Addition & Subtraction

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2

Fluency & Reasoning Teaching Slides

Fact Families

2
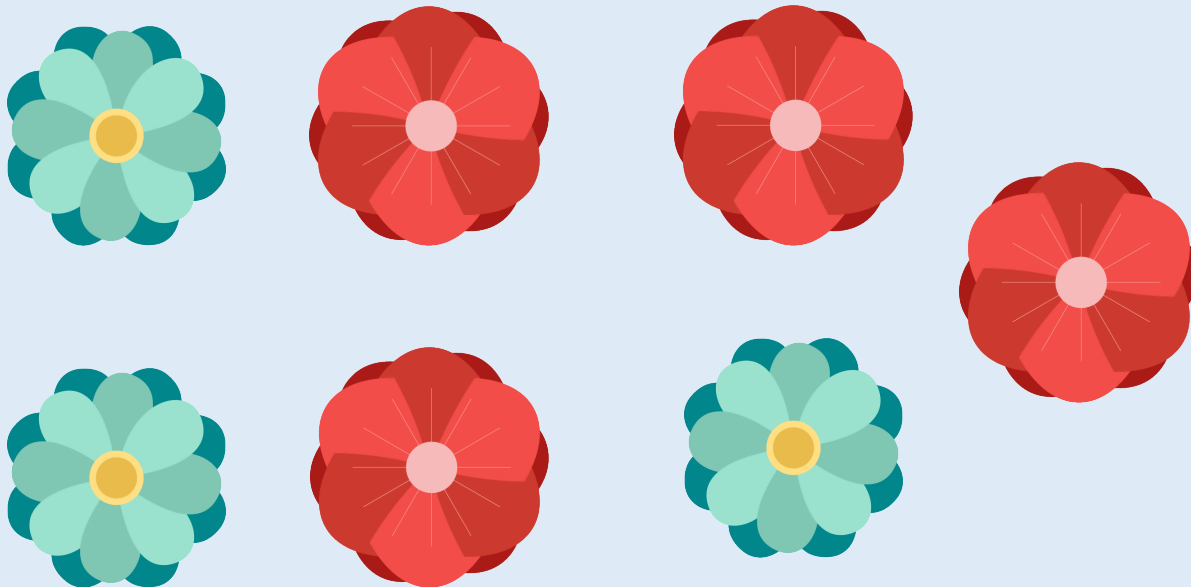
Fluency Teaching Slides

Fact Families

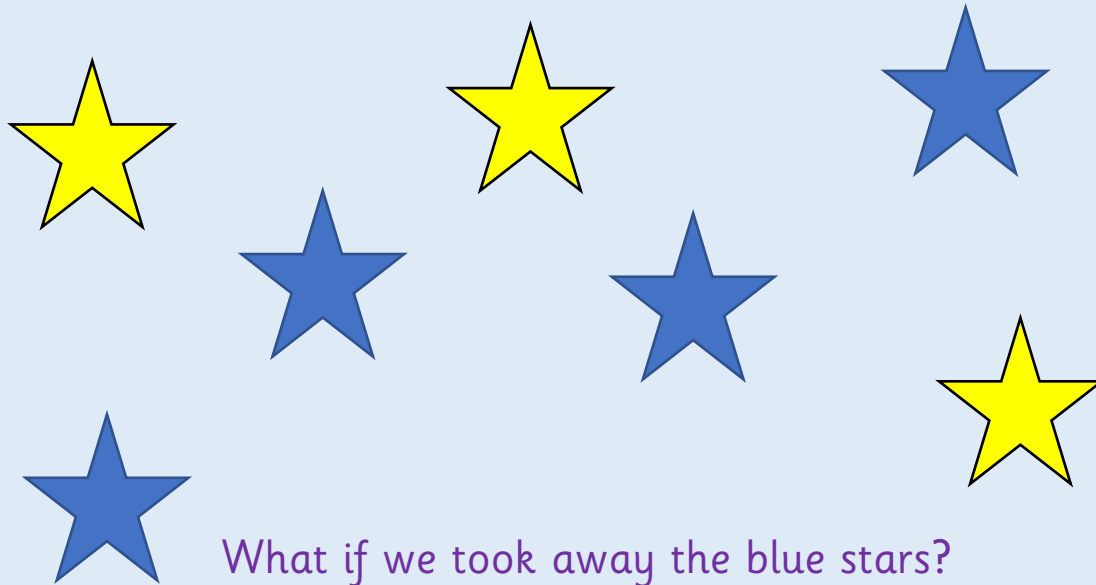Using concrete apparatus, can you talk about the relationships between the different flowers?

What if we took away the red flowers?

Fact Families

Using concrete apparatus, can you talk about the relationships between the different stars?

What if we took away the blue stars?
What are the parts?
What is the whole?

Does it change the answer if we add the the blue and yellow stars in different order?
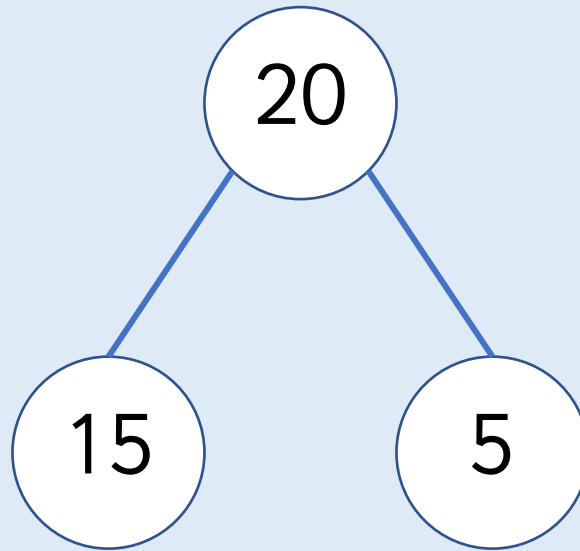
Fact Families

One relationship shown by this part-whole model is
$15 + 5 = 20$.
Can you write all associated number sentences in the fact family?

What does each circle represent on the part-whole model?

Fact Families

One relationship shown by this part-whole model is
15 + 5 = 20.
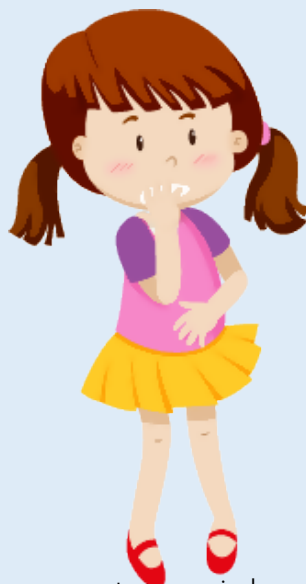Can you write all associated number sentences in the fact family?

20

15   5

5 + 15 = 20
15 + 5 = 20
20 − 15 = 5
20 − 5 = 15

20 = 5 + 15
20 = 15 + 5
5 = 20 − 15
15 = 20 − 5

Fact Families

One relationship shown by this part-whole model is
7 + 3 = 10.
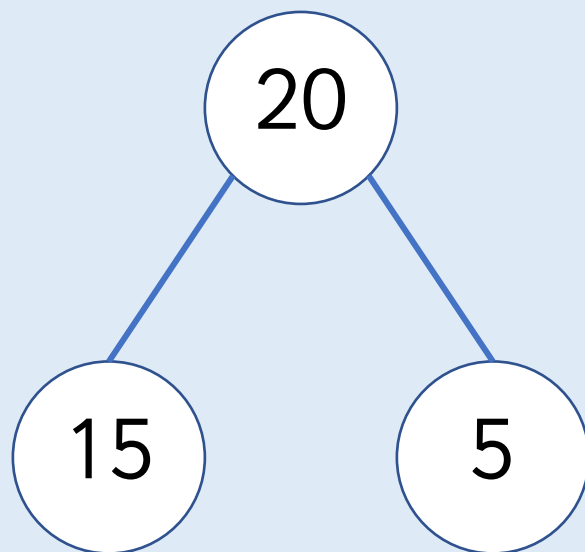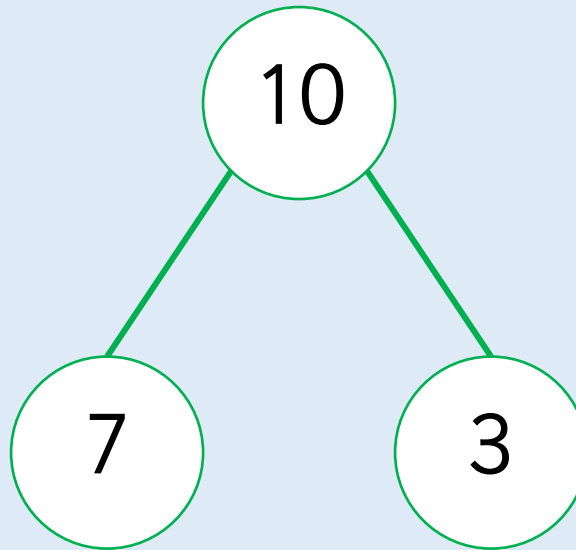Can you write all associated number sentences in the fact family?

10

7

3

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Fact Families

One relationship shown by this part-whole model is
$7 + 3 = 10$.

Can you write all associated number sentences in the fact family?

$3 + 7 = 10$
$7 + 3 = 10$
$10 - 7 = 3$
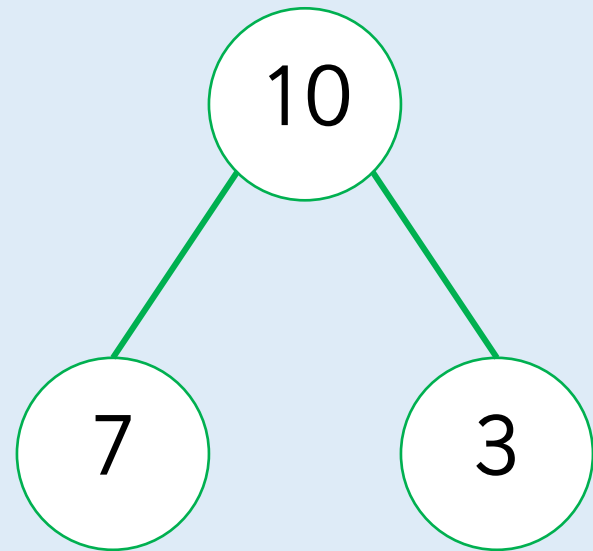$10 - 3 = 7$

$10 = 3 + 7$
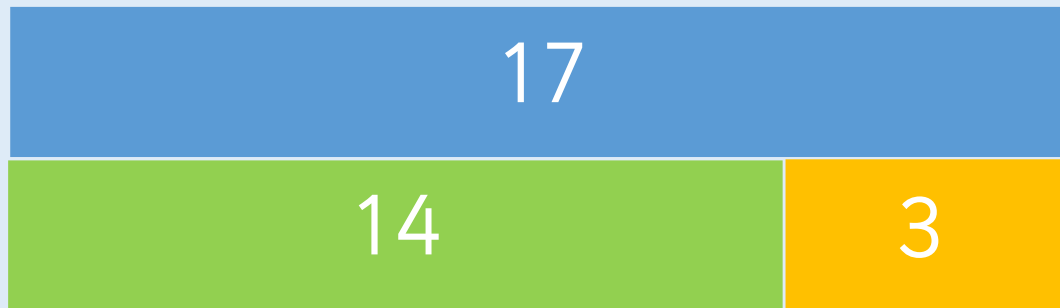$10 = 7 + 3$
$3 = 10 - 7$
$7 = 10 - 3$

10

7

3

Fact Families

Look at the bar model below.
Can you write all of the number sentences in the fact family?

17	
14	3

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Fact Families

Look at the bar model below.
Can you write all of the number sentences in the fact family?

17

14	3

3 + 14 = 17   17 = 3 + 14
14 + 3 = 17   17 = 14 + 3

17 − 14 = 3   3 = 17 − 14
17 − 3 = 14   14 = 17 − 3

Fact Families

Look at the bar model below.
Can you write all of the number sentences in the fact family?

19
11	8

Fact Families

Look at the bar model below.
Can you write all of the number sentences in the fact family?

19	
11	8

11 + 8 = 19   19 = 11 + 8
8 + 11 = 19   19 = 8 + 11

19 – 11 = 8   8 = 19 – 11
19 – 8 = 11   11 = 19 – 8

Here is an incomplete bar model.
The total is greater than 10 but less than 20.

5

What could the numbers be?
How many different combinations can you find?

Here is an incomplete bar model.
The total is greater than 10 but less than 20.

5

6 and 11, 7 and 12, 8 and 13, 9 and 14, 10 and 15, 11 and 16, 12 and 17, 13 and 18, 14 and 19

There are 9 different combinations.

Fact Families

$$9 - 4 = 5$$
$$9 - 5 = 4$$
$$9 = 5 - 4$$
$$5 = 9 - 4$$

Esin

I think that all these facts are correct because the numbers are related.

I disagree.

Zach

Who is correct? Can you prove it?

$$9 - 4 = 5$$
$$9 - 5 = 4$$
$$9 = 5 - 4$$
$$5 = 9 - 4$$

Esin

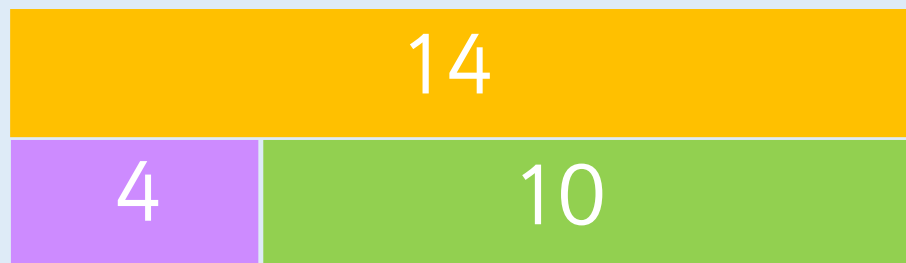I think that all these facts are correct because the numbers are related.

I disagree.
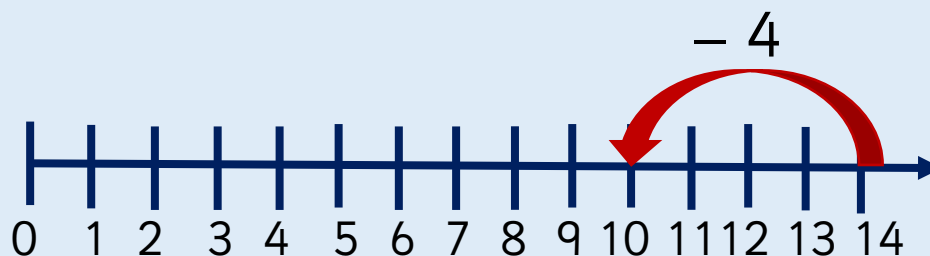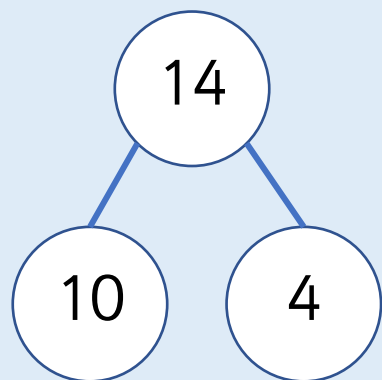
Zach

Zach is correct because 9 does not equal 5 – 4

Fact Families

There are 10 cars in a car park,
4 cars have already left.

14	
4	10

$14 = 10 + 4$ $10 - 4 = 14$

14
10   4

$- 4$

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

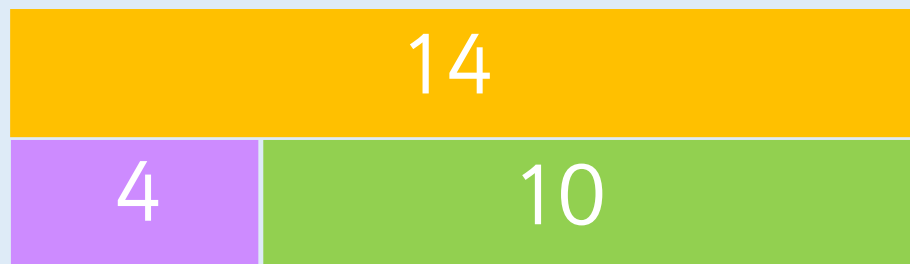**Which of the representations are equivalent to the bar model?**

There are 10 cars in a car park, 4 cars have already left.

14	
4	10

14 = 10 + 4   10 – 4 = 14

14
10   4

– 4

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
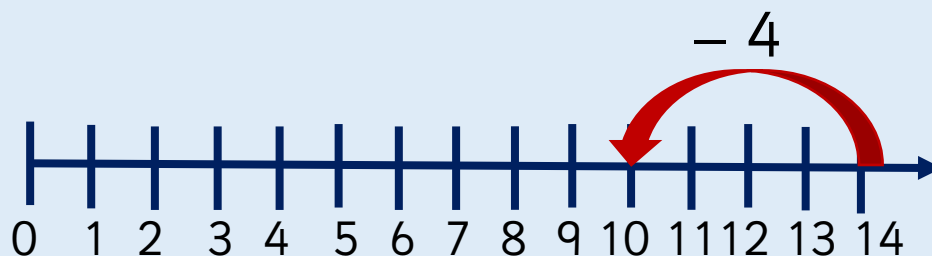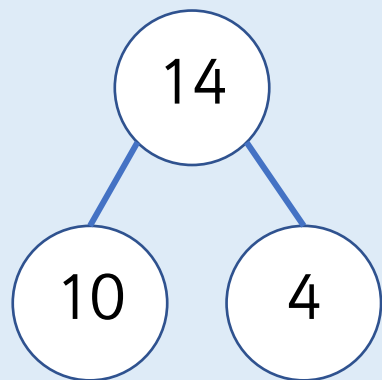
The number line, the part-whole model and 14 = 10 + 4

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Fact Families

What if we took away the red flowers? What are the parts? What is the whole?

Does it change the answer if we add the blue and red flowers in a different order?

What does each circle represent on the part-whole model?
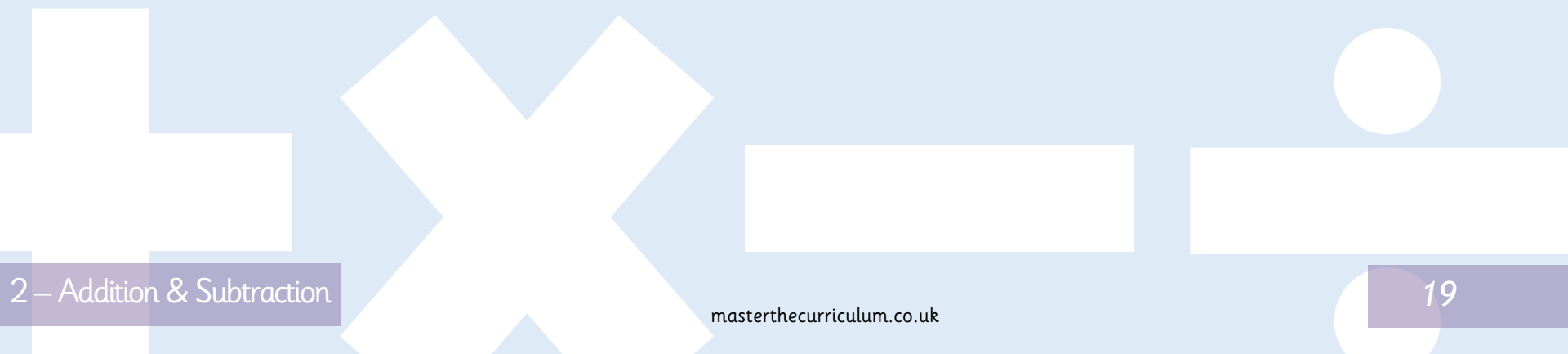
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Check Calculations

2

Check Calculations

Use concrete objects to check and prove whether the calculations are correct.

$$12 - 4 = 8$$
$$7 + 8 = 15$$

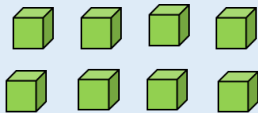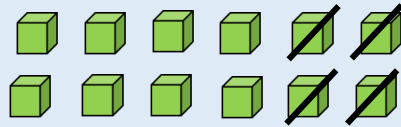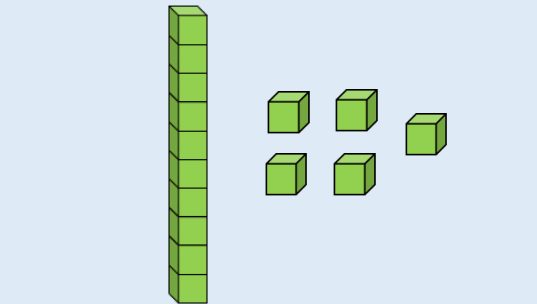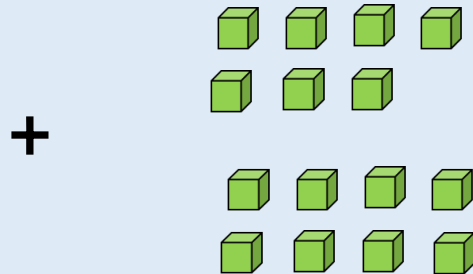*What resources could you use to check your calculation?*

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Check Calculations

Use concrete objects to check and prove whether the calculations are correct.

12 − 4 = 8

7 + 8 = 15

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Check Calculations

Can you inverse operations to check 5 + 12 = 17?
How many possible inverse calculations are there?

17	
5	12

Why do we need to check our calculation?

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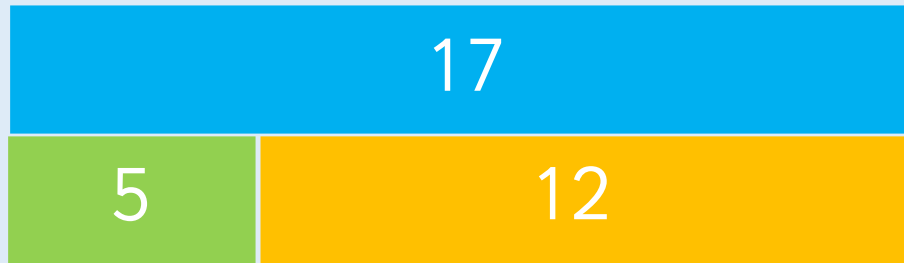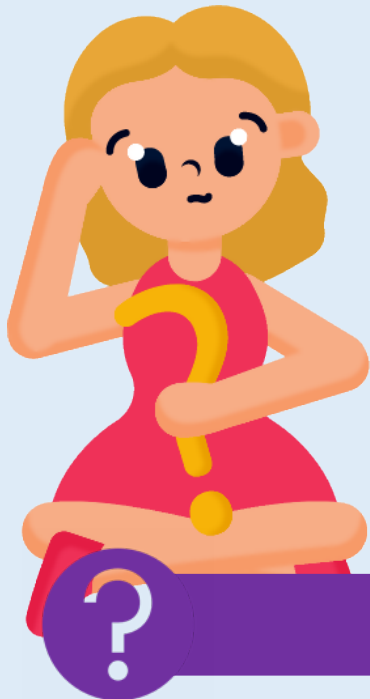
Check Calculations

Can you inverse operations to check 5 + 12 = 17?
How many possible inverse calculations are there?

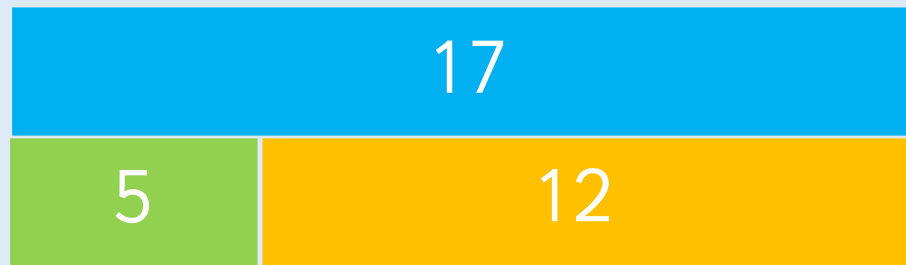| 17	
5	12

17 − 5 = 12   17 − 12 = 5

There are two possible inverse calculations.

Can you inverse operations to check 13 + 5 = 18?
How many possible inverse calculations are there?

