

Lesson 6 – Bonds to 100

NC Objective:

Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.

Resources needed:

Differentiated worksheet
Teaching slides

Vocabulary:

Addition, subtraction, facts, number bonds, multiples of 10, 10 frame

Teachers should focus on multiples of 10 up to and within 100.

Links should be made again between single digit bonds and tens bonds.

Using a 10 frame to represent 100 would be a useful resource to make this link.

Key Questions:

What does the word multiple mean?

What do the different colours represent?

Why is it different to a normal 10 frame?

What patterns can you see? How does this help us to make up our own?

★ Working Towards

Bonds to 100 Fluency & Precision 2

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

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

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

10 + 90 = 100

Children on this sheet have the multiples of 10 on some of their ten frames. 10 frames are coloured in a simple consecutive way.

★★ Working Within

Bonds to 100 Fluency & Precision 2

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

What calculation do the ten frames represent?

10 + 90 = 100

Match the 10 frames to the sentences below.

100 = 70 + 30 one hundred equals fifty add fifty 100 = 40 + 60

Fill in the missing numbers.

6 + 4 = 10 2 + 8 = 10 7 + 3 = 10

6 ____ + ____ = 100 2 ____ + ____ = 100 ____ + 3 ____ = 100

Children on this sheet have ten frames coloured randomly. They match ten frames and calculations represented in digits and words.

★★★ Greater Depth

Bonds to 100 Fluency & Precision 2

What calculation do the ten frames represent?

80 + 20 = 100

20 + 80 = 100

Match the 10 frames to the number sentences below.

eighty and twenty equals one hundred 100 = 70 + 30 one hundred equals fifty add fifty 100 = 80 + 20 100 = 10 + 90

100 = 60 + 40 one hundred equals ten add ninety 60 + 40 = 100 one hundred equals fifty add fifty 100 = 70 + 30

What's the same and what's different about number bonds to 10 and number bonds to 100?

Children on this sheet will have 3 numbers to find the bond. They have complex shading, including halves.

Reasoning & Problem Solving

Bonds to 100 Reasoning & Problem Solving 2

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

30 40 50 60

What do you notice about the amount of bonds for each number?

If 80 has 5 bonds, predict how many 90 would have.

Tia thinks there are 12 different number bonds to 100 using multiples of 10. Malachi thinks there are only 6.

Who is correct?

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

Can you complete the grid above so that all horizontal and vertical lines equals 60?

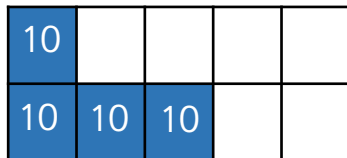
Can children create another pattern on an empty grid where each line equals 60?

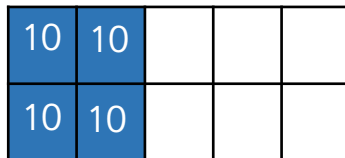
How many different ways are there to solve this?

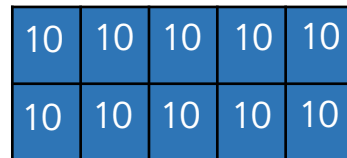
Children continue working on number bonds by solving reasoning tasks.

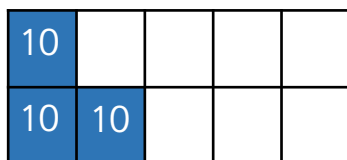


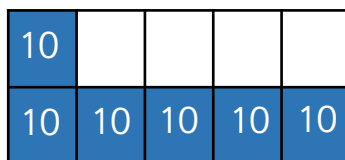
What do the ten frames represent if each square is worth ten?

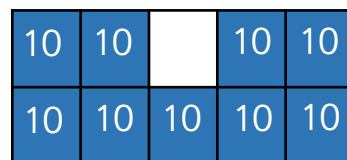




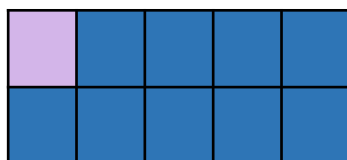




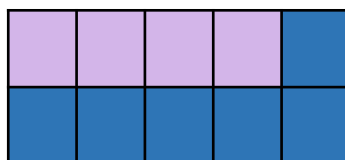


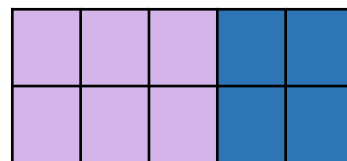


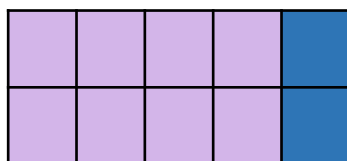
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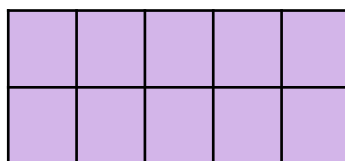


