

# Reasoning and Problem Solving

## Step 15: Bonds to 100 – Tens and Ones

### National Curriculum Objectives:

Mathematics Year 2: (2C1) [Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100](#)

Mathematics Year 2: (2C2a) [Add and subtract numbers mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers](#)

Mathematics Year 2: (2C3) [Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems](#)

### Differentiation:

Questions 1, 4 and 7 (Reasoning)

**Developing** Explain why a statement involving number bonds to 100 (multiples of 10) is correct or incorrect.

**Expected** Explain why a statement involving number bonds to 100 (multiples of 5) is correct or incorrect.

**Greater Depth** Explain why a statement involving number bonds to 100 (2-digit numbers) is correct or incorrect.

Questions 2, 5 and 8 (Problem Solving)

**Developing** Match pairs of number bonds to 100 to find the odd one out. Find the bond to 100 that pairs with the spare number (multiples of 10).

**Expected** Match pairs of number bonds to 100 to find the odd one out. Find the bond to 100 that pairs with the spare number (multiples of 5).

**Greater Depth** Match pairs of number bonds to 100 to find the odd one out. Find the bond to 100 that pairs with the spare number (2-digit numbers).

Questions 3, 6 and 9 (Problem Solving)

**Developing** Complete a part whole model to create number bonds to 100. Starting with a multiple of 10.

**Expected** Complete a part whole model to create number bonds to 100. Starting with a multiple of 5.

**Greater Depth** Complete a part whole model to create number bonds to 100. Starting with any 2-digit number.

More [Year 2 Addition and Subtraction](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

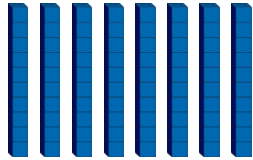
# Bonds to 100 – Tens and Ones

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1a. Is Becca correct?  
Explain why.



I have 80 in Base 10.  
I need 3 tens to make 100.

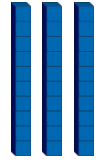


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1b. Is Cole correct?  
Explain why.

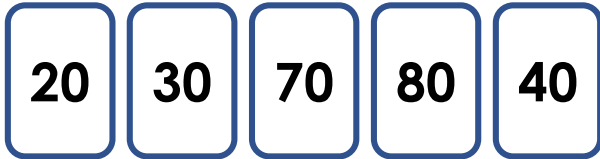


I have 30 in Base 10.  
I need 7 tens to make 100.



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2a. Match pairs of bonds to 100 to find the odd number card out.

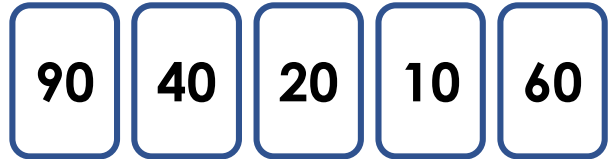


What bonds with the left over card to make 100?



PS

2b. Match pairs of bonds to 100 to find the odd number card out.

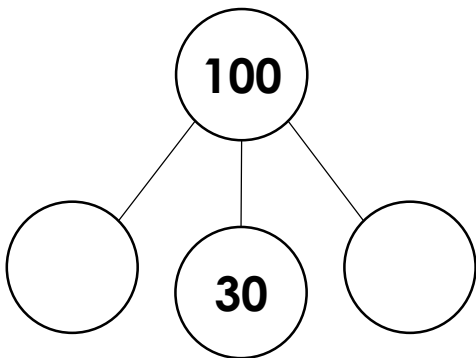


What bonds with the left over card to make 100?



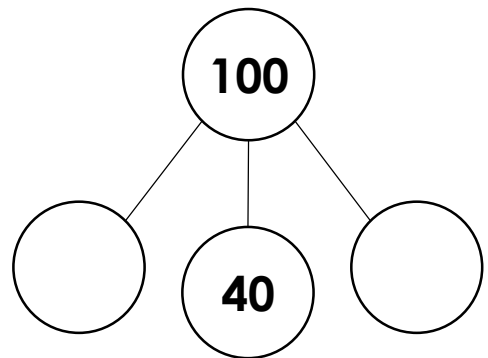
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3a. Find three different combinations of multiples of 10 which will complete this part whole model.