18	
13	5

Check Calculations

Can you inverse operations to check 13 + 5 = 18?
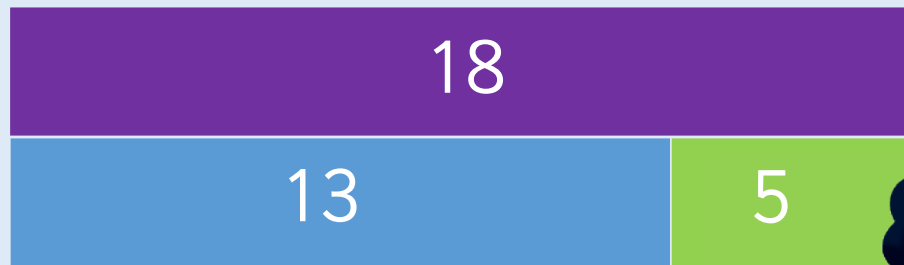How many possible inverse calculations are there?

18	
13	5
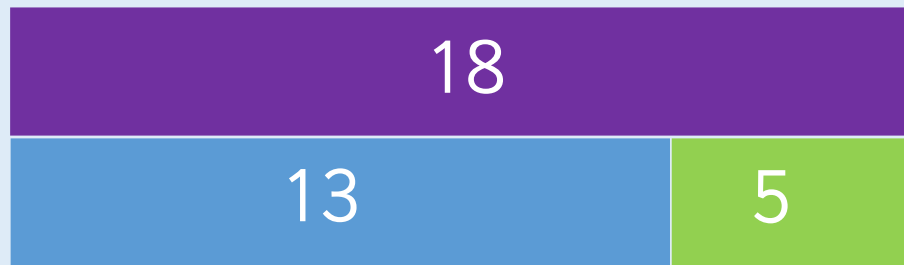
18 − 13 = 5   18 − 5 = 13

There are two possible inverse calculations.

Tia writes this calculation: 18 − 5 = 13.
Which of the following could she use to check her work?

13 + 5   13 − 5

18 − 13   5 + 13

Can you check it in more than one way?

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Check Calculations

Tia writes this calculation: 18 – 5 = 13.
Which of the following could she use to check her work?

13 + 5   13 – 5

18 – 13   5 + 13

Tia can use 13 + 5 and 5 + 13 to check her work because these are the inverse operations of her calculation.

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Check Calculations

Leanna writes this calculation: 17 − 6 = 11.
Which of the following could she use to check her work?

17 + 6   11 + 6

17 − 11   11 − 6

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Leanna writes this calculation: 17 − 6 = 11.
Which of the following could she use to check her work?

$$17 + 6 \qquad 11 + 6$$

$$17 - 11 \qquad 11 - 6$$

Leanna can use 11 + 6 to check her work because this is the inverse operation of her calculation.

Check Calculations

Zach writes this calculation: 14 + 5 = 19.
Which of the following could he use to check his work?

5 + 19   14 + 19

14 – 5   19 – 5

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Zach writes this calculation: 14 + 5 = 19.
Which of the following could he use to check his work?

5 + 19   14 + 19

14 – 5   19 – 5

Zach can use 19 – 5 to check his work because this is the inverse operation of his calculation.

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Rosie did the following calculation.
She checked it by using the inverse.

$$13 - 9 = 4$$

She did 13 + 9 = 22 and said that her first calculation was wrong.

What advice would you give her?

Rosie did the following calculation.
She checked it by using the inverse.

$$13 - 9 = 4$$

She did 13 + 9 = 22 and said that her first calculation was wrong.

The inverse operation should have been
9 + 4 = 13 or 4 + 9 = 13

Malachi is checking Tia's work but doesn't do an inverse calculation.

$$25 + 5 = 75$$
$$25 - 23 = 12$$
$$19 - 4 = 23$$

These calculations can't be right.

Malachi

How might he know?
What errors have been made in each calculation?

Check Calculations

Malachi is checking Tia's work but doesn't do an inverse calculation.

All of the calculations involve errors:
5 has been added to the tens instead of the ones.

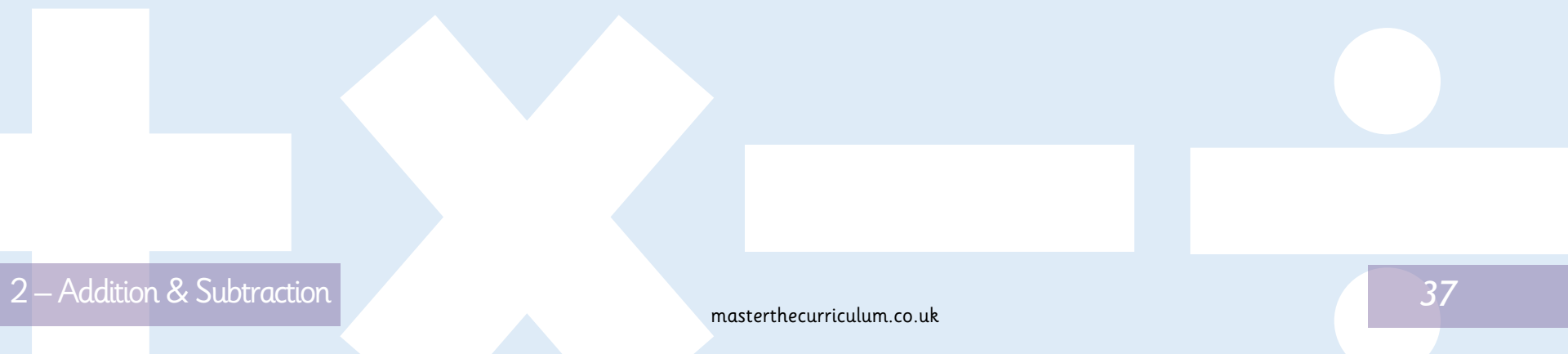25 and 23 are very close in value and therefore can't result in such a large difference.

19 and 4 have been added instead of subtracted.

What resources could you use to check your calculation?

Can you check it in more than one way?
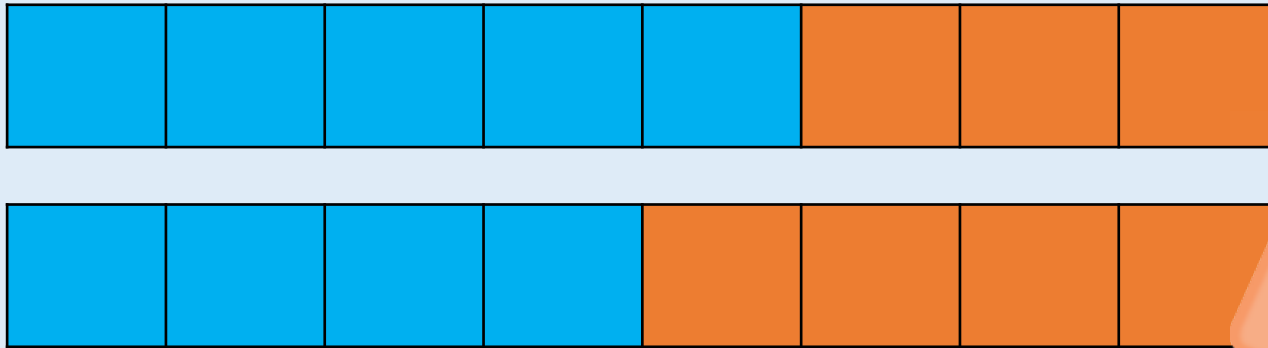
Why do we need to check our calculation?

Compare Number Sentences

2

Fluency Teaching Slides

Compare Number Sentences
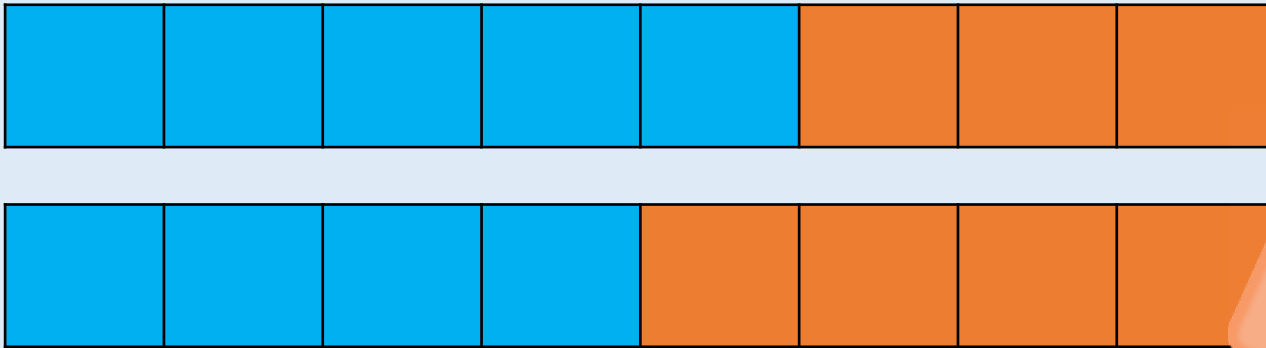
How can we use the following representation to prove that
$5 + 3 = 4 + 4$

What other numbers make the same total?

Compare Number Sentences

How can we use the following representation to prove that
5 + 3 = 4 + 4

Both representations are equal to 8:
5 + 3 = 8
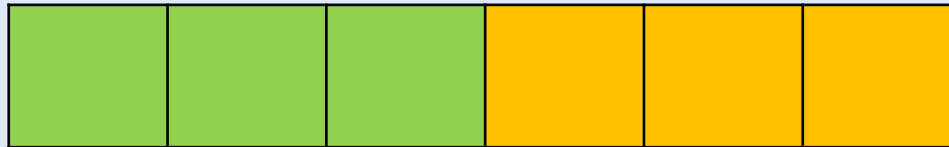4 + 4 = 8
Therefore,
5 + 3 = 4 + 4

Compare Number Sentences
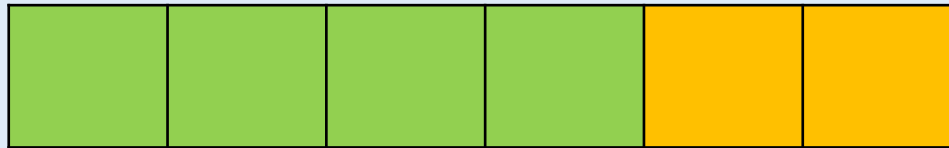
How can we use the following representation to prove that
4 + 2 = 3 + 3
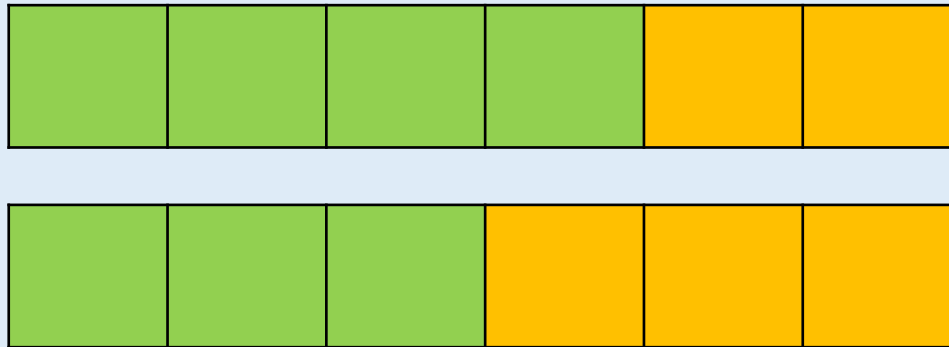
Compare Number Sentences

How can we use the following representation to prove that
$4 + 2 = 3 + 3$

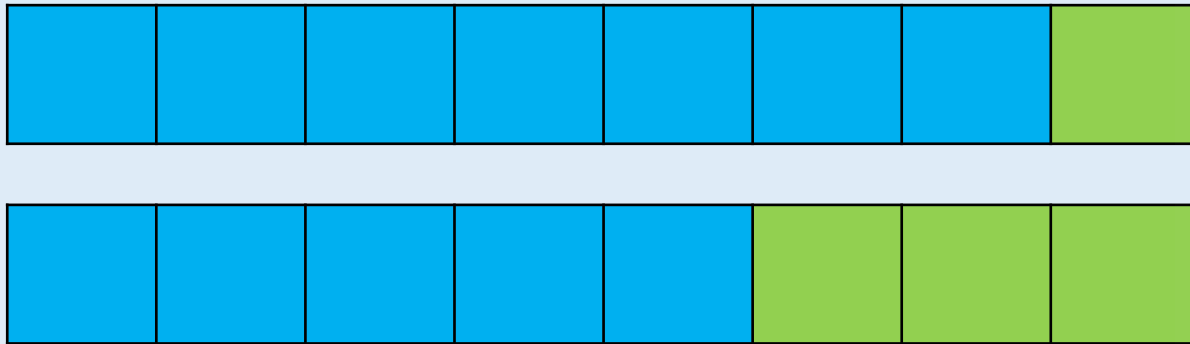Both representations are equal to 6:
$4 + 2 = 6$
$3 + 3 = 6$
Therefore,
$4 + 2 = 3 + 3$

Compare Number Sentences

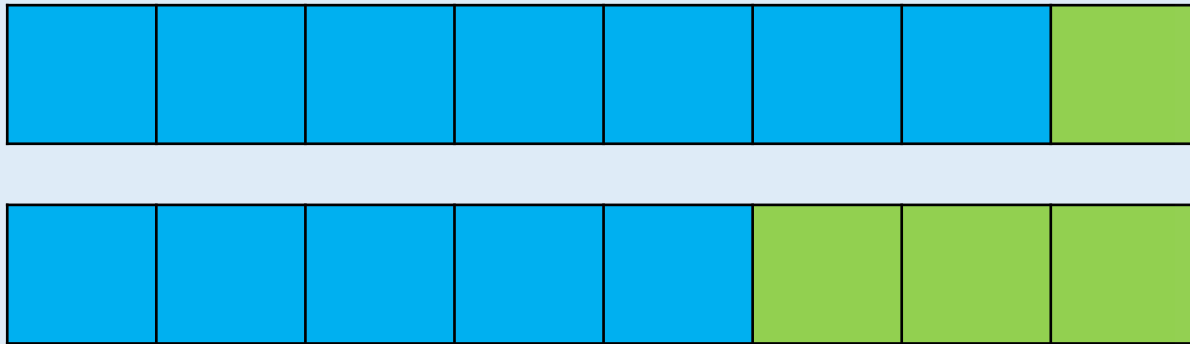How can we use the following representation to prove that
7 + 1 = 5 + 3

Compare Number Sentences

How can we use the following representation to prove that
7 + 1 = 5 + 3

Both representations are equal to 8:
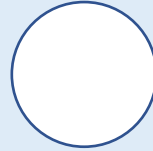7 + 1 = 8
5 + 3 = 8
Therefore,
7 + 1 = 5 + 3

Compare Number Sentences

Fill in the circles with either <, > or =
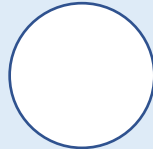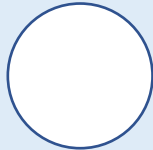
6 + 4 ◯ 6 + 5

6 + 4 ◯ 3 + 6

11 − 4 ◯ 12 − 5

11 − 4 ◯ 12 − 4

Do we need to calculate to find the answer?

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Fill in the circles with either <, > or =

6 + 4   **<**   6 + 5

6 + 4   **>**   3 + 6

11 – 4   **=**   12 – 5

11 – 4   **<**   12 – 4

Compare Number Sentences

Fill in the circles with either <, > or =

3 + 6 ◯ 3 + 4

6 + 6 ◯ 10 + 2

7 + 3 ◯ 2 + 3

Compare Number Sentences

Fill in the circles with either <, > or =

$$3 + 6 \;\; \boxed{>} \;\; 3 + 4$$
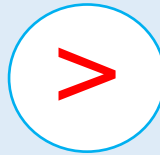
$$6 + 6 \;\; \boxed{=} \;\; 10 + 2$$
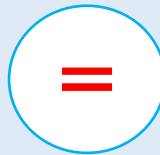
$$7 + 3 \;\; \boxed{>} \;\; 2 + 3$$
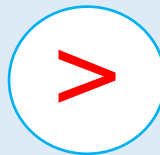
Compare Number Sentences

Fill in the circles with either <, > or =

$7 - 4$ ◯ $7 - 1$

$14 - 4$ ◯ $20 - 10$

$11 - 5$ ◯ $8 - 5$

Compare Number Sentences

Fill in the circles with either <, > or =

$$7 - 4 \quad \boxed{<} \quad 7 - 1$$

$$14 - 4 \quad \boxed{=} \quad 20 - 10$$

$$11 - 5 \quad \boxed{>} \quad 8 - 5$$

Compare Number Sentences

Complete the missing numbers.

$$5 + 3 = 6 + \underline{}$$

$$5 + 3 = \underline{} + 6 = 7 + \underline{}$$

$$\underline{} + 3 = \underline{} + 4 = 5 + 5$$

Do you notice a pattern? What would come next?

Compare Number Sentences

Complete the missing numbers.

$$5 + 3 = 6 + \underline{2}$$

$$5 + 3 = \underline{2} + 6 = 7 + \underline{1}$$

$$\underline{7} + 3 = \underline{6} + 4 = 5 + 5$$

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Compare Number Sentences

Complete the missing numbers.

$$4 + 2 = 5 + \underline{\quad}$$

$$7 + 5 = 6 + \underline{\quad}$$

$$\underline{\quad} + 2 = 4 + 1$$

Compare Number Sentences

Complete the missing numbers.

$$4 + 2 = 5 + \underline{1}$$

$$7 + 5 = 6 + \underline{6}$$

$$\underline{3} + 2 = 4 + 1$$

Compare Number Sentences

Complete the missing numbers.

4 + 3 = 5 + _____

4 + 3 = _____ + 5 = 6 + _____

_____ + 6 = _____ + 2 = 9 + 1

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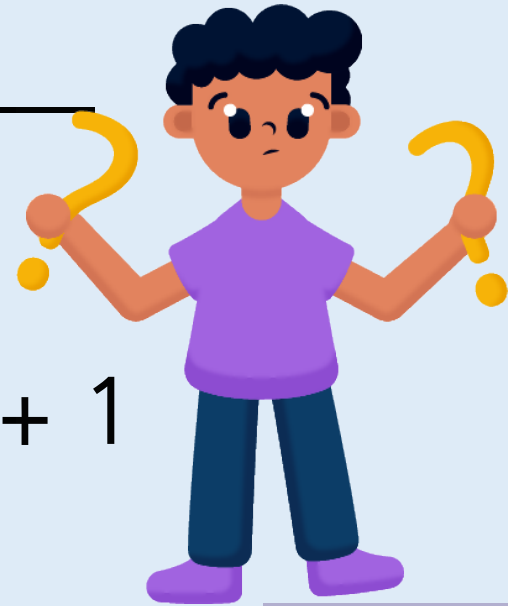
Compare Number Sentences

Complete the missing numbers.

$$4 + 3 = 5 + \underline{2}$$

$$4 + 3 = \underline{2} + 5 = 6 + \underline{1}$$

$$\underline{4} + 6 = \underline{8} + 2 = 9 + 1$$
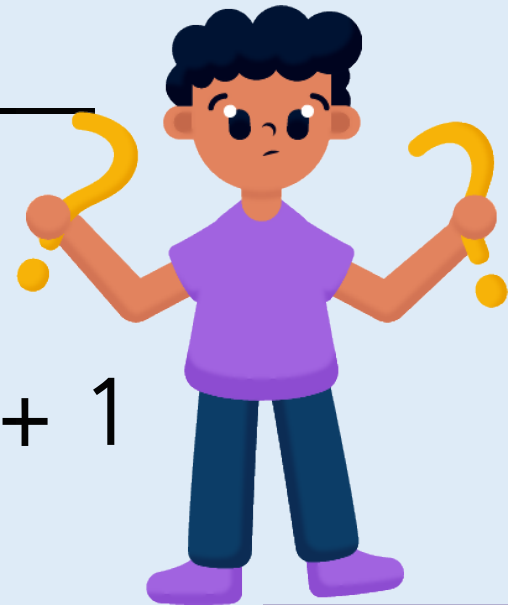
Compare Number Sentences

Complete the missing numbers.

$$7 - 2 = 10 - \underline{\quad}$$

$$7 - 2 = \underline{\quad} - 1 = 10 - \underline{\quad}$$

$$\underline{\quad} - 3 = 8 - 8$$

Compare Number Sentences

Complete the missing numbers.

$$7 - 2 = 10 - \underline{5}$$

$$7 - 2 = \underline{6} - 1 = 10 - \underline{5}$$

$$\underline{3} - 3 = 8 - 8$$

Compare Number Sentences

Tia thinks she knows the missing number without calculating the answer.

16

9   7

18

9   ?

Can you explain how this could be possible?

Compare Number Sentences

Tia thinks she knows the missing number without calculating the answer.

16

9   7

18

9   ?

18 is two more than 16, so the missing number must be two more than 7.
The missing number must be 9.

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Both missing numbers are less than 10.

$$8 + \boxed{} < 8 + \boxed{}$$

How many different possible answers can you find?

Both missing numbers are less than 10.

$$8 + \boxed{} < 8 + \boxed{}$$

Lots of different combinations, the left number has to be smaller than the right.
Possible answers:
1 and 2, 1 and 3, 1 and 4, 1 and 5, 1 and 6, 1 and 7, 1 and 8, 1 and 9 etc.

Compare Number Sentences

What other numbers make the same total?

Do we need to calculate to find the answer?

Do you notice a pattern? What would come next?
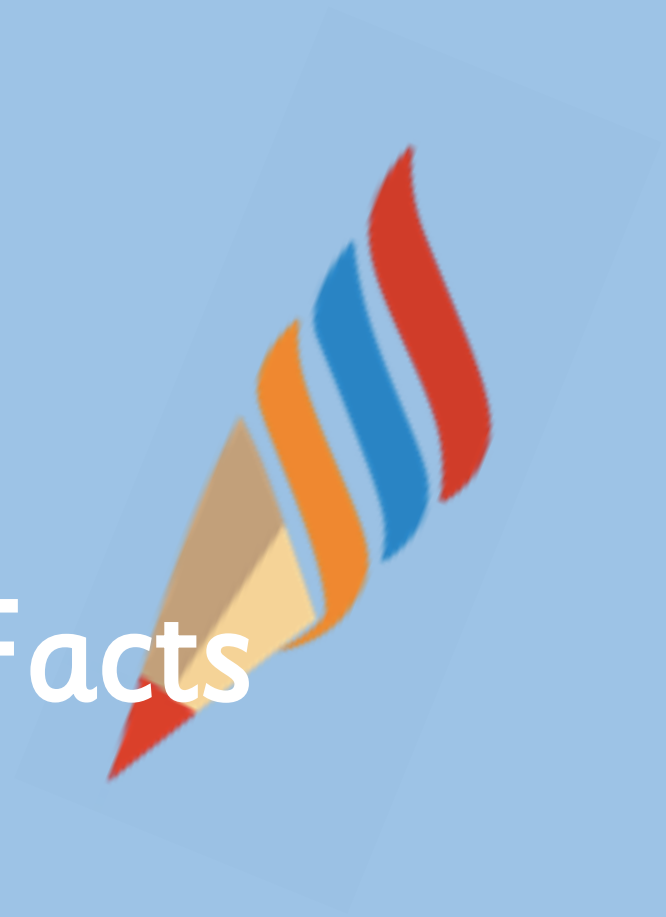
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Related Facts

2

Fluency Teaching Slides

Related Facts

I have 4 red marbles and 2 green marbles. Together I have 6 marbles.

I have 40 red marbles and 20 green marbles.

Together I have _____marbles.

What is the Same? What is different?

Related Facts

I have 4 red marbles and 2 green marbles. Together I have 6 marbles.

I have 40 red marbles and 20 green marbles.

Together I have __60__ marbles.

What is the Same? What is different?

I have 3 blue pens and 4 black pens. Together I have 7 pens.
Malachi has 30 blue pens and 40 black pens.
How many does he have in total?
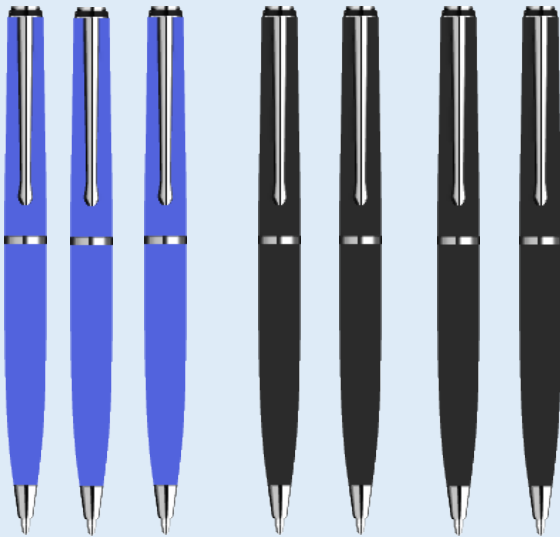
Use concrete apparatus to show your thinking.