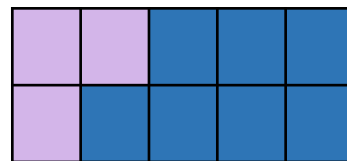
$$10 + 90 = 100$$





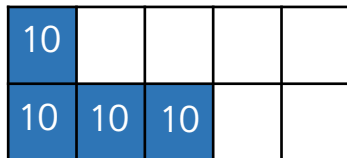




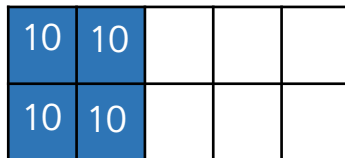




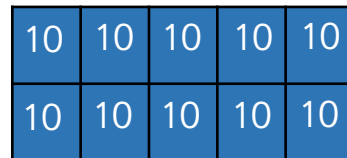
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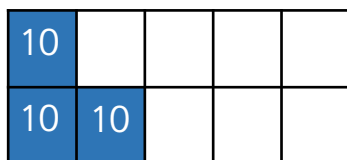
40



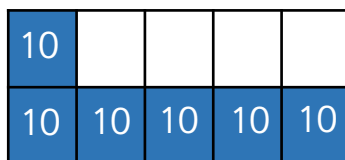
40



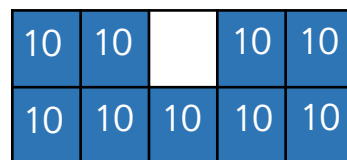
100



30

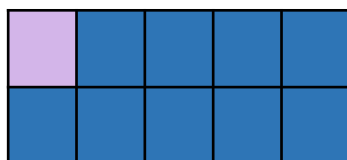


60

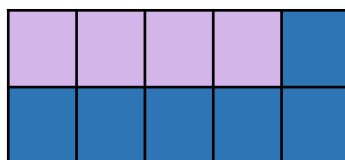


90

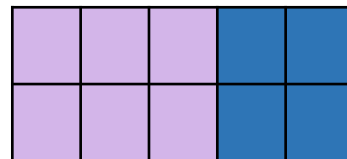
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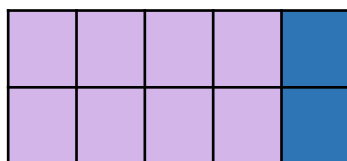
$$10 + 90 = 100$$



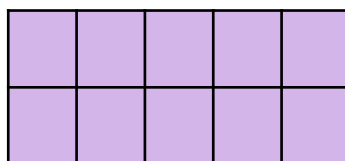
$$40 + 60 = 100$$



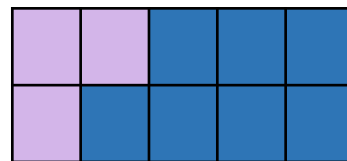
$$60 + 40 = 100$$



$$80 + 20 = 100$$



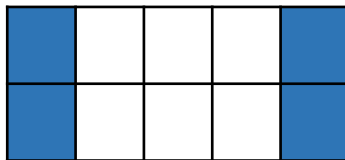
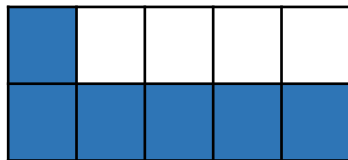
$$0 + 100 = 100$$



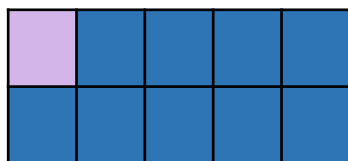
$$30 + 70 = 100$$



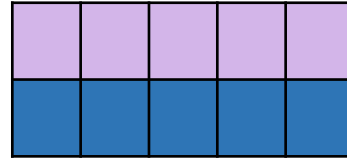
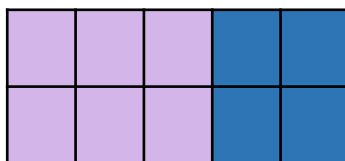
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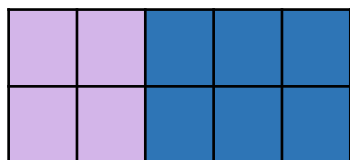
What calculation do the ten frames represent?



