She needs to use any number greater than 10.

Reasoning - 2 Compare Number Sentences

Rosie has 15 sweets and eats 6 of them.
Malachi has 16 sweets and eats 7 of them.

Who has more sweets left?
Explain how you know.

Reasoning - 2 Compare Number Sentences

Rosie has 15 sweets and eats 6 of them.
Malachi has 16 sweets and eats 7 of them.

Rosie and Malachi have the same.
15 – 6 is equal to 16 – 7

Reasoning - 3 Compare Number Sentences

Zach is working out which symbol to use to compare the number sentences.

$15 - 5$ ◯ $15 + 5$

Zach

The missing symbol must be = because all of the numbers are the same.

Do you agree with Zach?
Explain why.

Reasoning - 3 Compare Number Sentences

Zach is working out which symbol to use to compare the number sentences.

$15 - 5$ ◯ $15 + 5$

Zach

The missing symbol must be = because all of the numbers are the same.

Zach is incorrect because when you take away 5 from 15 the answer will be smaller than when you add 5 to 15 so the correct symbol should be <

Discussion

Compare Number Sentences

What do each of the symbols mean?

Do you always have to work out the answers to be able to compare calculations? Why?

Why might Zach put 8 into the example below?

e.g. 7 + 1 = ___ – 2