What is the Same? What is different?

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I have 3 blue pens and 4 black pens. Together I have 7 pens.
Malachi has 30 blue pens and 40 black pens.
How many does he have in total?

Use concrete apparatus to show your thinking.
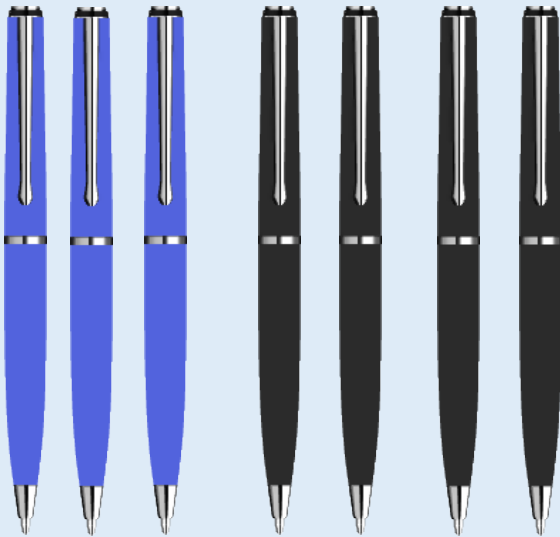
He has 70 pens.

What is the Same? What is different?

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Related Facts

Complete the part-whole models below:

10

6

100

40

What is the same?

Related Facts

Complete the part-whole models below:

10

6   4

100

60   40

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Related Facts

Complete the part-whole models below:

80

70

8

1

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Related Facts

Complete the part-whole models below:

80

70   10

8

7   1

Related Facts

Complete the part-whole models below:

10

3

100

70

Related Facts

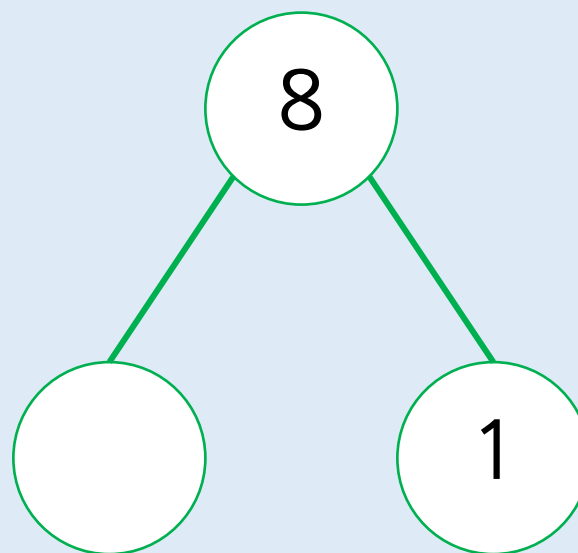Complete the part-whole models below:

10
3 7

100
30 70

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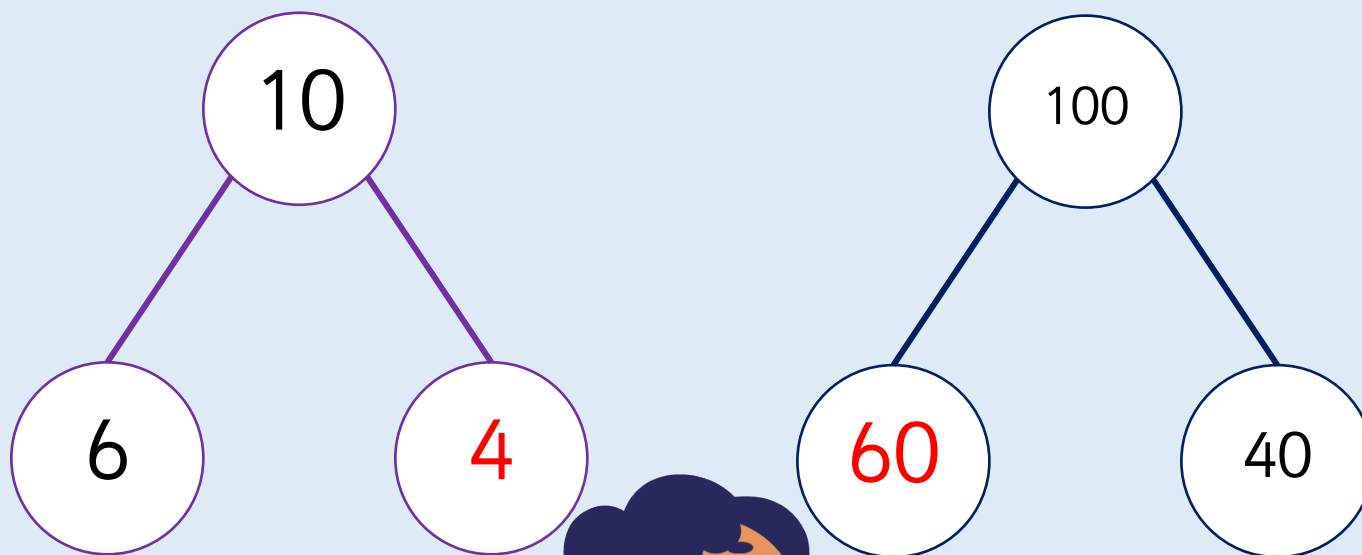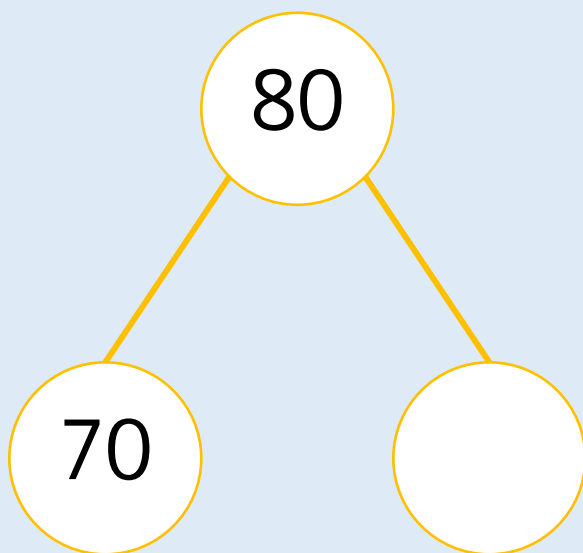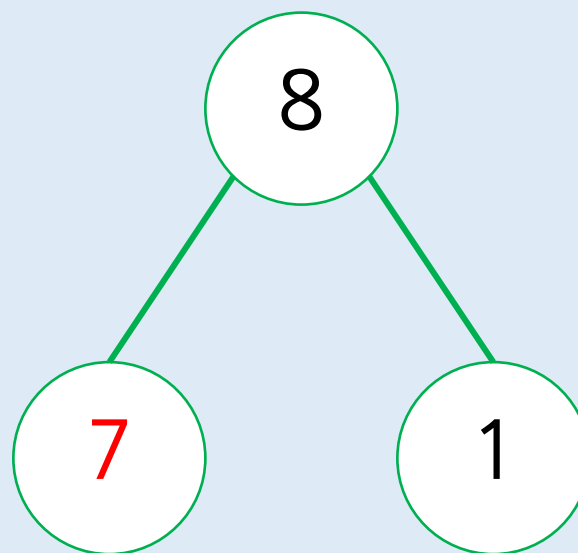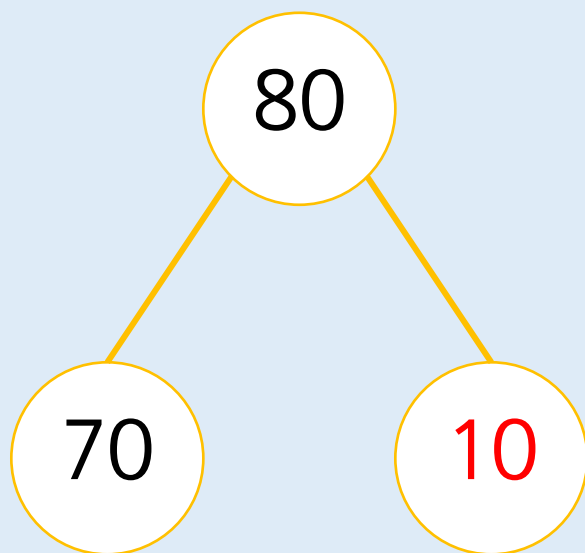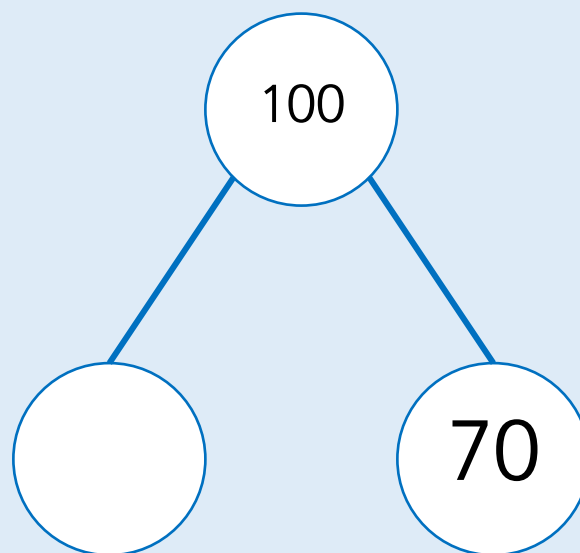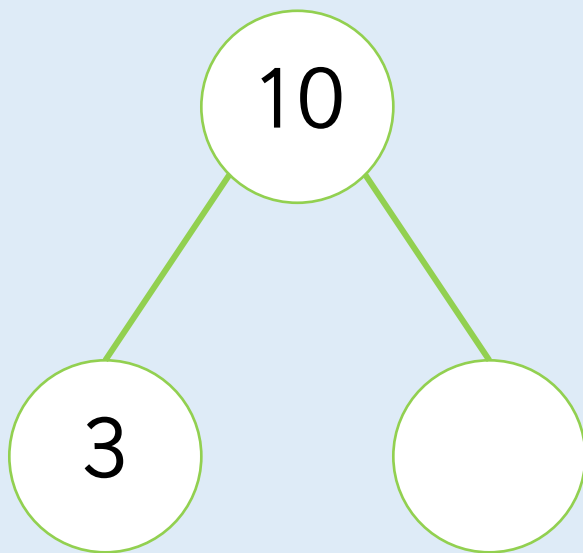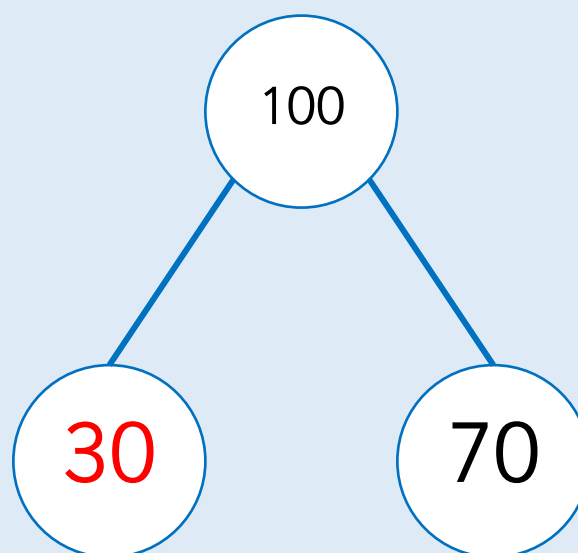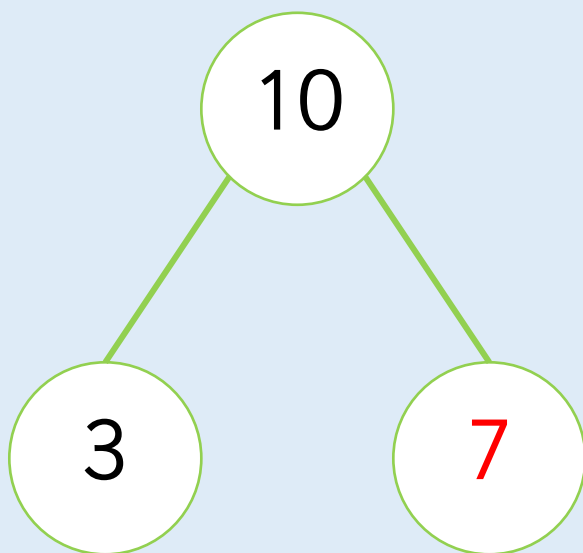
Find the missing numbers in the related facts.

$5 + 4 = 9$ $8 = 3 + 5$ $4 = 10 - 6$

$50 + 40 = \underline{\quad}$ $80 = 30 + \underline{\quad}$

$40 = \underline{\quad} - 60$

What is the same? What is different?

Find the missing numbers in the related facts.

$5 + 4 = 9$ $8 = 3 + 5$ $4 = 10 - 6$

$50 + 40 = \underline{90}$ $80 = 30 + \underline{50}$

$40 = \underline{100} - 60$

Related Facts

Find the missing numbers in the related facts.

$3 + 2 = 5$

$6 = 3 + 3$

$30 + 20 = $ _____

$60 = 30 + $ ____

$6 = 10 - 4$

$2 = 5 - 3$

$60 = $ ____ $ - 40$

$20 = $ ____ $ - $ ____
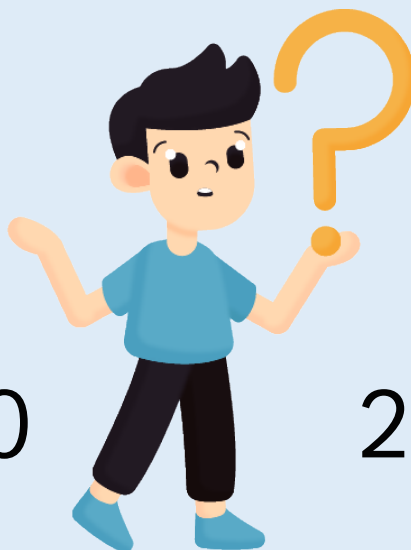
Related Facts

Find the missing numbers in the related facts.

$3 + 2 = 5$

$6 = 3 + 3$

$30 + 20 = \underline{50}$

$60 = 30 + \underline{30}$

$6 = 10 - 4$

$2 = 5 - 3$

$60 = \underline{100} - 40$

$20 = \underline{50} - \underline{30}$

Continue the pattern. What are the similarities and differences between this pattern and the following one?

$$60 = 100 - 40$$
$$50 = 100 - 50$$
$$40 = 100 - 60$$

$$6 = 10 - 4$$
$$5 = 10 - 5$$
$$4 = 10 - 6$$

Continue the pattern. What are the similarities and differences between this pattern and the following one?

$$60 = 100 - 40$$
$$50 = 100 - 50$$
$$40 = 100 - 60$$

$$6 = 10 - 4$$
$$5 = 10 - 5$$
$$4 = 10 - 6$$

The digits are the same but the place value changes.

If I know 8 + 2 = 10, I can work out 80 + ___ = 100

Leanna

Find the missing number and explain how Leanna knows.

If I know 8 + 2 = 10, I can work out 80 + ___ = 100

Leanna

20

All the numbers are ten times bigger.

Esin goes to the fruit shop. If she needs 30 apples, what's the cheapest way to buy them?

One apple costs 6p.
A bag of 10 apples costs 50p.

What would the difference be between buying 30 single apples and 3 bags of 10 apples?

How much does each apple cost if she buys a bag of 10?
Explain your answer.

Esin goes to the fruit shop. If she needs 30 apples, what's the cheapest way to buy them?

One apple costs 6p.
A bag of 10 apples costs 50p.

Three bags of 10 apples cost £1.5, which is cheaper.
The difference between buying 30 single apples and 3 bags of 10 is 30p.

In a bag, each apple costs 5p because 50p ÷ 10 = 5p

How does Base 10 help you to see the relationship between the different numbers and calculations?

What do you notice about the part-whole models?

Is there a relationship between the numbers that are represented?
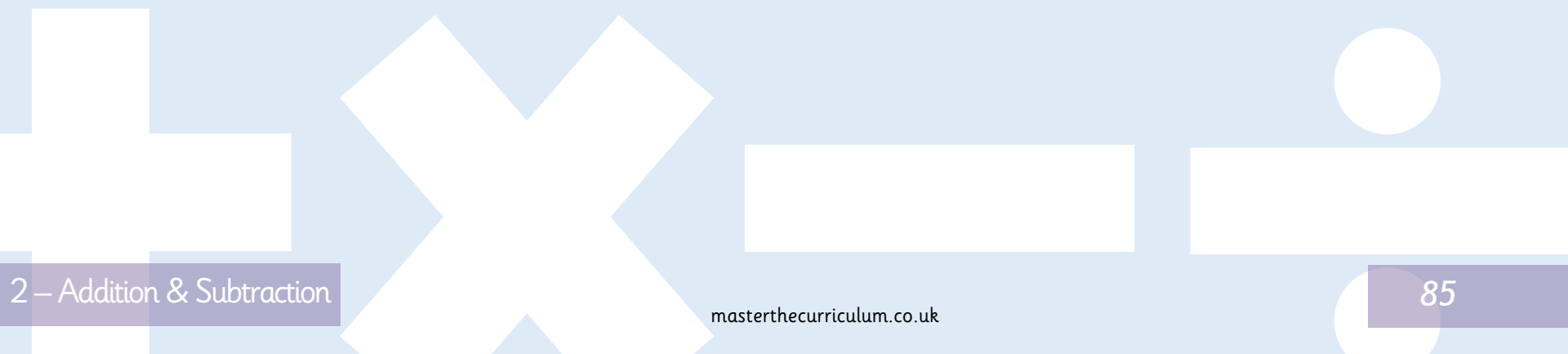
Bonds to 100 (Tens)

2

Bonds to 100 (Tens)

Using ten frames to represent 100.

10	10	10	10	10
10	10	10	10	10

10	10	10	10	10

This represents 50.

How are number bonds to 10 and number bonds to 100 similar?

Bonds to 100 (Tens)

What do the ten frames represent if each square is ten?
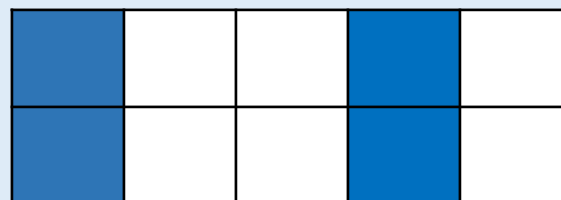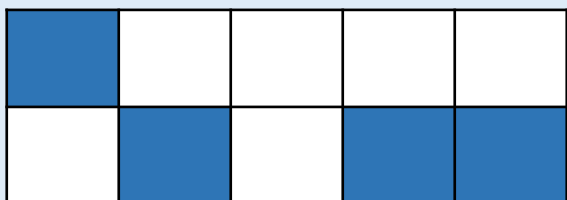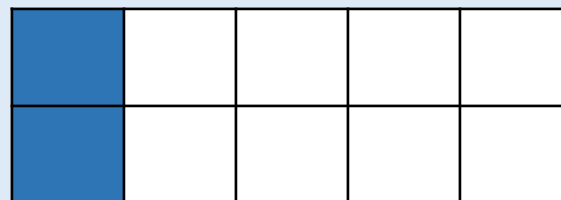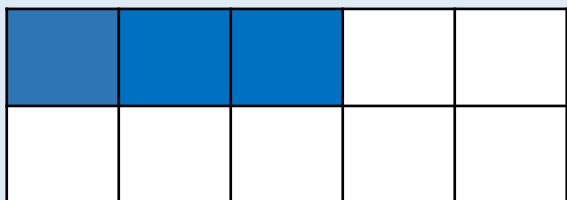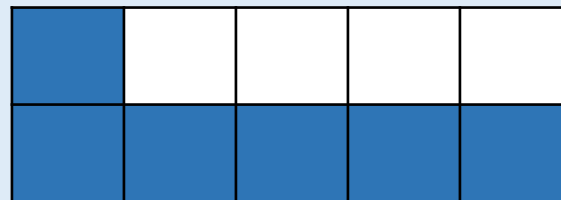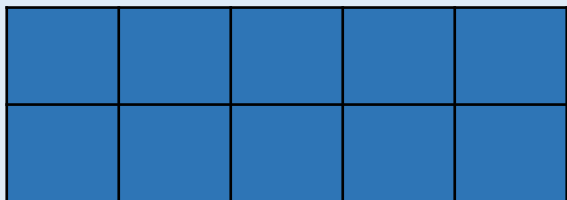
Bonds to 100 (Tens)

What do the ten frames represent if each square is ten?

100

60

30

20

40

40
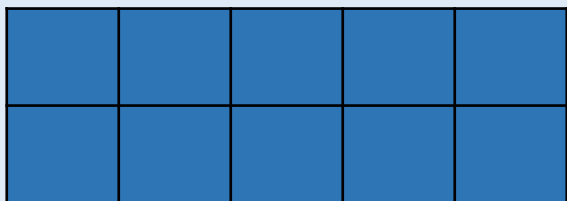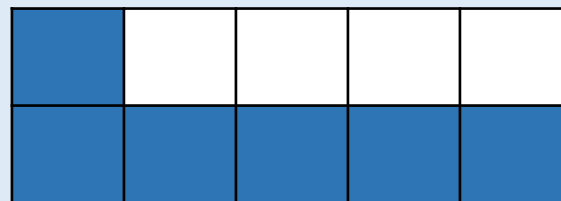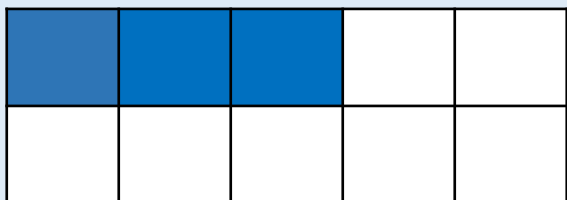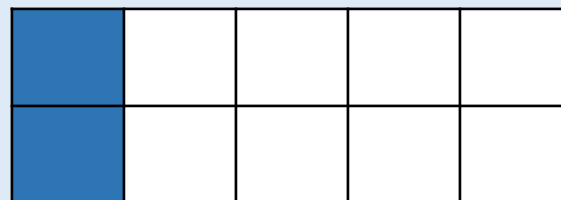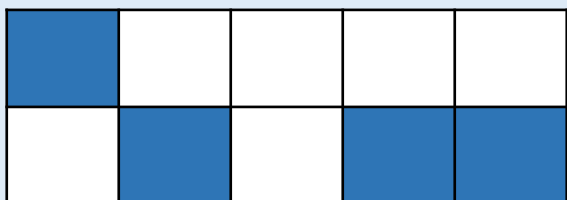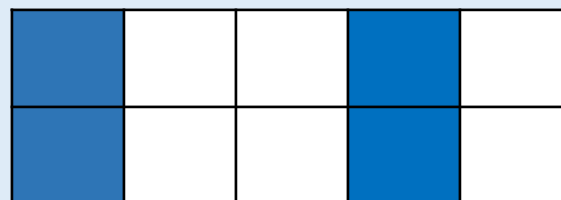
Bonds to 100 (Tens)

These ten frames can represent number sentences.

50 + 50 = 100

10 + 90 = 100

What calculation do the ten frames below represent?