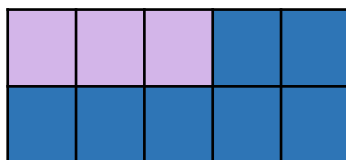
$$10 + 90 = 100$$



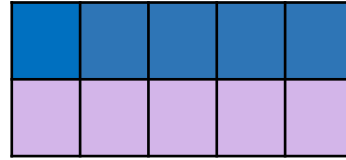
Match the 10 frames to the sentences below.



$$100 = 70 + 30$$



one hundred equals
fifty add fifty



$$100 = 40 + 60$$

Fill in the missing numbers.

$$6 + 4 = 10$$

$$2 + 8 = 10$$

$$7 + 3 = 10$$

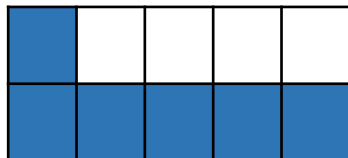
$$6 \text{ ______ } + \text{ ______ } 0 = 100$$

$$2 \text{ ______ } + \text{ ______ } 0 = 100$$

$$\text{ ______ } 0 + 3 \text{ ______ } = 100$$



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



70

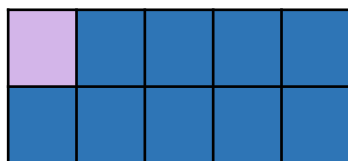


40

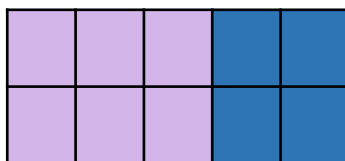


60

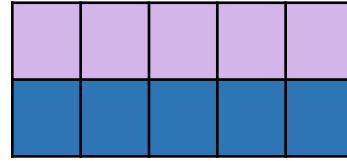
What calculation do the ten frames represent?



$$10 + 90 = 100$$

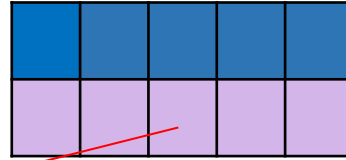
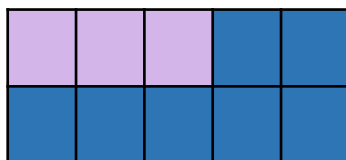
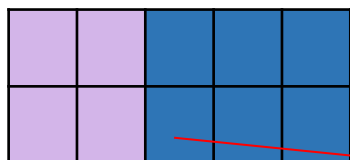


$$60 + 40 = 100$$



$$50 + 50 = 100$$

Match the 10 frames to the sentences below.



$$100 = 70 + 30$$

one hundred equals
fifty add fifty

$$100 = 40 + 60$$

Fill in the missing numbers.

$$6 + 4 = 10$$

$$2 + 8 = 10$$

$$7 + 3 = 10$$

$$6 \underline{0} + \underline{4} 0 = 100$$

$$2 \underline{0} + \underline{8} 0 = 100$$

$$\underline{7} 0 + 3 \underline{0} = 100$$



What calculation do the ten frames represent?



$$80 + 20 = 100$$

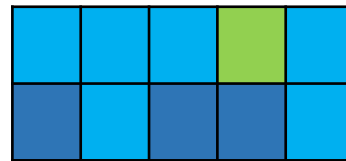




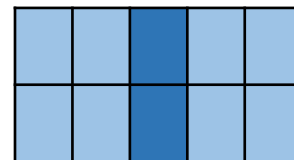
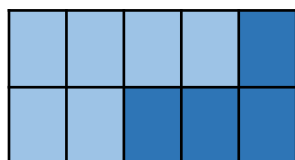


$$20 + 60 + 20 = 100$$





Match the 10 frames to the number sentences below.



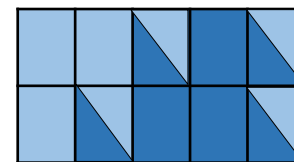
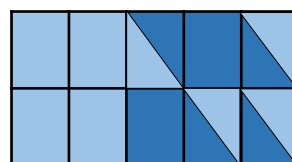
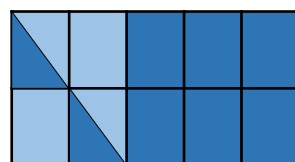
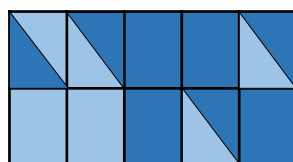
sixty and forty
equals one hundred

$$100 = 70 + 30$$

one hundred equals
fifty add fifty

$$100 = 80 + 20$$

$$100 = 10 + 90$$



$$100 = 60 + 40$$

one hundred equals
ten add ninety

$$60 + 40 = 100$$

one hundred equals
fifty add fifty

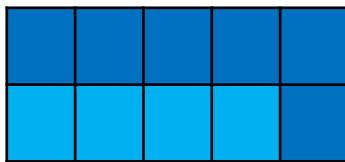
$$100 = 70 + 30$$

What's the same and what's different about number bonds to 10 and number bonds to 100?