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These ten frames can represent number sentences.
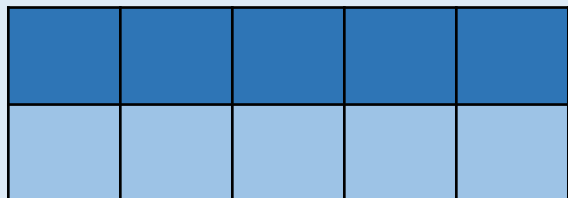
50 + 50 = 100
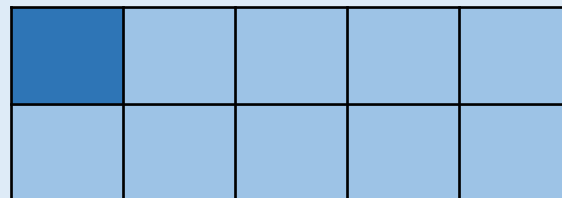
10 + 90 = 100

What calculation do the ten frames below represent?
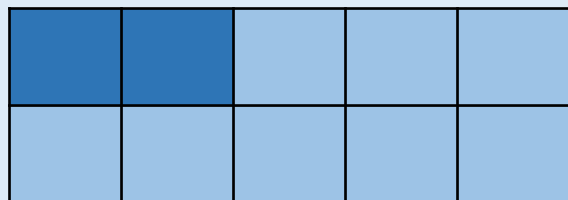
20 + 80 = 100
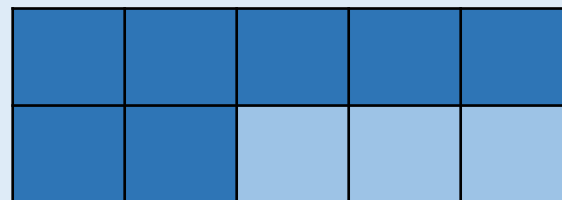
70 + 30 = 100

Bonds to 100 (Tens)

Match the 10 frames to the sentences below:
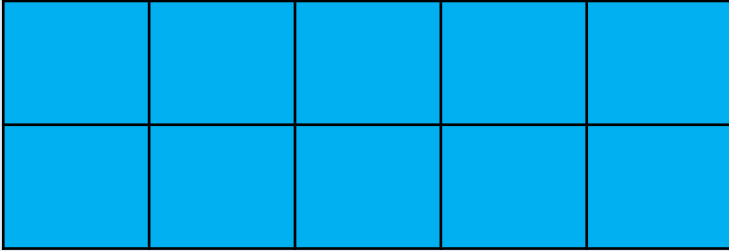
One hundred equals eighty plus twenty
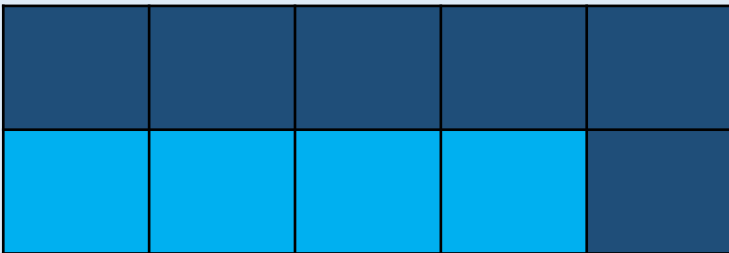
$$100 = 100 + 0$$

$$40 + 60 = 100$$

What do the different colours represent?

Bonds to 100 (Tens)
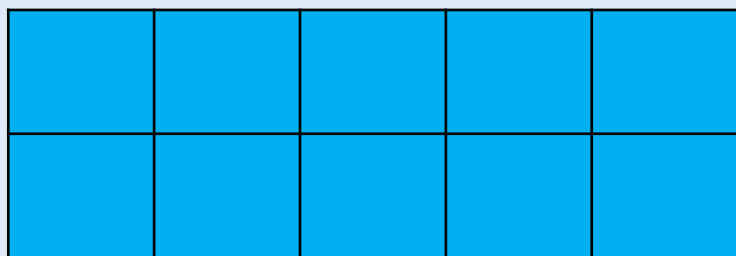
Match the 10 frames to the sentences below:

One hundred equals eighty plus twenty
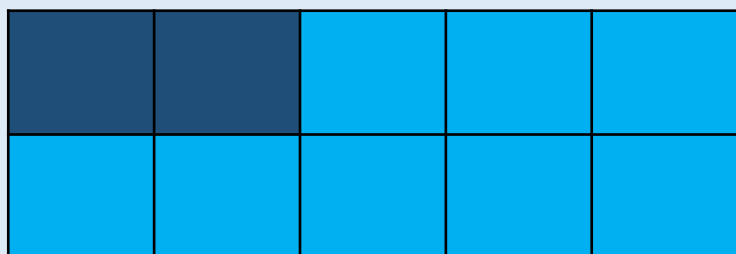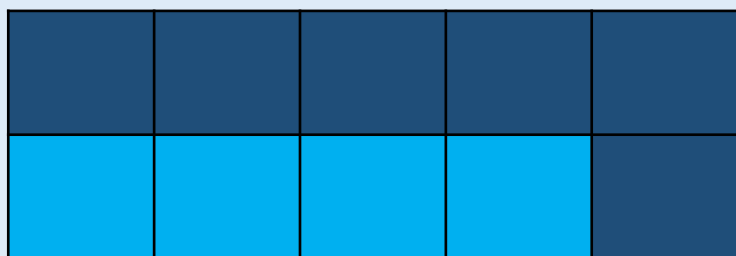
100 = 100 + 0

40 + 60 = 100

Match the 10 frames to the sentences below:
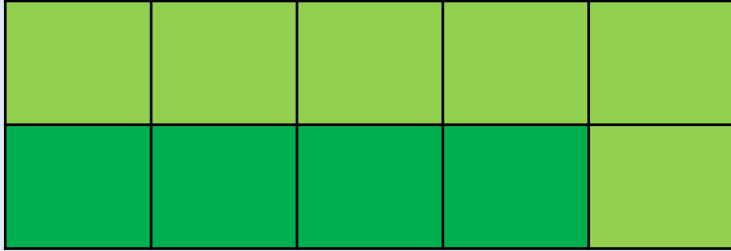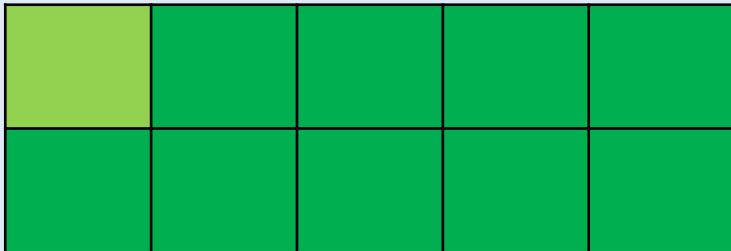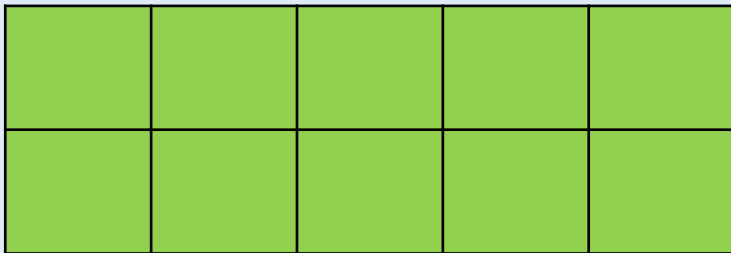
100 = 90 + 10

100 = 100 + 0

One hundred equals sixty and forty

What do the different colours represent?

Bonds to 100 (Tens)

Match the 10 frames to the sentences below:
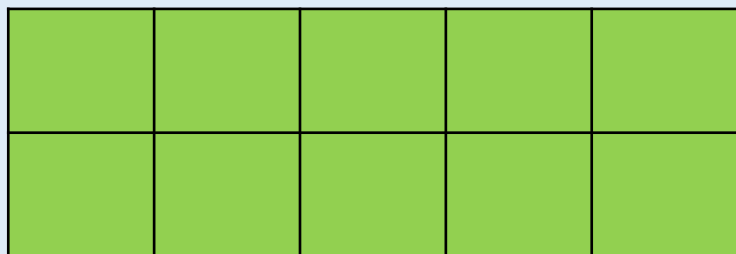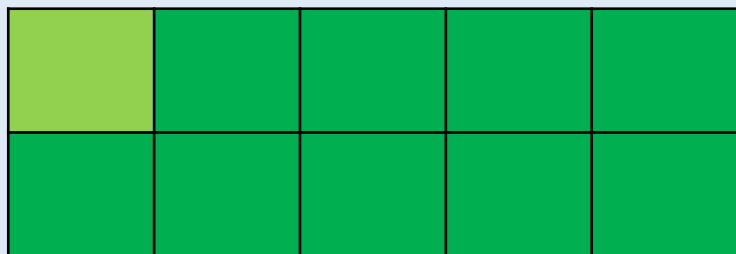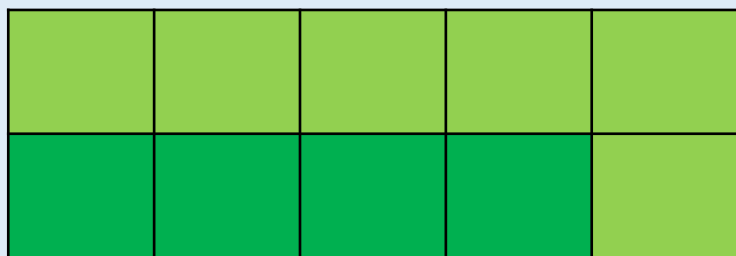
100 = 90 + 10

100 = 100 + 0

One hundred equals sixty and forty

Fill in the missing numbers.

$2 + 6 = 8$ $20 + 60 =$ ___

$2\_\_ + \_0 = 80$ $80 = \_0 + 6\_\_$

What does this represent?

Bonds to 100 (Tens)

Fill in the missing numbers.

$2 + 6 = 8$

$20 + 60 = \underline{80}$

$2\underline{0} + \underline{6}0 = 80$

$80 = \underline{2}0 + 6\underline{0}$

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Bonds to 100 (Tens)

Fill in the missing numbers.

$3 + 4 = 7$

$1 + 8 = 9$

$30 + 40 = 70$

$3\boxed{} + \boxed{}0 = 70$

$1\boxed{} + \boxed{}0 = 90$

$70 = \boxed{}0 + 4\boxed{}$

$6 + 2 = \underline{}$

$3 + 4 = \underline{}$

$\underline{}0 + 2\underline{} = 80$

$\underline{} + \underline{} = 70$

Bonds to 100 (Tens)

Fill in the missing numbers.

$3 + 4 = 7$ $1 + 8 = 9$ $30 + 40 = 70$

$3\;\boxed{0}\; + \boxed{4}\; 0 = 70$ $1\;\boxed{0}\; + \boxed{8}\; 0 = 90$ $70 = \boxed{3}\; 0\; + \; 4\boxed{0}$

$6 + 2 = \underline{\;\;8\;\;}$ $3 + 4 = \underline{\;\;7\;\;}$

$\underline{\;6\;}\,0\; + \; 2\underline{\;0\;} = 80$ $\underline{\;30\;}\; + \; \underline{\;40\;} = 70$

Continue the pattern.

$$90 = 100 - 10$$
$$80 = 100 - 20$$

Can you make up a similar pattern starting with the numbers 60, 30 and 90?

What does this represent?

Bonds to 100 (Tens)

Continue the pattern.

90 = 100 − 10

80 = 100 − 20

70 = 100 − 30

60 = 100 − 40

50 = 100 − 50

40 = 100 − 60

...

Rosie

There are 10 different number bonds to 80 using multiples of 10.

There are 5 bonds.

Tia

Who is correct? Can you help the person who is wrong to understand their mistake?

Rosie

There are 10 different number bonds to 80 using multiples of 10.

There are 5 bonds.

Tia

Tia is correct because 0 + 80 is the same as 80 + 0. Rosie has repeated her answers the other way around.

Using multiples of 10, how many number bonds are there for the following numbers?

40   50   60   70

What do you notice about the amount of bonds for each number? If 80 has 5 bonds, predict how many 90 would have.

Using multiples of 10, how many number bonds are there for the following numbers?

40   50   60   70

40 and 50 both have 3.

60 and 70 both have 4.

When the tens digit is odd it has the same number of bonds as the previous tens number. 90 would also have 5.
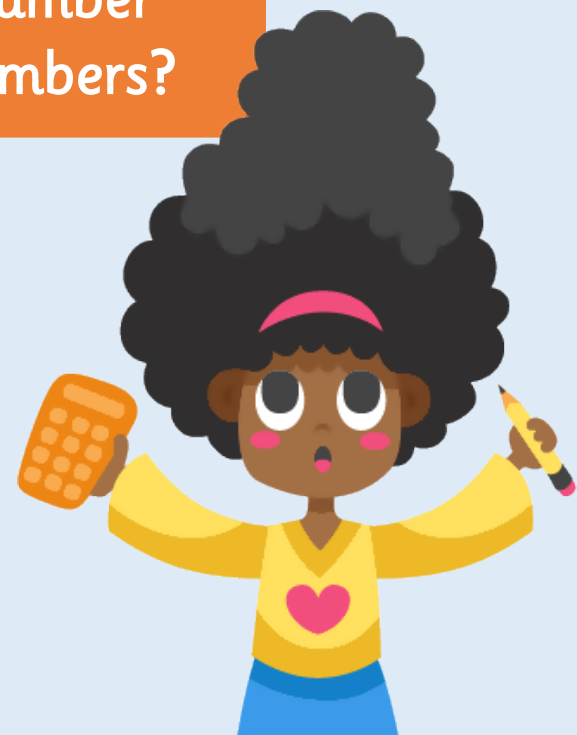
Bonds to 100 (Tens)

Squares are worth 20.
Triangles are worth 30.
Circles are worth 40.
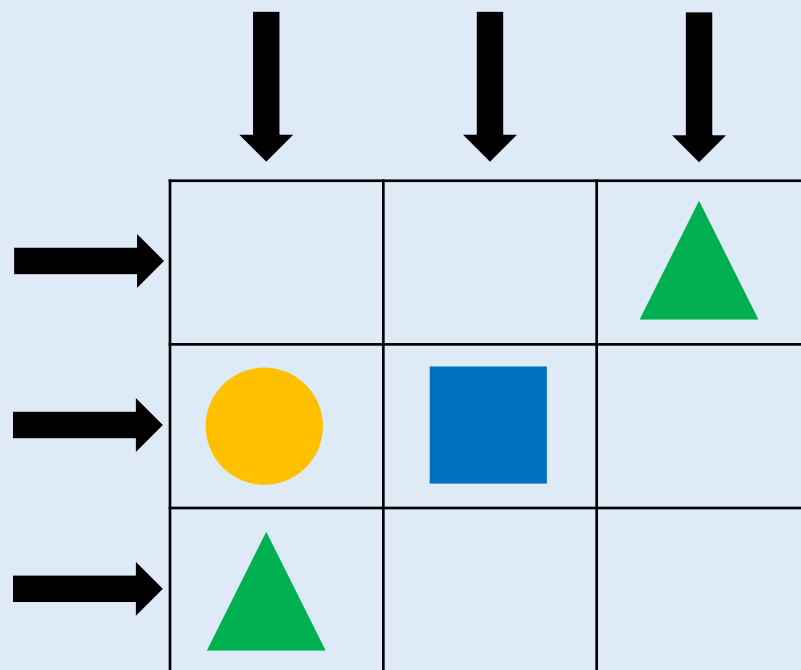
Can you complete the grid above so that all horizontal and vertical lines equal 90?

Can children create another pattern on an empty grid where each line equals 90?

How many possible ways are there to solve this?

Squares are worth 20.
Triangles are worth 30.
Circles are worth 40.

Lots of possible solutions available.

Bonds to 100 (Tens)

What does the word multiple mean?

Why is it different to a normal 10 frame?

What patterns can you see?

Add and Subtract 1s
2

Fluency Teaching Slides

Create sentences based on the picture.

Example:

There are 4 children playing in a park. One more child joins them so there will be 5 children playing together.

What happens when we add 2?

Add and Subtract 1s

Create sentences based on the picture.

There are 2 girls just standing in the park.
One girl joins them so there will be 3 girls.

Create sentences based on the picture.
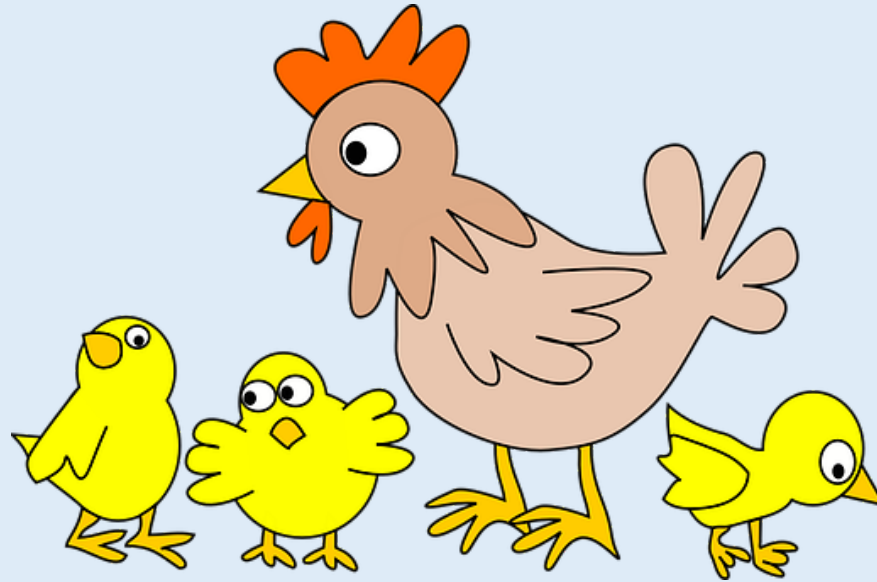
Example:
There are 3 chicks. One walks away so there are now 2 chicks left.

Create sentences based on the picture.
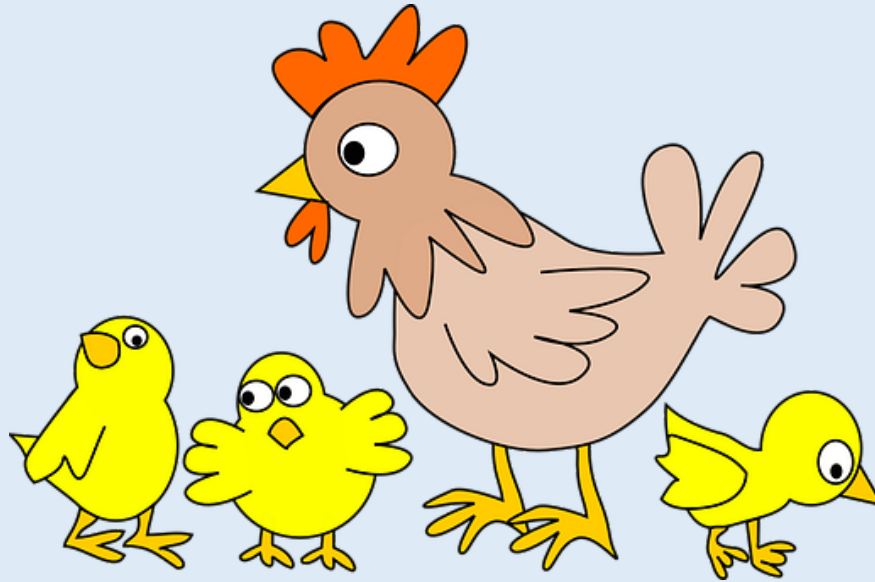
There are 3 chicks.
Two walk away so there is only one chick left.

Continue the pattern.

$$22 = 29 - 7$$

$$22 = 28 - 6$$

Can you create an addition pattern by adding in ones and starting at the number 13?

? *What is the link between adding 1 and adding 2?*

Add and Subtract 1s

Continue the pattern.

22 = 29 – 7

22 = 28 – 6

22 = 27 – 5

22 = 26 – 4

22 = 25 – 3

22 = 24 – 2

…

22 = 13 + 9

22 = 14 + 8

22 = 15 + 7

22 = 16 + 6

22 = 17 + 5

22 = 18 + 4

…

Add and Subtract 1s

Continue the pattern.

$$21 = 29 - 8$$

$$21 = 28 - 7$$

Can you create an addition pattern by adding in ones and starting at the number 14?

Continue the pattern.

21 = 29 – 8   21 = 14 + 7

21 = 28 – 7   21 = 15 + 6

21 = 27 – 6   21 = 16 + 5

21 = 26 – 5   21 = 17 + 4

21 = 25 – 4   21 = 18 + 3

21 = 24 – 3   21 = 19 + 2

...   ...

Continue the number tracks below.

| 31 | | | 34 | | |

| | | 45 | | | 48 |

| | | | | 67 | |

| | 13 | | | | |

What is the link between adding 1 and adding 2?

Add and Subtract 1s

Continue the number tracks below.

31	32	33	34	35	36

43	44	45	46	47	48

63	64	65	66	67	68

12	13	14	15	16	17

Add and Subtract 1s

Continue the number tracks below.

22				26		

		53				57

					48	

	12					

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Add and Subtract 1s

Continue the number tracks below.

22	23	24	25	26	27	28

51	52	53	54	55	56	57

43	44	45	46	47	48	49

11	12	13	14	15	16	17

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True or False?

These four calculations have the same answer.

$$1 + 5 + 2 \qquad\qquad 5 + 2 + 1$$

$$2 + 5 + 1 \qquad\qquad 5 + 1 + 2$$

These four calculations have the same answer.

$$8 - 3 - 2 \qquad\qquad 2 - 3 - 8$$

$$3 - 2 - 8 \qquad\qquad 8 - 2 - 3$$

True or False?

These four calculations have the same answer.

$$1 + 5 + 2 \qquad\qquad 5 + 2 + 1$$

$$2 + 5 + 1 \qquad\qquad 5 + 1 + 2$$

True, because they are all equal 8 and addition is commutative.

These four calculations have the same answer.

$$8 - 3 - 2 \qquad\qquad 2 - 3 - 8$$

$$3 - 2 - 8 \qquad\qquad 8 - 2 - 3$$

False, because subtraction isn't commutative.

Zach lives 4km away from school. Leanna lives 3km away from school in the same direction.
What is the distance between Zach and Leanna's houses?
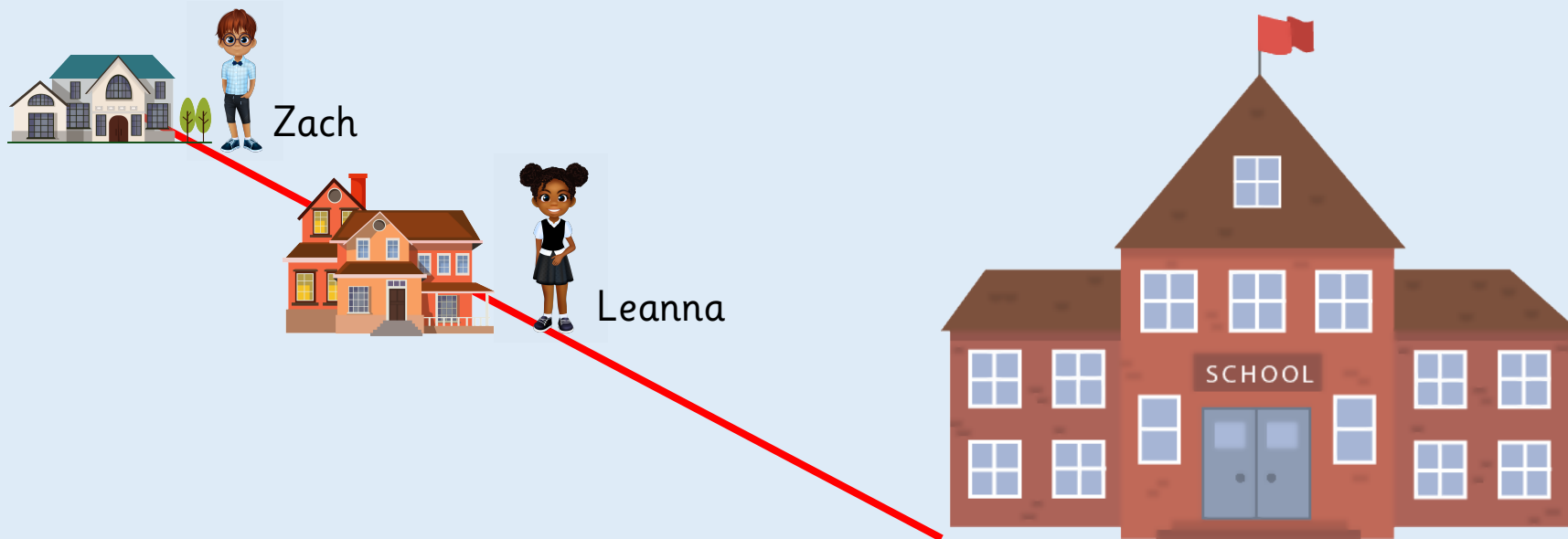
Zach

Leanna

SCHOOL

After travelling to and from school, Zach thinks that he will walk 1km more than Leanna. Is he correct? Explain your answer.
What will be the difference in distance walked after 2 school days?

Zach lives 4km away from school. Leanna lives 3km away from school in the same direction.
What is the distance between Zach and Leanna's houses?

Zach

Leanna

1km
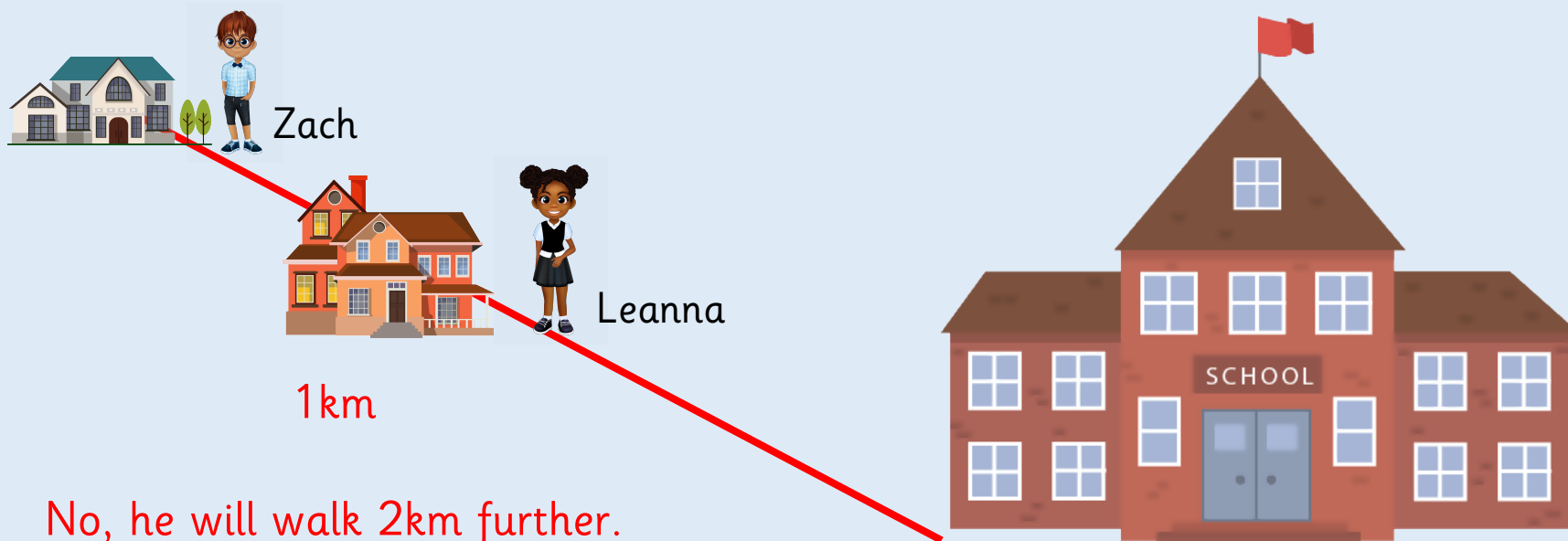
No, he will walk 2km further.
1km on the way to school and
1km on the way home.

4km

What happens when we add 2?

What is the link between adding 1 and adding 2?

What about if we want to add 3?

How can a bead string help when you are adding 1,2 or 3?

Where will be the best place to start on each number track? Why?

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10 More and 10 Less

2

Fluency Teaching Slides

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10 More and 10 Less

Continue the number tracks below.

10	20	30			

			35	45	55			

What's the same?

10 More and 10 Less

Continue the number tracks below.

10	20	30	40	50	60

5	15	25	35	45	55	65	75	85

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10 More and 10 Less

Continue the number tracks below.

	21	31	41			

2		6		10		

	10			25		

10 More and 10 Less

Continue the number tracks below.

11	21	31	41	51	61	71

2	4	6	8	10	12	14

5	10	15	20	25	30	35

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Using a 100 square, circle the number that is 10 more than 27. Circle the number that is 10 less than 27. Repeat in different colours for different numbers. What do you notice?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

What's the different?

Using a 100 square, circle the number that is 10 more than 27. Circle the number that is 10 less than 27. Repeat in different colours for different numbers. What do you notice?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Using a 100 square, circle the number that is 10 more than 34. Circle the number that is 10 less than 34. Repeat in different colours for different numbers. What do you notice?

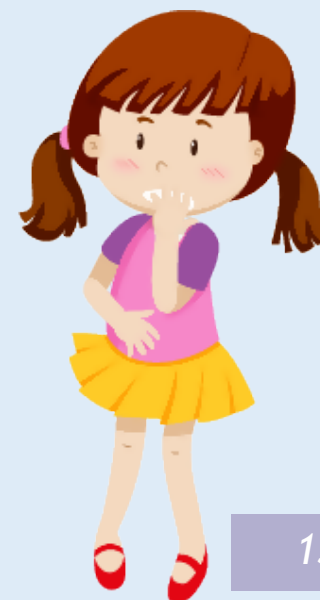| 1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

10 More and 10 Less

Using a 100 square, circle the number that is 10 more than 34. Circle the number that is 10 less than 34. Repeat in different colours for different numbers. What do you notice?
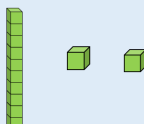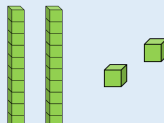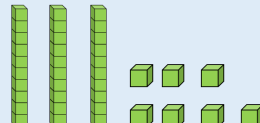
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

10 More and 10 Less

Using concrete materials, complete the missing boxes.

10 Less	Number	10 More
2	12	22
	37	
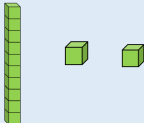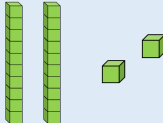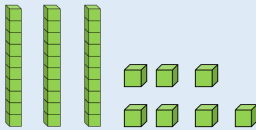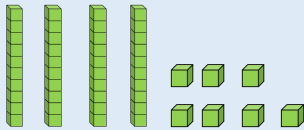
What's the same? What's different?

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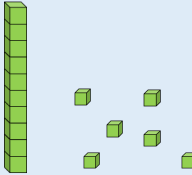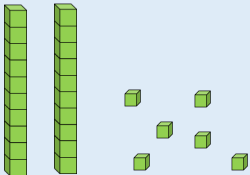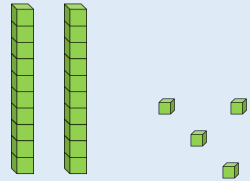
Using concrete materials, complete the missing boxes.

10 Less	Number	10 More
2	12	22
27	37	47
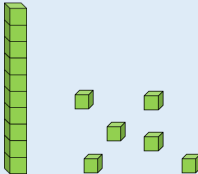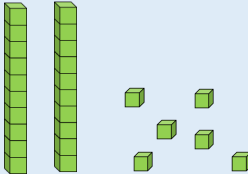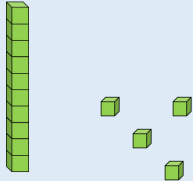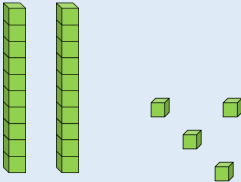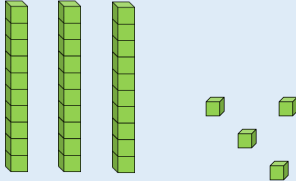
Using concrete materials, complete the missing boxes.

10 less		10 more
6	16	26
	24	

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10 More and 10 Less

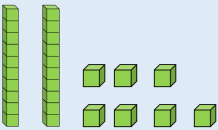Using concrete materials, complete the missing boxes.

10 less		10 more
6	16	26
14	24	34

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SALE

10p

17p

30p

60p

The cost of each piece of fruit is reduced by 5p.

What are the new prices?

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SALE

10p

17p

30p

60p
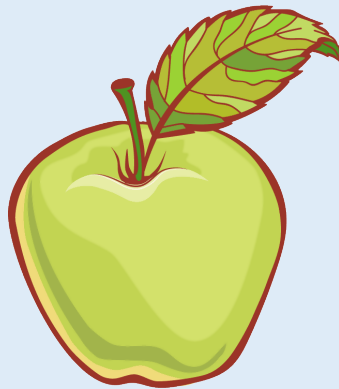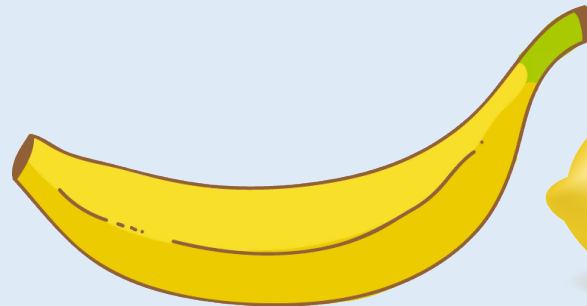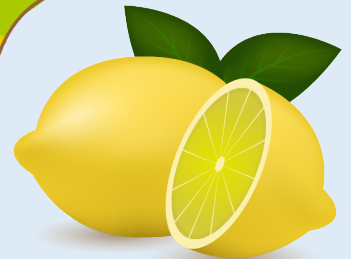
The cost of each piece of fruit is reduced by 5p.

Red Apple 5p
Green Apple 12p
Banana 25p
Lemon 55p

I know that 10 more than 62 is 72 because I only have to look at the tens digit.

Zach

Is he correct? Explain your answer.

Rosie is counting backwards in 10s.

Sixty-nine, fifty-nine, forty-nine and then....
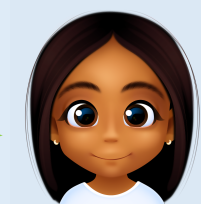
Rosie

What number comes next and why?

Zach

I know that 10 more than 62 is 72 because I only have to look at the tens digit.

Yes, because when you add ten you aren't adding ones.

Rosie is counting backwards in 10s.

Sixty-nine, fifty-nine, forty-nine and then....
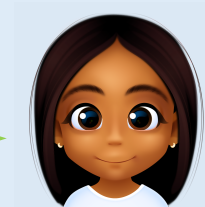
Rosie

39 because you take one ten away from 49.

Class 3 gives two of their full packets of crayons away. Each full packet has 10 crayons.

How many crayons do they have left?
Explain your reasoning.

Class 3 gives two of their full packets of crayons away. Each full packet has 10 crayons.

33

They will have three full packs left which is three tens, and three crayon which represents three ones.

crayons 10
crayons 10
crayons 10

When you look at a hundred square, what do you notice about the numbers that are ten more and ten less than 27?

Which direction will your finger move on a hundred square if you are finding ten more/ ten less?

Add and Subtract 10s
2

Fluency Teaching Slides

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Continue the number track by adding 20 each time.

23				

What is the number sentence that will help you find the first missing number?

Add and Subtract 10s

Continue the number track by adding 20 each time.

23	43	63	83	103

Continue the number track by adding 20 each time.

24				

29				

22				

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Add and Subtract 10s

Continue the number track by adding 20 each time.

24	44	64	84	104

29	49	69	89	109

22	42	62	82	102

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Add and Subtract 10s

Use the place value charts and concrete materials to complete the calculations.

Tens	Ones

$$\begin{array}{r} 2\ 3 \\ +\ 4\ 0 \\ \hline \\ \hline \end{array}$$
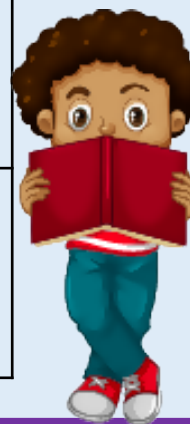
? *Why is there a blank ones box?*

Add and Subtract 10s

Use the place value charts and concrete materials to complete the calculations.

Tens	Ones
6	3

$$
\begin{array}{r}
2\ 3 \\
+\ 4\ 0 \\
\hline
6\ 3 \\
\hline
\end{array}
$$

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Add and Subtract 10s

Use the place value charts and concrete materials to complete the calculations.

Tens	Ones

$$\begin{array}{r} 5\ 6 \\ +\ 3\ 0 \\ \hline \\ \hline \end{array}$$
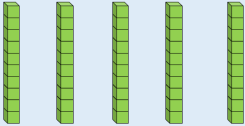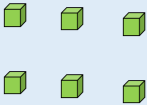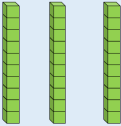
Which column changes? Which columns stays the same?

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Add and Subtract 10s

Use the place value charts and concrete materials to complete the calculations.

Tens	Ones
8	6
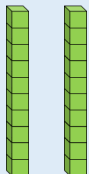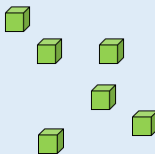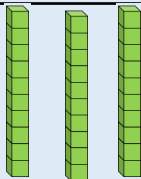
$$\begin{array}{r} 5\ 6 \\ +\ 3\ 0 \\ \hline 8\ 6 \\ \hline \end{array}$$

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Add and Subtract 10s

Use the place value charts and concrete materials to complete the calculations.

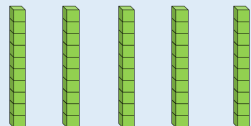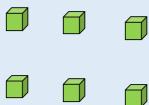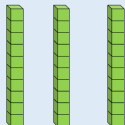| Tens	Ones

$$\begin{array}{r} 26 \\ +\ 30 \\ \hline \\ \hline \end{array}$$
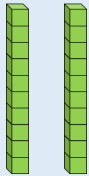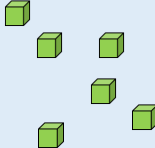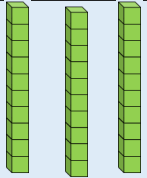
Add and Subtract 10s

Use the place value charts and concrete materials to complete the calculations.

Tens	Ones
5	6

$$\begin{array}{r} 26 \\ +\ 30 \\ \hline 56 \end{array}$$

Malachi has two spare violet beads.
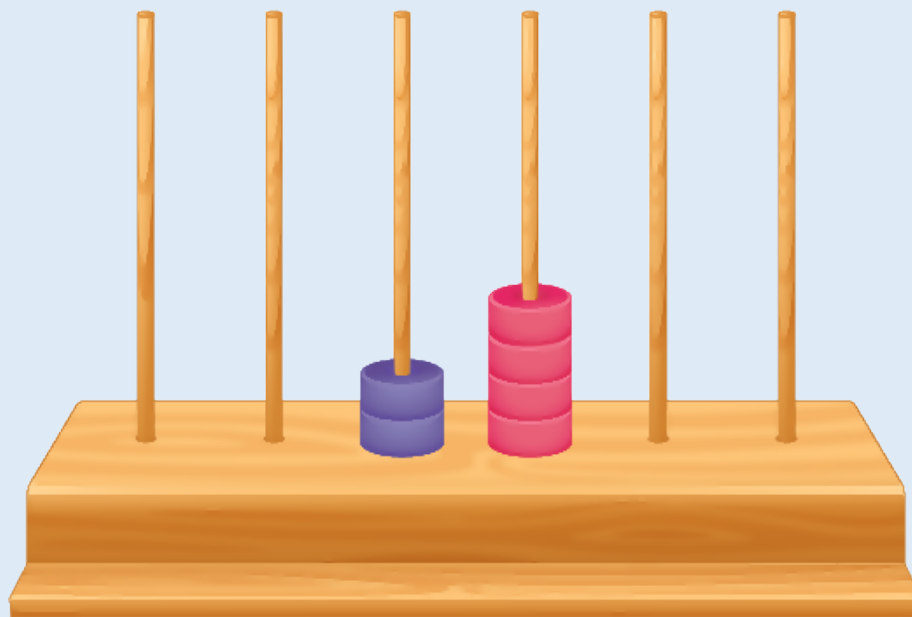
What numbers could he make?
Explain your answer.

Malachi has two spare violet beads.

34

44
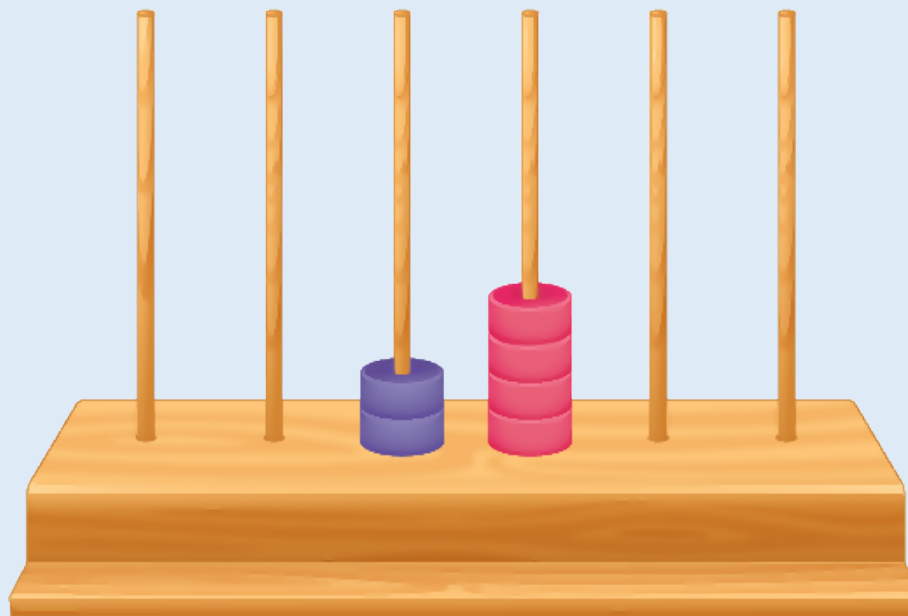
He doesn't have to use all of the beads.

Here are Class 1's crayons.
They are given a new box of 10 each day for a week.

How many crayons do they have at the end of the week?

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Here are Class 1's crayons.
They are given a new box of 10 each day for a week.
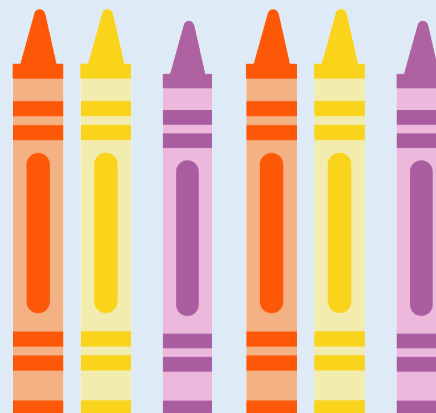
Discussion could be had about whether it's
a full week or a school week.

Answers would be 86 or 66 respectively.

Add and Subtract 10s
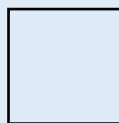
Circles represent 10
Triangles represent 20
Squares represent 40
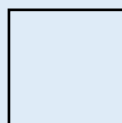
What is the value of each row and column?

Circles represent 10
Triangles represent 20
Squares represent 40

Rows
(top to bottom)
70
70
60

Columns
(left to right)
70
70
60

Add and Subtract 10s

Which column changes when you add/ subtract 10?

Which column stays the same?

Add 2-digits and 1-digit 2

Add 2-digits and 1-digit

Can you put the larger number in your head and count on the smaller number? Start at 17 and count on 5.

$$17 + 5 =$$

+1 +1 +1 +1 +1

17   18   19   20   21   22

How many ones do we have? How many tens do we have?

Can you put the larger number in your head and count on the smaller number? Start at 17 and count on 5.

$$17 + 5 = 22$$

+1   +1   +1   +1   +1

17   18   19   20   21   22

Can you put the larger number in your head and count on the smaller number? Start at 16 and count on 6.

$$16 + 6 =$$

+1   +1   +1   +1   +1   +1

16   17   18   19   20   21   22

Add 2-digits and 1-digit

Can you put the larger number in your head and count on the smaller number? Start at 16 and count on 6.

16 + 6 = 22

+1 +1 +1 +1 +1 +1

16 17 18 19 20 21 22

Can we use number bonds to solve the addition more efficiently? We can partition 5 into 3 and 2 and use this to bridge the 10.

$$17 + 5 =$$

+3   +2

17   20   22
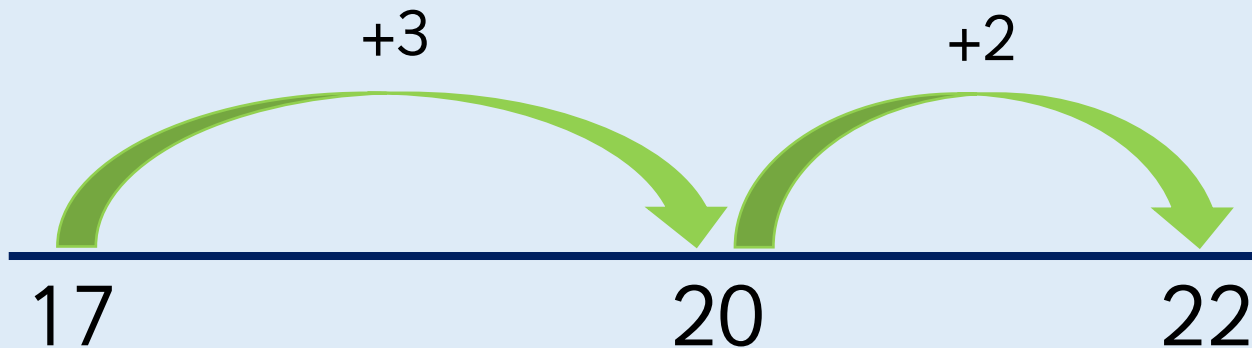
Using Base 10, can you partition your numbers?

Add 2-digits and 1-digit

Can we use number bonds to solve the addition more efficiently? We can partition 5 into 3 and 2 and use this to bridge the 10.

+3 +2

17 20 22

17 + 3 = 20
20 + 2 = 22
So,
17 + 5 = 22

Add 2-digits and 1-digit

Can we use number bonds to solve the addition more efficiently? We can partition 6 into 4 and 2 and use this to bridge the 10.

16 + 6 =
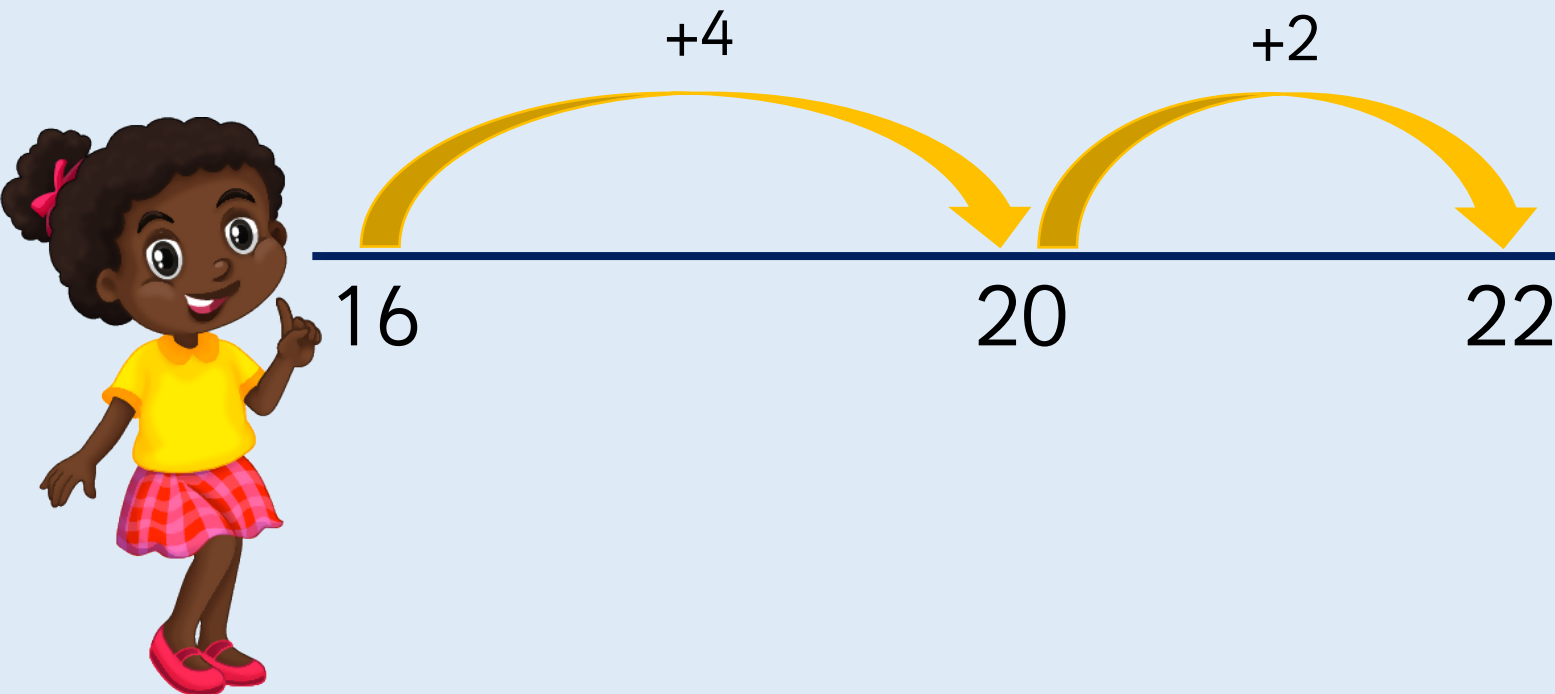
+4   +2

16   20   22

Add 2-digits and 1-digit

Can we use number bonds to solve the addition more efficiently? We can partition 6 into 4 and 2 and use this to bridge the 10.