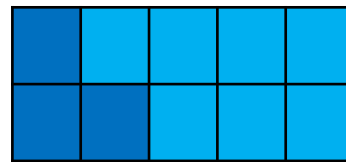
What calculation do the ten frames represent?



$$80 + 20 = 100$$



$$60 + 40 = 100$$



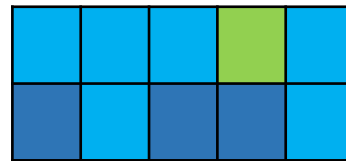
$$30 + 70 = 100$$



$$20 + 60 + 20 = 100$$

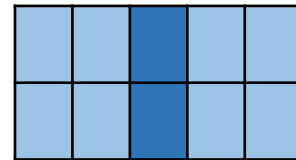
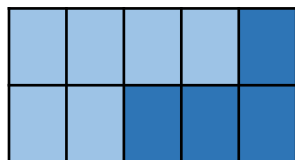
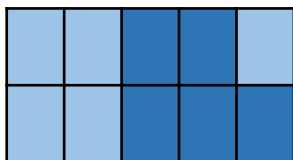


$$30 + 40 + 30 = 100$$



$$30 + 60 + 10 = 100$$

Match the 10 frames to the number sentences below.



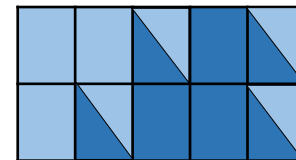
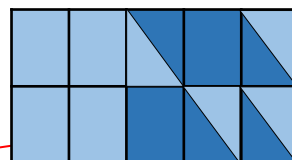
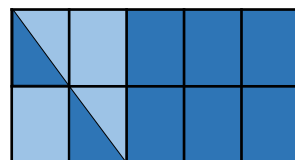
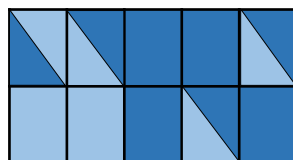
sixty and forty
equals one hundred

$$100 = 70 + 30$$

one hundred equals
fifty add fifty

$$100 = 80 + 20$$

$$100 = 10 + 90$$



$$100 = 60 + 40$$

one hundred equals
ten add ninety

$$60 + 40 = 100$$

one hundred equals
fifty add fifty

$$100 = 70 + 30$$

What's the same and what's different about number bonds to 10 and number bonds to 100?

Number bonds to 10 and number bonds to 100 have the some of the same digits. For example $10 = 3 + 7$ and $100 = 30 + 70$, the same digits are 10, 3 and 7. Number bonds to 100 have an extra 0 at the end.

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

30 40 50 60

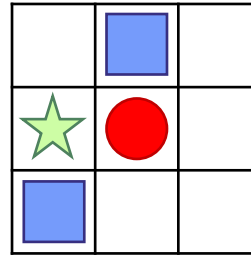
What do you notice about the amount of bonds for each number?


If 80 has 5 bonds, predict how many 90 would have.


Tia thinks there are 12 different number bonds to 100 using multiples of 10.
Malachi thinks there are only 6.


Who is correct?

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



 = 10

 = 20

 = 30

Can you complete the grid above so that all horizontal and vertical lines equals 60?

Can you create another pattern on an empty grid where each line equals 60?

How many different ways are there to solve this?

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

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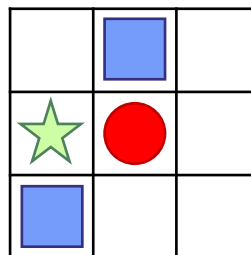
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Using multiples of 10, how many number bonds are there for the following numbers?

30 40 50 60

What do you notice about the amount of bonds for each number?

If 80 has 5 bonds, predict how many 90 would have.

30 has 2, 40 and 50 have 3, 60 has 4.

When the tens digit is odd it has the same number of bonds as the previous tens number.

90 would also have 5.

Tia thinks there are 12 different number bonds to 100 using multiples of 10.

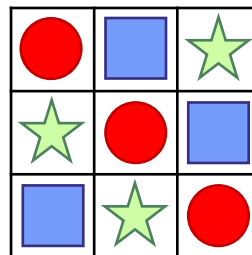
Malachi thinks there are only 6.

Who is correct?

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

Malachi because $0 + 100$ is the same as $100 + 0$.

Tia has repeated her answers – the multiples have been written the opposite way round.



Red circle = 10

Blue square = 20

Green star = 30

Can you complete the grid above so that all horizontal and vertical lines equals 60?

Can you create another pattern on an empty grid where each line equals 60?

How many different ways are there to solve this?

Lost of possible solutions available.

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

30 40 50 60

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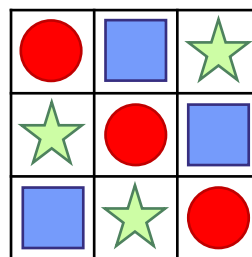
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