+4   +2

16   20   22
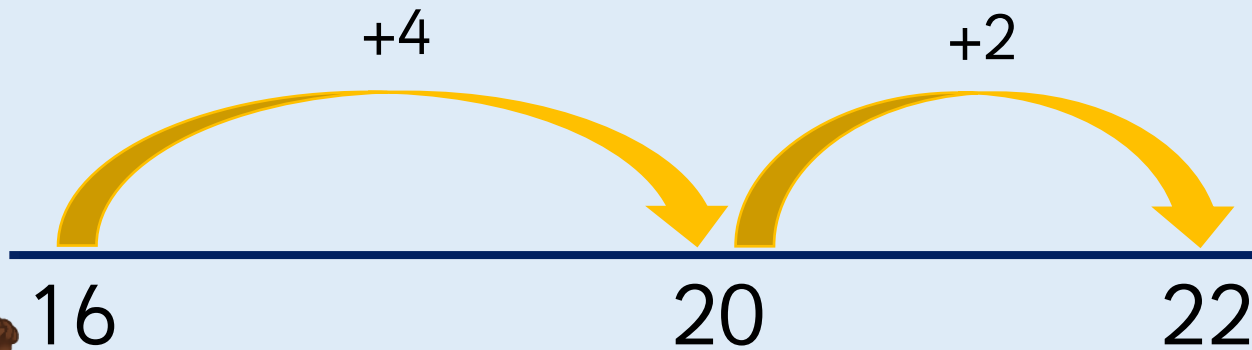
16 + 4 = 20
20 + 2 = 22
So,
          16 + 6 = 22

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Add 2-digits and 1-digit

Find the total of 28 and 7
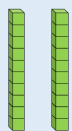
Tens   Ones

$$
\begin{array}{r}
2\ 8 \\
+\quad 7 \\
\hline
3\ 5 \\
\hline
1
\end{array}
$$

- Partition both the numbers.
- Add together the ones.
- Have we got 10 ones?
- Exchange 10 ones for 1 ten.
- How many ones do we have?
- How many tens do we have?

Can you draw the Base 10 and show the addition pictorially?

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Add 2-digits and 1-digit

Find the total of 28 and 7

Tens   Ones

$$
\begin{array}{r}
2\ 8 \\
+\ \ \ 7 \\
\hline
3\ 5 \\
\end{array}
$$

1

- Partition both the numbers.
- Add together the ones.
- Have we got 10 ones? Yes
- Exchange 10 ones for 1 ten.
- How many ones do we have? 5 ones
- How many tens do we have? 3 tens

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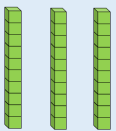
Add 2-digits and 1-digit

Find the total of 26 and 7

- Partition both the numbers.
- Add together the ones.
- Have we got 10 ones?
- Exchange 10 ones for 1 ten.
- How many ones do we have?
- How many tens do we have?

Tens   Ones
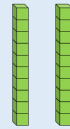
$$\begin{array}{r} 2\ 6 \\ +\quad 8 \\ \hline 3\ 4 \\ \end{array}$$

1
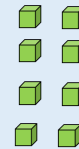
Add 2-digits and 1-digit

Find the total of 28 and 7

- Partition both the numbers.
- Add together the ones.
- Have we got 10 ones? Yes
- Exchange 10 ones for 1 ten.
- How many ones do we have? 4 ones
- How many tens do we have? 3 tens

Tens   Ones

$$
\begin{array}{cc}
2 & 6 \\
+ & 8 \\
\hline
3 & 4 \\
\end{array}
$$

1

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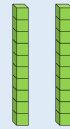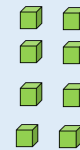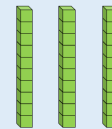
Always, sometimes, never.

Leanna

I am thinking of a two-digit number, if I add ones to it, I will only need to change the ones digit.

Explain your answer.

Always, sometimes, never.

Leanna

I am thinking of two-digit number, if I add ones to it, I will only need to change the ones digit.

Sometimes, because if your ones total 10 or more you will have to exchange them which will change the tens digit.

Here are three digit cards. Place the digit cards in the number sentence.

5   6   7

☐☐ + ☐ =

How many different totals can you find? What is the smallest total? What is the largest total?

Here are three digit cards. Place the digit cards in the number sentence.

5 6 7

56 + 7 = 63
57 + 6 = 63
65 + 7 = 72
67 + 5 = 72
75 + 6 = 81
76 + 5 = 81
63 is the smallest and 81 is the largest.

Using Base 10, can you partition your numbers?

Can we exchange 10 ones for one ten?

How many ones do we have? How many tens do we have?

Can you draw the Base 10 and
show the addition pictorially?

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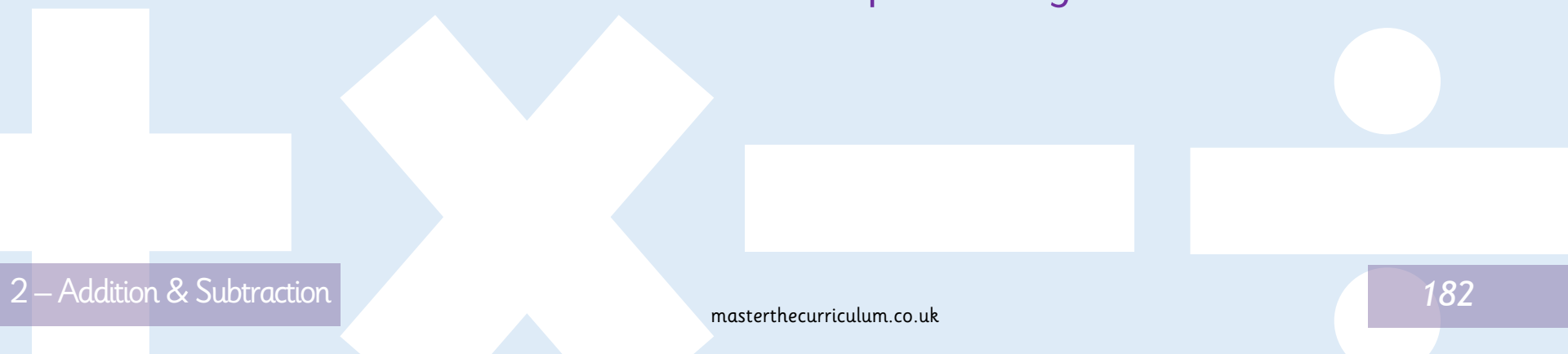
Subtract 1-digit from 2-digits

2

Fluency Teaching Slides

Subtract 1-digit from 2-digits

Can you put the larger number in your head and count back the smaller number? Start at 22 and count back 7.

$$22 - 7 =$$

| -1 | -1 | -1 | -1 | -1 | -1 | -1 |

15　　16　　17　　18　　19　　20　　21　　22

Have we got enough ones to subtract?

Subtract 1-digit from 2-digits

Can you put the larger number in your head and count back the smaller number? Start at 22 and count back 7.

22 – 7 = 15

-1 -1 -1 -1 -1 -1 -1

15 16 17 18 19 20 21 22

Subtract 1-digit from 2-digits

Can you put the larger number in your head and count back the smaller number? Start at 24 and count back 6.

24 – 6 =

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Subtract 1-digit from 2-digits

Can you put the larger number in your head and count back the smaller number? Start at 24 and count back 6.

$$24 - 6 = 18$$

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Can we use number bonds to subtract more efficiently? We can partition 7 into 5 and 2 and use this to bridge the 10.

-5 -2

15   20   22

? *Are we counting backwards or forwards on the number line?*

Subtract 1-digit from 2-digits

Can we use number bonds to subtract more efficiently? We can partition 7 into 5 and 2 and use this to bridge the 10.

-5

-2

15

20

22

22 – 2 = 20

20 – 5 = 15

So,

22 – 7 = 15

Subtract 1-digit from 2-digits

Can we use number bonds to subtract more efficiently? We can partition 6 into 4 and 2 and use this to bridge the 10.

− 2   − 4

18   20   24

Subtract 1-digit from 2-digits

Can we use number bonds to subtract more efficiently? We can partition 6 into 4 and 2 and use this to bridge the 10.

-2 -4

18   20   24

24 − 4 = 20
20 − 2 = 18
So,

24 − 6 = 18

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Subtract 1-digit from 2-digits

Subtract 8 from 24

Tens   Ones

$$\begin{array}{r} 2\ 4 \\ -\quad 8 \\ \hline \\ \hline \end{array}$$

- Can we take 8 ones away?
- Exchange one ten for ten ones.
- Take away 8 ones.
- Can you write this using the column method?

Are we counting backwards of forwards on the number line?

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Subtract 1-digit from 2-digits

Subtract 8 from 24

Tens   Ones

$$
\begin{array}{r}
\overset{1}{\cancel{2}} \ \ \overset{1}{4} \\
- \quad 8 \\
\hline
1 \ 6 \\
\hline
\end{array}
$$

- Can we take 8 ones away?
- Exchange one ten for ten ones.
- Take away 8 ones.
- Can you write this using the column method?

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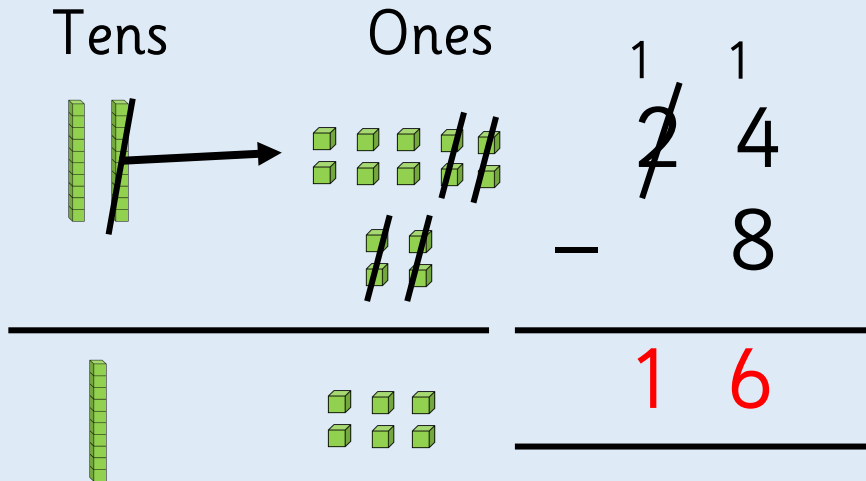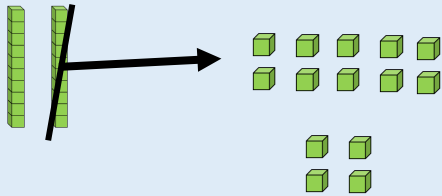
Subtract 1-digit from 2-digits

Subtract 6 from 24

- Can we take 6 ones away?
- Exchange one ten for ten ones.
- Take away 6 ones.
- Can you write this using the column method?

Tens   Ones

2 4

–   6

Subtract 1-digit from 2-digits

Subtract 6 from 24

Tens   Ones

- Can we take 6 ones away?
- Exchange one ten for ten ones.
- Take away 6 ones.
- Can you write this using the column method?

$$\begin{array}{cc} \overset{1}{\cancel{2}} & \overset{1}{4} \\ - & 6 \\ \hline 1 & 8 \end{array}$$

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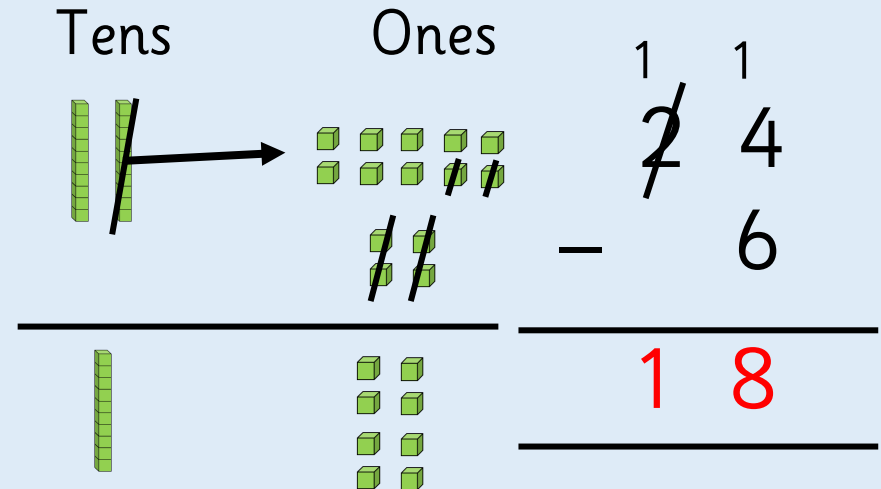
Zach and Tia are solving 24 – 8.
Here are their methods.

Zach

I put 8 in my head and counted on to 24

I put 24 in my head and counted back 8.

Tia

Who's method is the most efficient? Can you explain why? Can you think of another method to solve the subtraction?

Zach and Tia are solving 24 – 8.
Here are their methods.

Zach

I put 8 in my head and counted on to 24

I put 24 in my head and counted back 8.

Tia

Tia's method is most efficient because there are less steps to take. The numbers are quite far apart so Zach's method of finding the difference takes a long time and has more room for error.

Esin is counting back to solve
45 – 7

She counts

45, 44, 43, 42, 41, 40, 39

Is Esin correct? Explain your answer.

Esin is counting back to solve
45 – 7

She counts

45, 44, 43, 42, 41, 40, 39

Esin is not correct as she has included 45 when counting back.

This is a common mistake and can be modelled on a number line.

Subtract 1-digit from 2-digits

Match the number sentences to the number bonds that make the method more efficient.

32 – 5   32 – 2 – 3

32 – 7   33 – 3 – 3

33 – 8   33 – 3 – 5

33 – 6   32 – 2 – 5

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Match the number sentences to the number bonds that make the method more efficient.

$32 - 5$ ⟷ $32 - 2 - 3$

$32 - 7$

$33 - 3 - 3$

$33 - 8$ ⟷ $33 - 3 - 5$

$33 - 6$

$32 - 2 - 5$

Subtract 1-digit from 2-digits

Are we counting backwards or forwards
on the number line?

Have we got enough ones to subtract?

Can we exchange a ten for ten ones?

How can we show the takeaway?
Can we cross out the cubes?

Add 2-digit Numbers (1)

2

Add 2-digit Numbers (1)

Find the sum of 34 and 23

+
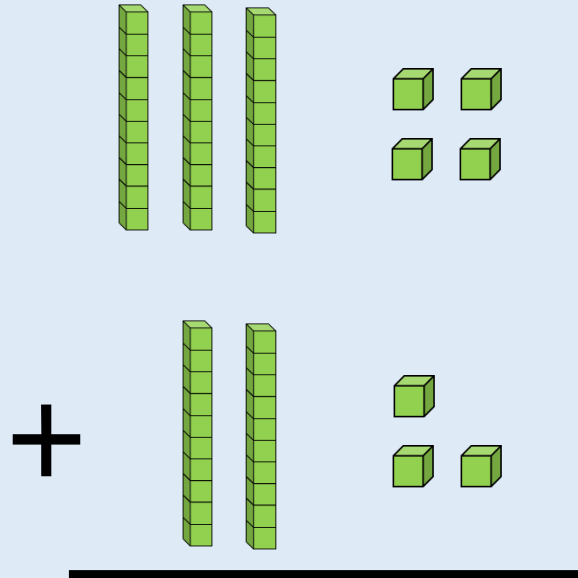
Can you partition the number into tens and ones?

Add 2-digit Numbers (1)
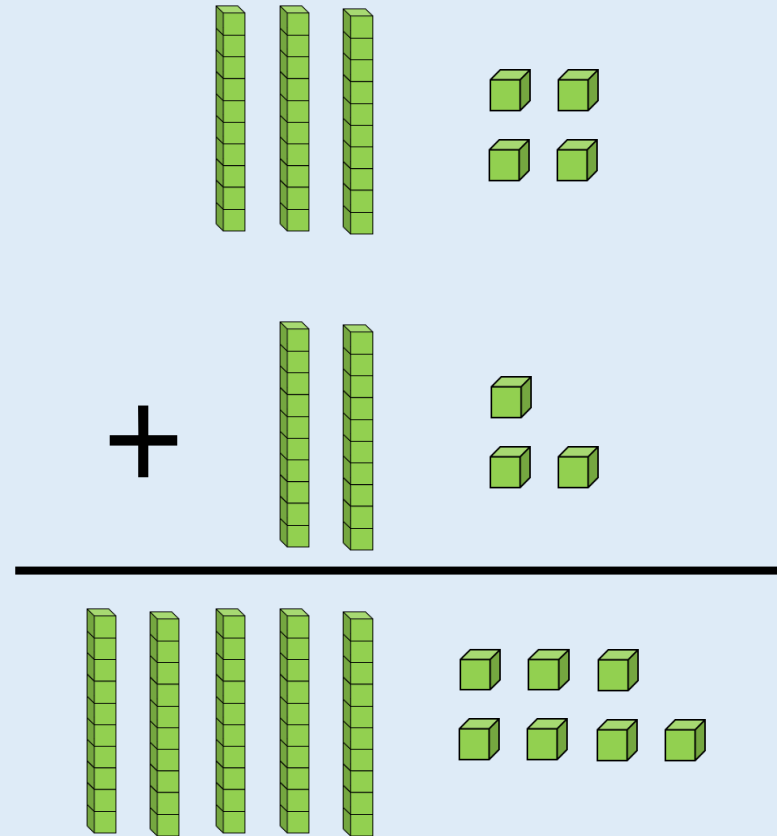
Find the sum of 34 and 23

57

Add 2-digit Numbers (1)

Find the sum of 26 and 31

+

masterthecurriculum.co.uk
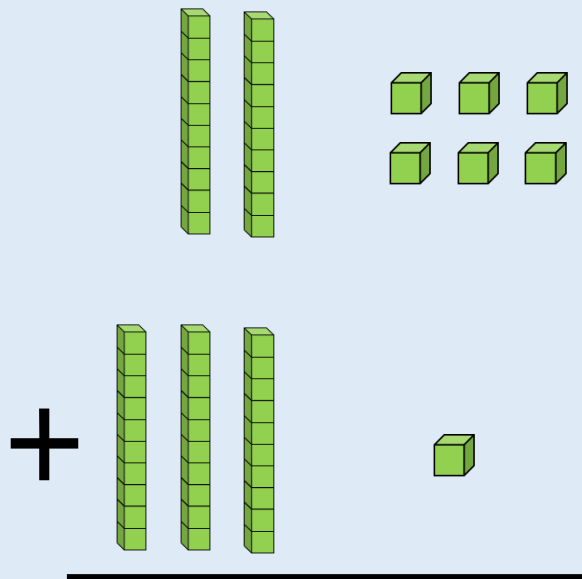
Add 2-digit Numbers (1)

Find the sum of 26 and 31

+

57

mastercurriculum.co.uk
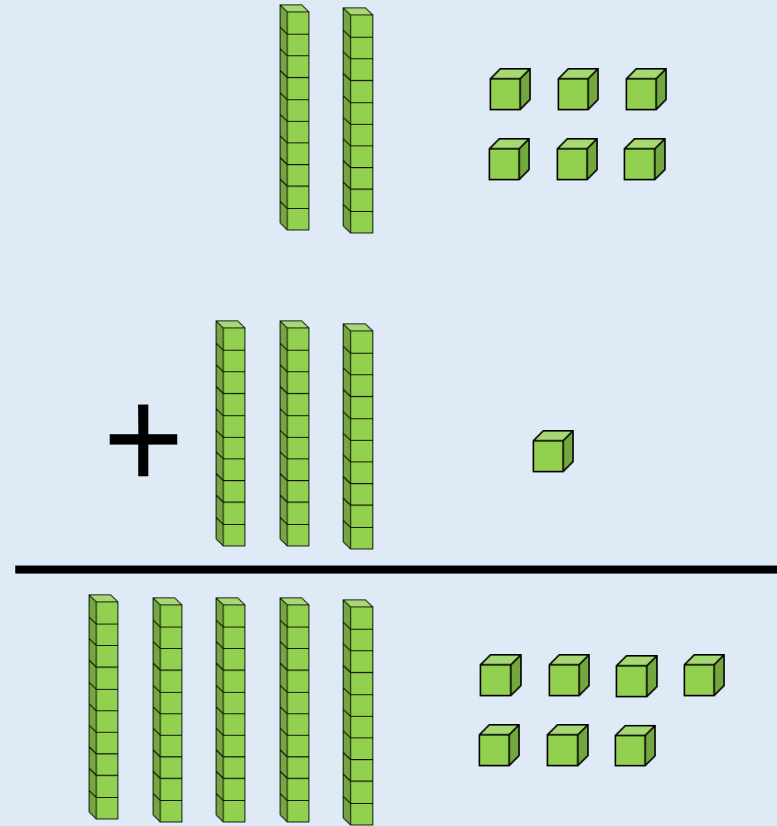
64 + 12 = _____

4 ones + 2 ones = _____

6 tens + 1 ten = _____

____tens + ____ones = _____

Can you show your addition by drawing the Base 10 to help?

64 + 12 = <u>76</u>

4 ones + 2 ones = <u>6 ones</u>

6 tens + 1 ten = <u>7 tens</u>

<u>3</u> tens + <u>10</u> ones = <u>4 tens</u>

54 + 33 = ____

4 ones + 3 ones = _____

5 tens + 3 tens = _____

_____ tens + _____ ones = _____

54 + 33 = <u>87</u>

4 ones + 3 ones = <u>7 ones</u>

5 tens + 3 tens = <u>8 tens</u>

<u>7</u> tens + <u>10</u> ones = <u>8 tens</u>

Rosie has 41 sweets. Zach has 55 sweets.
How many sweets do they have altogether?

Rosie

Zach

Can you represent the problem?

Rosie has 41 sweets. Zach has 55 sweets.
How many sweets do they have altogether?

Total sweets = Rosie's sweets + Zach's sweets
Total sweets = 41 + 55
Total sweets = 96

Rosie and Zach have 96 sweets altogether.

Malachi has 54 marbles. Tia has 23 marbles.
How many marbles do they have altogether?

Malachi

Tia

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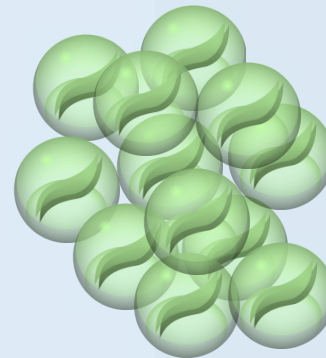
Malachi has 54 marbles. Tia has 23 marbles. How many marbles do they have altogether?

Total marbles = Malachi's marbles + Tia's marbles
Total marbles = 54 + 23
Total marbles = 77

Malachi and Tia have 77 marbles altogether.

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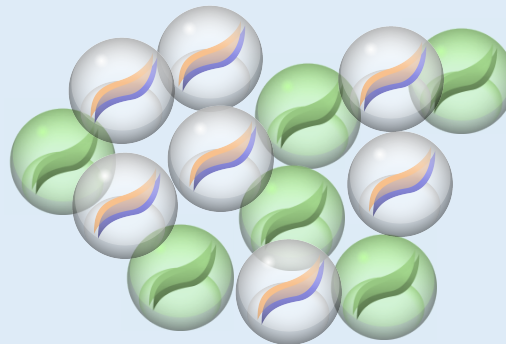
Tia has 11 marbles. Malachi has 12 marbles more than Tia.
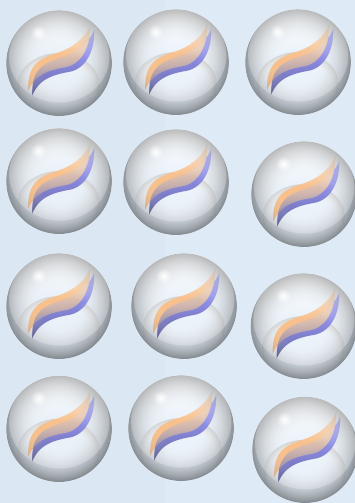
Malachi

Tia

How many marbles do they have altogether?

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Tia has 11 marbles. Malachi has 12 marbles more than Tia.
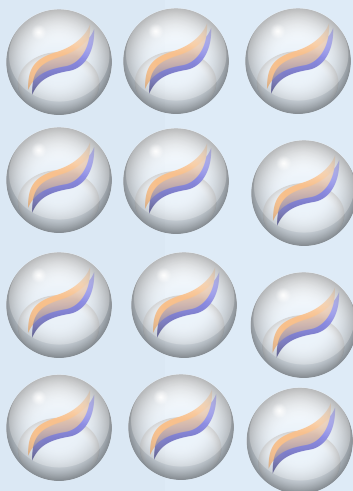
Malachi

Tia
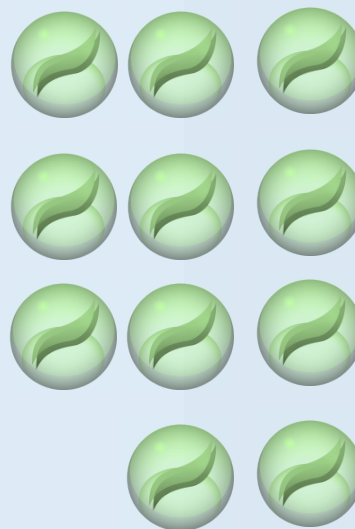
Malachi has 23 marbles. Altogether they have 34 marbles.

What digits could go in the boxes?

$\boxed{}3 + \boxed{}5 = 98$

What digits could go in the boxes?

☐3 + ☐5 = 98

Possible answers:
1 and 8, 2 and 7, 3 and 6, 4 and 5, 5 and 4,
6 and 3, 7 and 2, 8 and 1

Interesting discussion could be had around is
1 and 8 different than 8 and 1?
Etc.

Can you partition the number into tens and ones?

Can you count the ones? Can you count the tens?

Can you show your addition by drawing
the Base 10 to help?

Can you represent the problem?

Add 2-digit Numbers (2)

2

Add 2-digit Numbers (2)

64 + 12 = ____

$$\begin{array}{r} 6\ 4 \\ +\ 1\ 2 \\ \hline 7\ \ 6 \end{array}$$

4 ones + 2 ones = _____

6 tens + 1 ten = _____

___tens + ___ones = _____

Add 2-digit Numbers (2)

64 + 12 = <u>76</u>

$$\begin{array}{r} 6\ 4 \\ +\ 1\ 2 \\ \hline 7\ \ 6 \end{array}$$

4 ones + 2 ones = <u>6 ones /</u> 6

6 tens + 1 ten = <u>7 tens /</u> 70

<u>3</u> tens + <u>10</u> ones = <u>4 tens / 40</u>

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67 + 25 = ____

7 ones + 5 ones = _____

6 tens + 2 tens = _____

_____ tens + _____ ones = _____

$$\begin{array}{r} 6\ 7 \\ +\ 2\ 5 \\ \hline 1\ 2 \\ +\ 8\ 0 \\ \hline 9\ 2 \end{array}$$
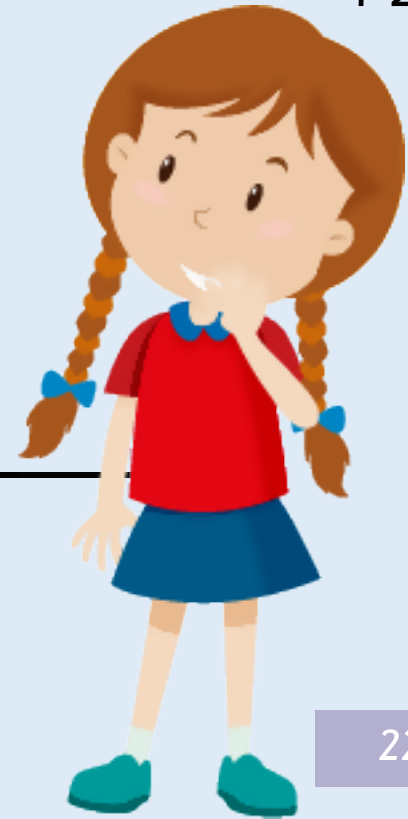
67 + 25 = __92__

7 ones + 5 ones = __1 ten and 2 ones / 12__

6 tens + 2 tens = __8 tens/ 80__

__8__ tens + __12__ ones = __92__

$$\begin{array}{r} 6\ 7 \\ +\ 2\ 5 \\ \hline 1\ 2 \\ +\ 8\ 0 \\ \hline 9\ 2 \end{array}$$

Add 2-digit Numbers (2)
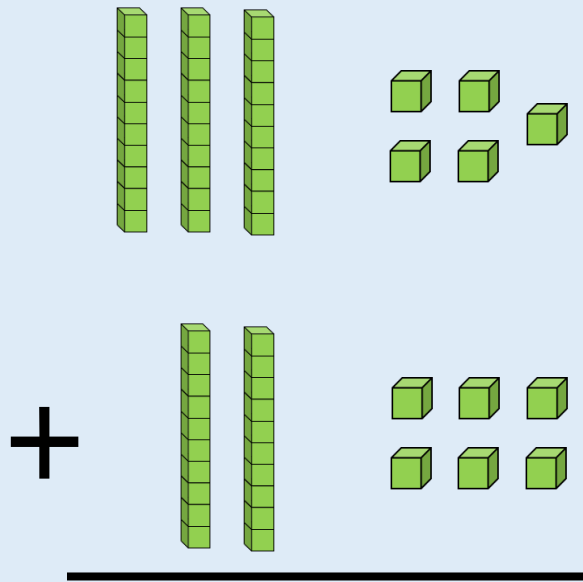
Find the sum of 35 and 26

- Partition both the numbers.
- Add together the ones. Have we got 10 ones?
- Exchange 10 ones for 1 ten.
- How many ones do we have?
- Add together the tens. How many do we have altogether?

Can we exchange ten ones for one ten?

Add 2-digit Numbers (2)

Find the sum of 35 and 26

+
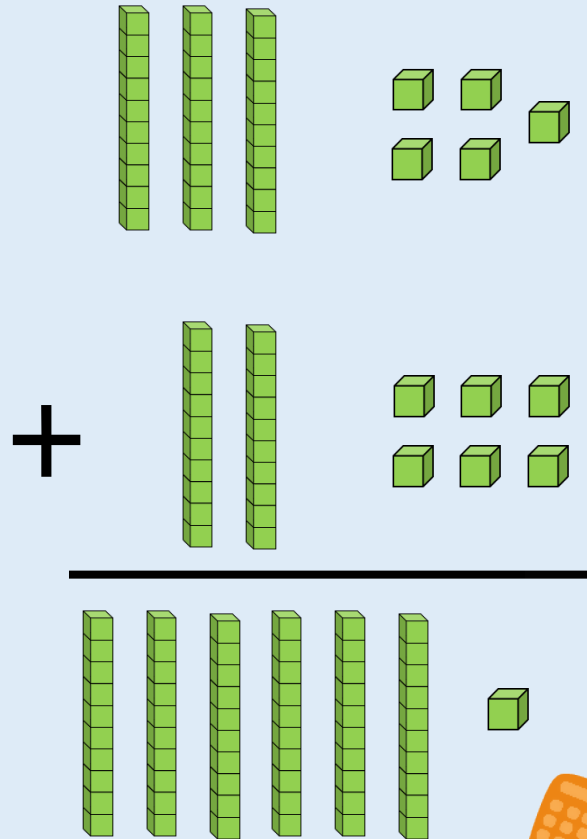
There are 5 tens and 11 ones.
Exchange 10 ones for 1 ten.
So the sum is 61.

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Add 2-digit Numbers (2)

Find the sum of 37 and 28

- Partition both the numbers.
- Add together the ones. Have we got 10 ones?
- Exchange 10 ones for 1 ten.
- How many ones do we have?
- Add together the tens. How many do we have altogether?

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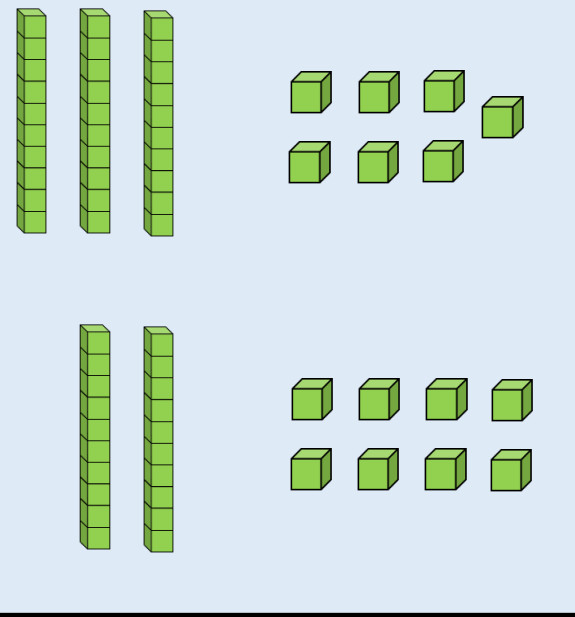
Add 2-digit Numbers (2)

Find the sum of 37 and 28

There are 5 tens and 15 ones.
Exchange 10 ones for 1 ten.
So the sum is 65
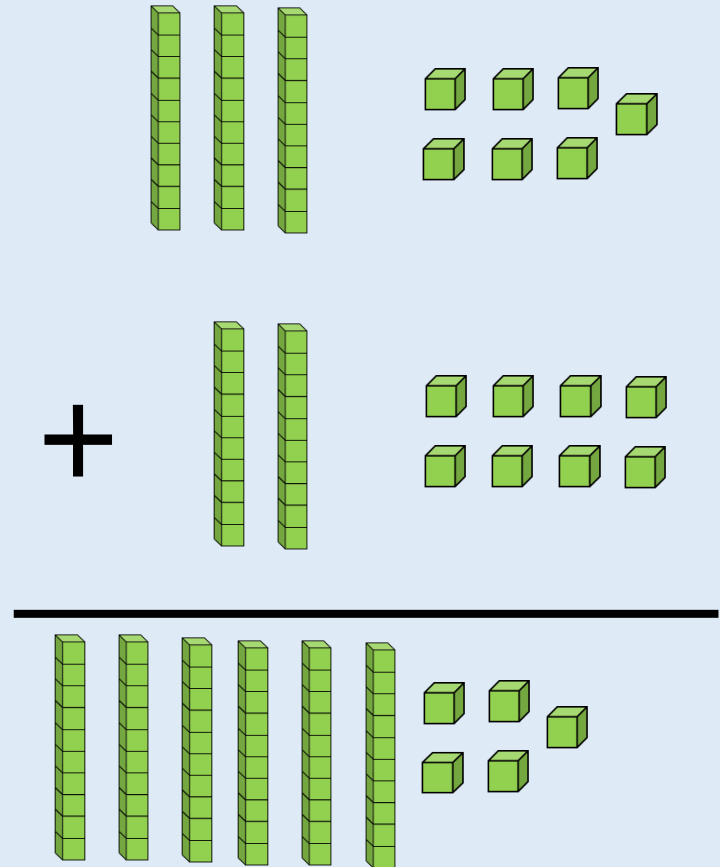
+

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Class 3 has 37 pencils. Class 4 has 43 pencils.
How many pencils do they have altogether?

What is the sum of the numbers?

Class 3 has 37 pencils. Class 4 has 43 pencils.
How many pencils do they have altogether?

Total pencils = class 3 pencils + class 4 pencils
Total pencils = 37 + 43
Total pencils = 80

So, Class 3 and Class 4 have 80 pencils altogether.

Eagle class has 37 glues. Kestrel class have 19 glues. How many glues do they have altogether?

Eagle class has 37 glues. Kestrel class have 19 glues.
How many glues do they have altogether?

Total glue = eagle class glue + kestrel class glue
Total glue = 37 + 19
Total glue = 56

So, Eagle class and Kestrel class have 56 glues altogether.

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Can you create a calculation where there will be an exchange in the ones and your answer will have two ones and be less than 100?

Can you create a calculation where there will be an exchange in the ones and your answer will have two ones and be less than 100?

There are lots of possible solutions.
E.g. 33 + 29 = 62

How many different ways can you solve
18 + 12

Explain your method to a partner. Use concrete or pictorial resources to help explain your method.

How many different ways can you solve
18 + 12

Children might add the ones and then tens.

Children should notice that 2 and 8 are a number bond to 10 which makes the calculation easier to complete mentally.

Find all the possible pairs of numbers that can complete the addition.

$$
\begin{array}{r}
1\ \square \\
+\ 3\ \square \\
\hline
5\ 3
\end{array}
$$

How do you know you have found all the pairs?
What is the same about all the pairs of numbers?

Find all the possible pairs of numbers that can complete the addition.

14 + 39
15 + 38
16 + 37
17 + 36
18 + 35
19 + 34

All the pairs of ones add up to 13.

What is the value of the digits?

How many ones do we have altogether?

How many tens do we have altogether?

Can we exchange ten ones for one ten?

What is the sum of the numbers?

What is the total?

How many have we got altogether?

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Subtract with 2-digits (1)

2

78 minus 34 = _____

8 ones – 4 ones = _____

7 tens – 3 tens = _____

We have ____ tens and ____ ones.

? *Which number do we need to make?*

78 minus 34 = __44__

8 ones – 4 ones = __4 ones__

7 tens – 3 tens = __4 tens__

We have __4__ tens and __4__ ones.

47 − 31 = ____

7 ones − 1 one =_____

4 tens − 3 tens = _____

We have ____ tens and _____ ones

47 − 31 = __16__

7 ones − 1 one = __6 ones__

4 tens − 3 tens = __1 ten__

We have __1__ ten and __6__ ones

34 – 13

34

30   4

− 10   − 3

20   1
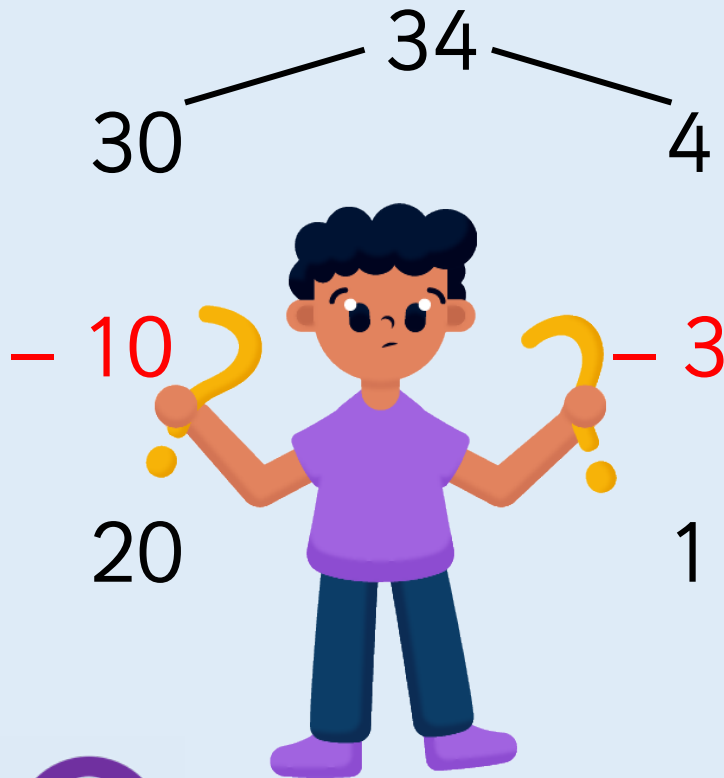
- Partition the number 34
- Partition 13 and subtract the ones and the tens.
- Place the partitioned number back together.

Do we need to make both numbers in the subtraction before we take it away?

Subtract with 2-digits (1)

34 – 13

34

30   4

– 10   – 3

34 – 13 = 21

20   1

21

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Subtract with 2-digits (1)

75 – 43

75

70   5
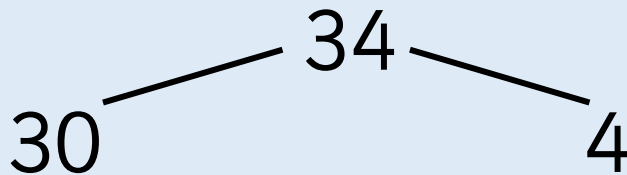
- Partition the number 75
- Partition 43 and subtract the ones and the tens.
- Place the partitioned number back together.
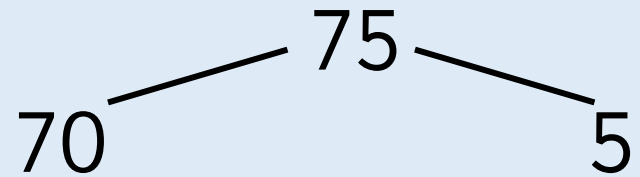
− 40   − 3
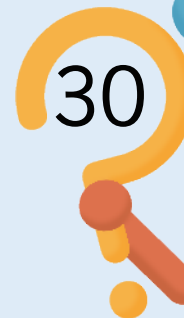
30   2

Subtract with 2-digits (1)

75 – 43

75
70   5

75 – 43 = 32   – 40   – 3

30   2

32
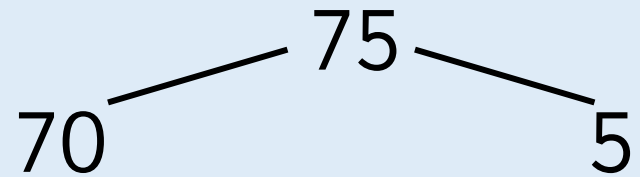
Subtract with 2-digits (1)
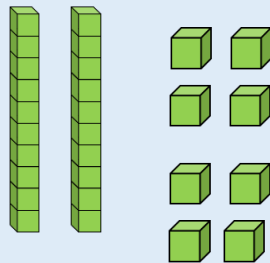
Subtract 13 from 28

$$\begin{array}{r} 2\ 8 \\ -\ 1\ 3 \\ \hline \end{array}$$

What are the numbers worth? Tens or ones?

Subtract with 2-digits (1)

Subtract 13 from 28
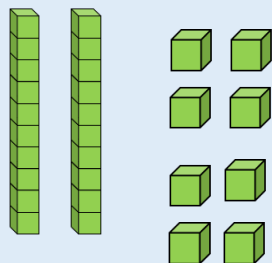
$$
\begin{array}{r}
2\ 8 \\
-\ 1\ 3 \\
\hline
1\ 5
\end{array}
$$
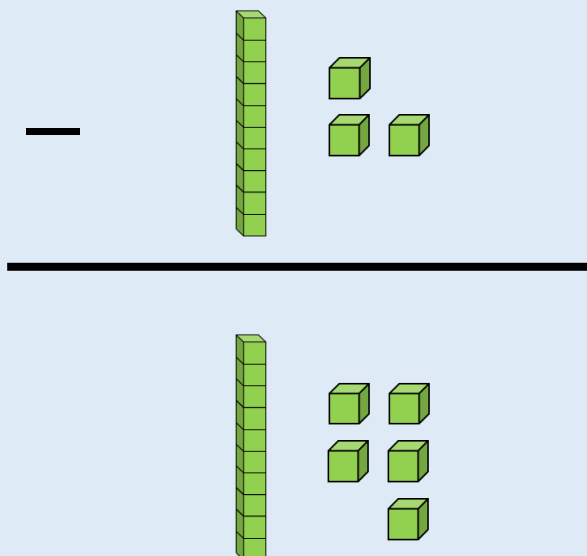
Subtract with 2-digits (1)

Subtract 18 from 39

$$\begin{array}{r} 3\ 9 \\ -\ 1\ 8 \\ \hline \end{array}$$
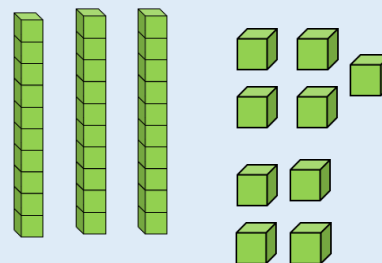
Subtract with 2-digits (1)

Subtract 18 from 39

$$\begin{array}{r} 3\,9 \\ -\,1\,8 \\ \hline 2\,1 \end{array}$$

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Leanna has 23 stickers.
Zach has 44 stickers.

BAM!
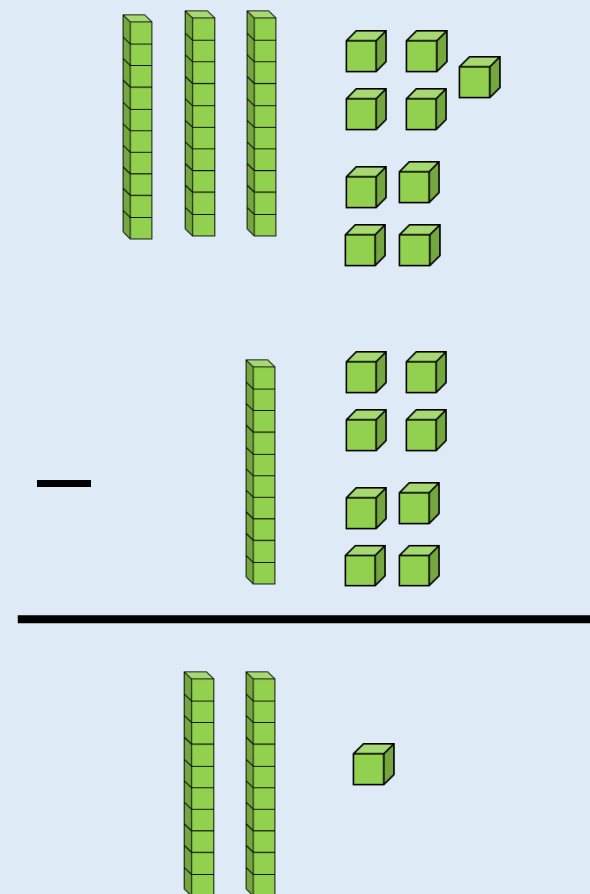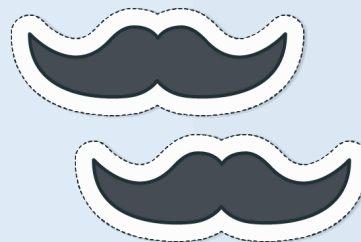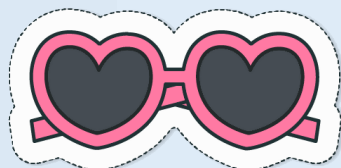
How many more stickers does Zach have?
What method did you use to solve the problem?

Leanna has 23 stickers.
Zach has 44 stickers.
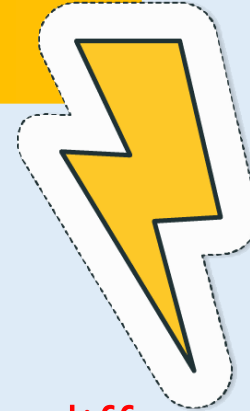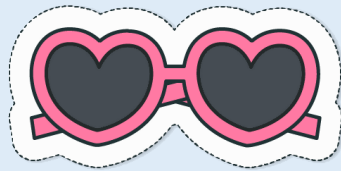
Here the children are working out the difference.

Children might use subtraction to solve the problem or they might count to find the difference.

Zach has 21 more stickers than Leanna.

BAM!

Find the missing numbers.

$$
\begin{array}{r}
5\ \square \\
-\ 1\ \square \\
\hline
4\ 2
\end{array}
$$

Is this the only possible solution? Explain your answer.
Make the numbers using Base 10 to help you find your answer.

Find the missing numbers.

$$\begin{array}{r} 5\;\square \\ -\;1\;\square \\ \hline 4\;2 \end{array}$$

9 and 7
8 and 6
7 and 5
6 and 4
5 and 3
4 and 2
3 and 1
2 and 0

Do we need to make both numbers in the subtraction before we take away?

Which number do we need to make?
The larger number or the smaller?

What are the numbers worth? Tens or ones?

What happens if we have nothing left in a column?
Which number do we write?

Subtract with 2-digits (2)

2
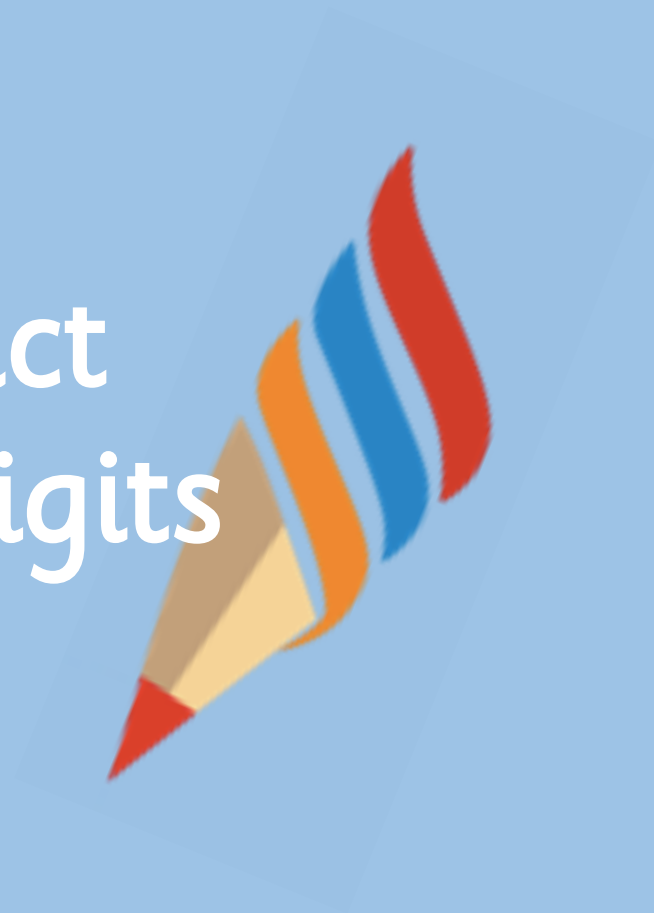
Subtract with 2-digits (2)

Use the number line to subtract 12 from 51.
Can you subtract the ones first and then the tens?
Can you partition the ones to count back to the next ten and then subtract the tens?

51

How many have we got left?

?

Use the number line to subtract 12 from 51.
Can you subtract the ones first and then the tens?
Can you partition the ones to count back to the next ten and then subtract the tens?

- 10   - 2

39   49   51

51 – 12 = 39

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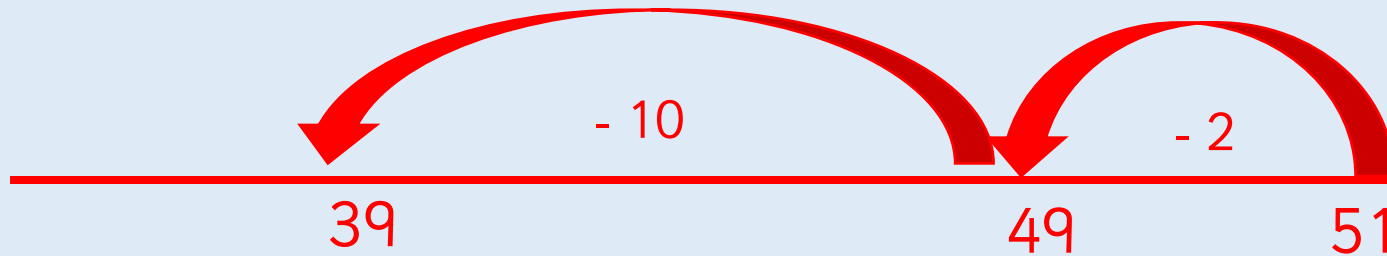
Subtract with 2-digits (2)

Use the number line to subtract 25 from 48.
Can you subtract the ones first and then the tens?
Can you partition the ones to count back to the next ten and then subtract the tens?

48

Subtract with 2-digits (2)

Use the number line to subtract 25 from 48.
Can you subtract the ones first and then the tens?
Can you partition the ones to count back to the next ten and then subtract the tens?

– 20

– 5

23

43

48

48 – 25 = 23

Subtract with 2-digits (2)

42 – 15 =

42

40   2

-10   -5

We can't subtract
the ones.
Can we partition
differently?

42

30   12

-10   -5

20   7

27
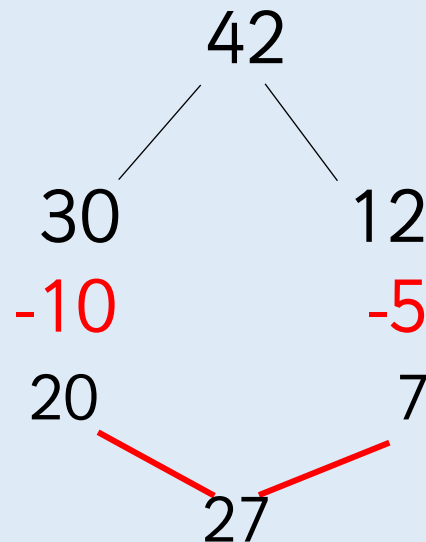
Now we can subtract
the ones and then
subtract the tens.
42 – 15 =27

What is the difference between the numbers?

Subtract with 2-digits (2)

36 − 19 =
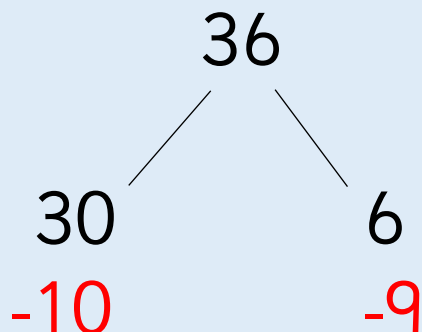
36

30   6

-10   -9

We can't subtract
the ones.
Can we partition
differently?

36

20   16

-10   -9

10   7

17
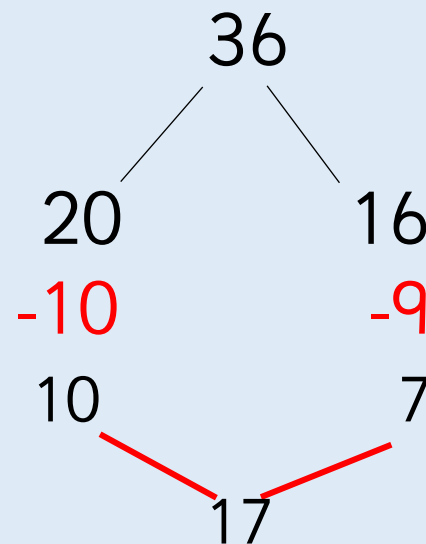
Now we can subtract
the ones and then
subtract the tens.
36 − 19 =17

Take 16 away from 34.

$$\begin{array}{r} 3\ 4 \\ -1\ 6 \\ \hline \\ \hline \end{array}$$

Which method is the most efficient?

Subtract with 2-digits (2)

Take 16 away from 34,

Exchange a ten for 10 ones, then subtract 16.
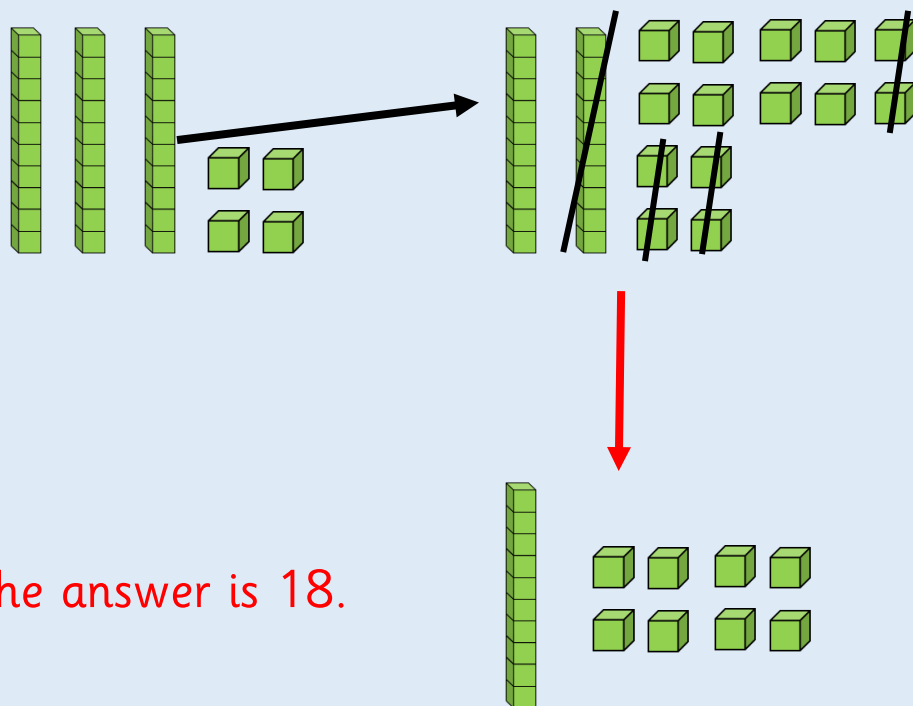
$$
\begin{array}{r}
\overset{2}{\cancel{3}}\overset{1}{4} \\
-\,1\ 6 \\
\hline
1\ 8 \\
\hline
\end{array}
$$

The answer is 18.

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Subtract with 2-digits (2)

Take 14 away from 41.

$$\begin{array}{r} 4\ 1 \\ -1\ 4 \\ \hline \\ \hline \end{array}$$

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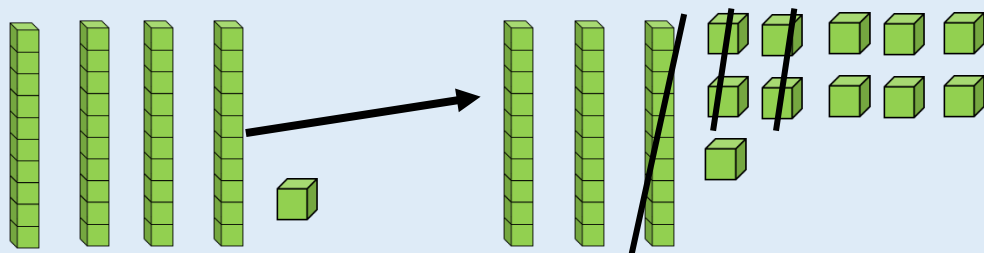
Subtract with 2-digits (2)

Take 14 away from 41.

Exchange a ten for 10 ones, then subtract 16.

$$
\begin{array}{r}
{}^{3}\cancel{4}\,{}^{1}1 \\
-\ 1\ 4 \\
\hline
2\ 7 \\
\hline
\end{array}
$$
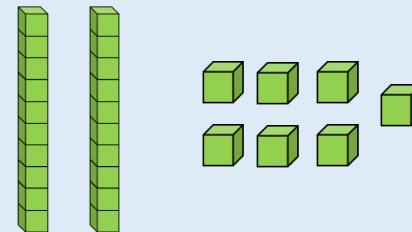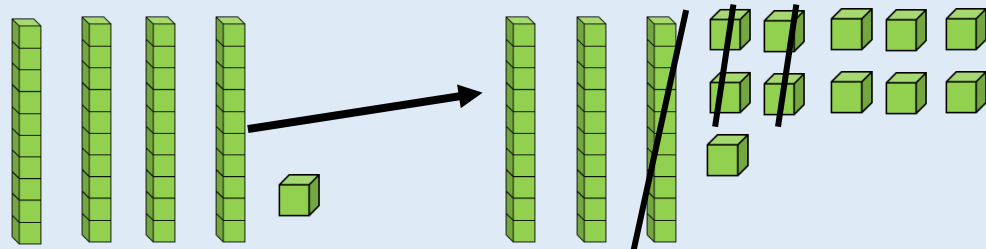
The answer is 27.

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Subtract with 2-digits (2)

Tia and Rosie are working out some subtractions.

Tia

I am working out
64 – 46.

One of my numbers
in my question is 14.

Rosie

Tia's answer is double Rosie's answer.
What could Rosie's subtraction be?

Tia and Rosie are working out some subtractions.

Tia

I am working out
64 – 46.

One of my numbers
in my question is 14.

Rosie

Tia's answer is 18. Rosie's answer is 9.

Rosie's question could be 14 – 5 or 23 – 14

Find the greatest whole number that can complete each number sentence below.

55 – 17 > 14 + ____

36 + 15 < 70 – ____

Explain your answer.

Find the greatest whole number that can complete each number sentence below.

$$55 - 17 > 14 + \underline{23}$$

$$36 + 15 < 70 - \underline{18}$$

Subtract with 2-digits (2)

Have we got enough ones to take away?

Can we exchange one ten for ten ones?

How many have we got left?

What is the difference between the numbers?

Do we always need to subtract the ones first? Why do we always subtract the ones first?

Which method is the most efficient? Subtraction or counting on to find the difference?

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Bonds to 100 (Tens and Ones)

2

Bonds to 100 (Tens and Ones)

Use a 100 square.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- 40 squares are shaded, how many are not shaded?
- 45 squares are shaded, how many are not shaded?
54 squares are shaded, how many are not shaded?

How many tens are in 100?

Bonds to 100 (Tens and Ones)

Use a 100 square.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

40 squares are shaded, how many are not shaded?

$100 - 40 = 60$
So, there are 60 squares that are not shaded.
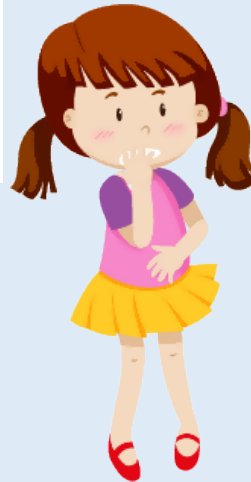
Bonds to 100 (Tens and Ones)

Use a 100 square.

45 squares are shaded, how many are not shaded?

100 – 45 = 55
So, there are 55 squares that are not shaded.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Bonds to 100 (Tens and Ones)

Use a 100 square.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

54 squares are shaded, how many are not shaded?

Bonds to 100 (Tens and Ones)

Use a 100 square.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

54 squares are shaded, how many are not shaded?

$100 - 54 = 46$
So, there are 46 squares that are not shaded.
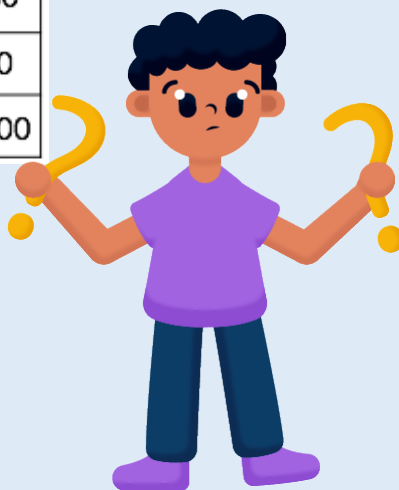
Malachi is making 100 with Base 10.
How much more does he need if he has:

-

- 5 tens and 3 ones

- 37

Children could place their Base 10 on top of a 100 piece to help them calculate.

How many more do we need to make 100?

Malachi is making 100 with Base 10.
How much more does he need if he has:

Malachi needs:

-

- 5 tens and 3 ones

4 tens and 7 ones

- 37

63

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Esin is making 100 with Base 10.
How much more does she need if she has:

Children could place their Base 10 on top of a 100 piece to help them calculate.

-
- 3 tens and 8 ones
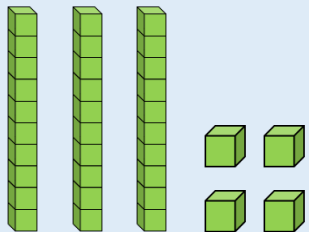
- 89
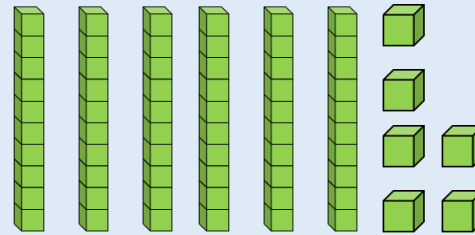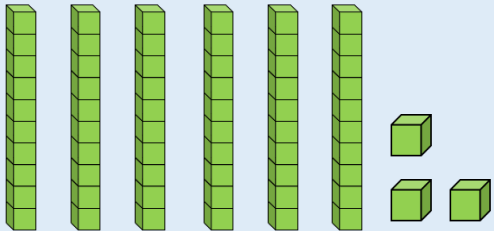
Bonds to 100 (Tens and Ones)

Esin is making 100 with Base 10.
How much more does she need if she has:

Esin needs:
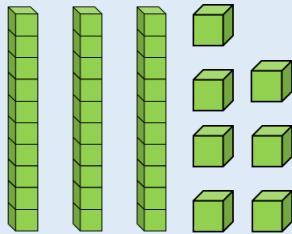
6 tens and 2 ones

11

-

- 3 tens and 8 ones

- 89
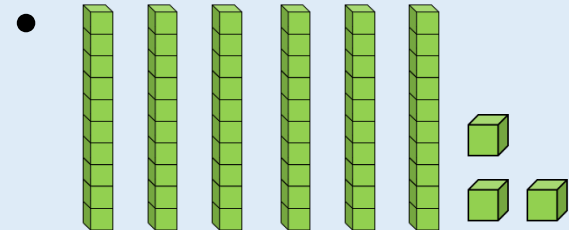
$25 + \underline{\quad} = 100$ $100 - 84 = \underline{\quad}$

$\underline{\quad} + 69 = 100$ $100 - \underline{\quad} = 11$

Can you make the number using Base 10?

Bonds to 100 (Tens and Ones)

$25 + \underline{75} = 100$

$100 - 84 = \underline{16}$

$\underline{31} + 69 = 100$

$100 - \underline{89} = 11$

$45 + \boxed{} = 100$ $72 + \boxed{} = 100$

$\boxed{} + 98 = 100$ $\boxed{} + 55 = 100$

$100 - 46 = \boxed{}$ $100 - 8 = \boxed{}$

$100 - \boxed{} = 34$ $100 - \boxed{} = 70$

Bonds to 100 (Tens and Ones)

$45 + \boxed{55} = 100$

$72 + \boxed{28} = 100$

$\boxed{2} + 98 = 100$

$\boxed{45} + 55 = 100$

$100 - 46 = \boxed{54}$

$100 - 8 = \boxed{92}$

$100 - \boxed{66} = 34$

$100 - \boxed{30} = 70$

Leanna has completed the missing number sentence.

$$36 + 54 = 100$$

Is Leanna correct? Explain your answer.

Leanna has completed the missing number sentence.

$$36 + 54 = 100$$

Leanna is incorrect. The correct answer is 90.

Complete the pattern.

10 + 90 = 100
20 + 80 = 100
30 + 70 = 100
40 + ___ = 100
___ + ___ = 100

Can you explain the pattern?

Complete the pattern.

10 + 90 = 100
20 + 80 = 100
30 + 70 = 100
40 + <u>60</u> = 100
<u>50</u> + <u>50</u> = 100

The first numbers are going up in tens and the second numbers are going down in tens. All of the number sentences are number bonds to 100.

Each row and column adds up to 100.

35	35	
	25	
5		55

Complete the grid.

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Each row and column adds up to 100.

35	35	30
60	25	15
5	40	55

How many more do we need to make 100?

How many tens are in 100?

If I have 35, do I need 7 tens and 5 ones to make 100?
Explain why.

Can you make the number using Base 10?
Can you add more Base 10 to the number to make 100?

Add Three 1-digit Numbers

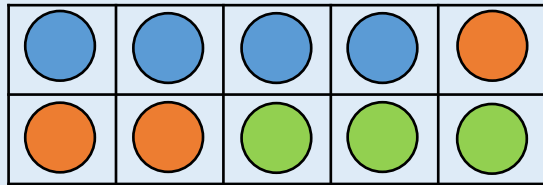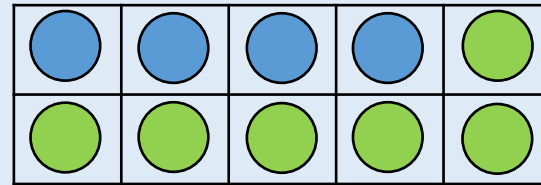## 2

Add Three 1-digit Numbers

Use ten frames and counters to add the numbers
4 + 3 + 6

Can you add the numbers in different way to find a number bond to 10?
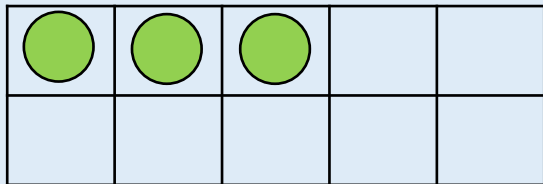
$4 + 6 = 10$
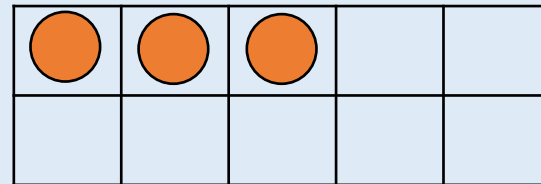
$10 + 3 = 13$

Which two numbers did you add first? Why?

Find the totals of each row and column.

5	4	2	
3	7	8	
5	7	3	

Can we change the order of the numbers to make the calculation easier?

Add Three 1-digit Numbers

Find the totals of each row and column.

5	4	2	11
3	7	8	18
5	7	3	15
13	18	13	

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Add Three 1-digit Numbers

Find the totals of each row and column.

1	5	7
3	4	6
2	8	9

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Add Three 1-digit Numbers

Find the totals of each row and column.

13	1	5	7
13	3	4	6
19	2	8	9
	6	17	22
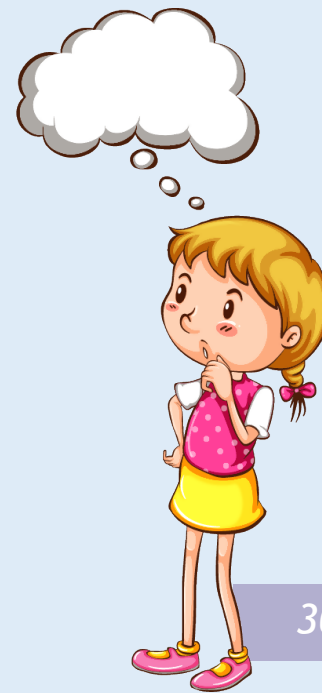
Add Three 1-digit Numbers

Use <, > or = to compare the number sentences.
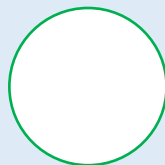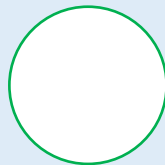
$5 + 4 + 6$ ◯ $6 + 5 + 4$

$9 + 2 + 5$ ◯ $8 + 3 + 5$

$7 + 3 + 8$ ◯ $7 + 7 + 3$

$8 + 4 + 2$ ◯ $2 + 5 + 8$

Which two numbers did you add first? Why?

Add Three 1-digit Numbers

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

5 + 4 + 6 **(=)** 6 + 5 + 4

9 + 2 + 5 **(=)** 8 + 3 + 5

7 + 3 + 8 **(>)** 7 + 7 + 3

8 + 4 + 2 **(<)** 2 + 5 + 8

Add Three 1-digit Numbers

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

4 + 6 + 2　◯　7 + 1 + 2　　　6 + 3 + 8　◯　8 + 6 + 3

2 + 0 + 7　◯　4 + 2 + 2　　　6 + 3 + 5　◯　9 + 8 + 2

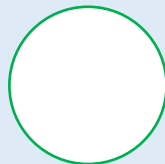1 + 9 + 1　◯　4 + 2 + 7　　7 + 3 + 8　◯　8 + 2 + 8

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Add Three 1-digit Numbers

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

$4 + 6 + 2$ **>** $7 + 1 + 2$ $6 + 3 + 8$ **=** $8 + 6 + 3$

$2 + 0 + 7$ **>** $4 + 2 + 2$ $6 + 3 + 5$ **<** $9 + 8 + 2$

$1 + 9 + 1$ **<** $4 + 2 + 7$ $7 + 3 + 8$ **=** $8 + 2 + 8$

Always, sometimes, never?

odd + odd + odd = odd

Use one-digit numbers to test if this is true.
E.g. 1 + 3 + 7

Always, sometimes, never?

odd + odd + odd = odd

Always, children may recognise that two odds make an even so three odds make an odd.

Add Three 1-digit Numbers

Which numbers would you add together first in the following number sentences?
Why would you add those first?

$$2 + 4 + 8 =$$

$$7 + 3 + 5 =$$

$$5 + 2 + 5 =$$

Is there always an easier order to add three one-digit numbers?

Which numbers would you add together first in the following number sentences?
Why would you add those first?

2 and 8 first –
number bond to 10.

7 and 3 first –
number bond to 10.

5 and 5 first – double
a number.

No, e.g. 5 + 6 + 7

Take 3 consecutive one-digit numbers, e.g. 3,4,5. Add them together.

What do you notice? Choose different groups of 3 consecutive one-digit numbers and see if there is a pattern.

Take 3 consecutive one-digit numbers, e.g. 3,4,5. Add them together.

$1 + 2 + 3 = 6$

$2 + 3 + 4 = 9$

$3 + 4 + 5 = 12$

$4 + 5 + 6 = 15$

$5 + 6 + 7 = 18$

$6 + 7 + 8 = 21$

$7 + 8 + 9 = 24$

If we order the groups, we can see that the totals go up by 3 each time. This is because we are adding one to each number each time so we are adding 3 extra altogether.

Can we change the order of the numbers to make the calculation easier?

Why are we allowed to change the order of the numbers?

Which two numbers did you add first? Why?

What if you added a different two numbers first, would your answer be the same?

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