PS

3b. Find three different combinations of multiples of 10 which will complete this part whole model.



PS

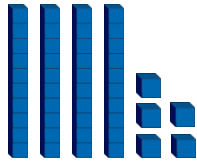
## Bonds to 100 – Tens and Ones

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4a. Is Alice correct?

Explain why.

I have 45 in Base 10.  
I need 5 tens and 5 ones to make 100.



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4b. Is Ahmed correct?

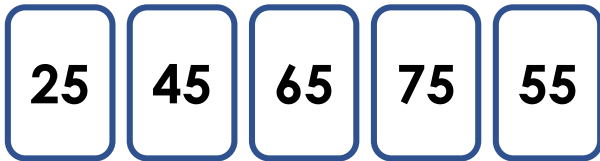
Explain why.

I have 65 in Base 10.  
I need 4 tens and 5 ones to make 100.



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5a. Match pairs of bonds to 100 to find the odd number card out.

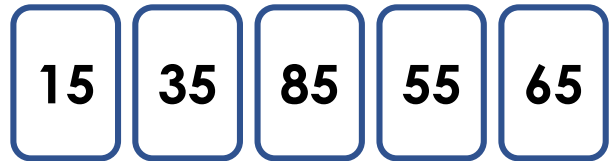


What bonds with the left over card to make 100?



PS

5b. Match pairs of bonds to 100 to find the odd number card out.

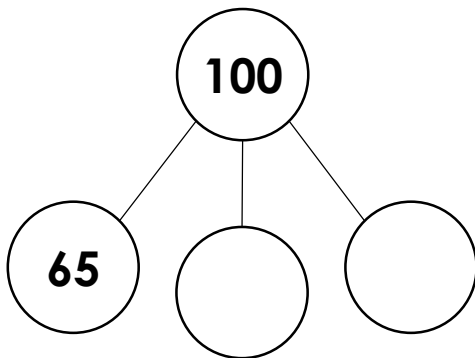


What bonds with the left over card to make 100?



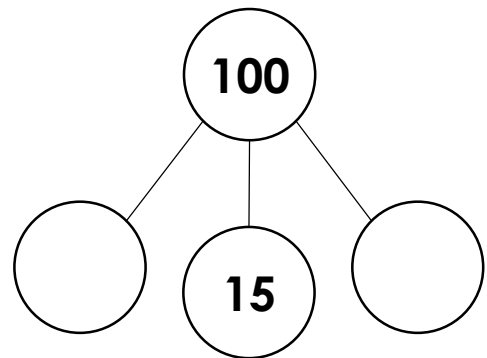
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6a. Find three different combinations of multiples of 5 which will complete this part whole model.



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6b. Find three different combinations of multiples of 5 which will complete this part whole model.



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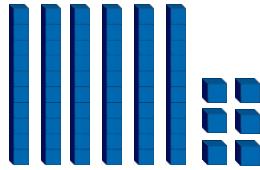
# Bonds to 100 – Tens and Ones

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7a. Is Afia correct?  
Explain why.



I have 66 in Base 10.  
I need 5 tens and 5 ones to make 100.



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7b. Is Charlie correct?  
Explain why.

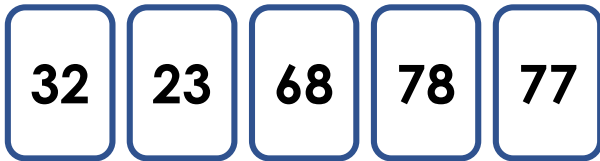


I have 37 in Base 10.  
I need 6 tens and 3 ones to make 100.



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8a. Match pairs of bonds to 100 to find the odd number card out.

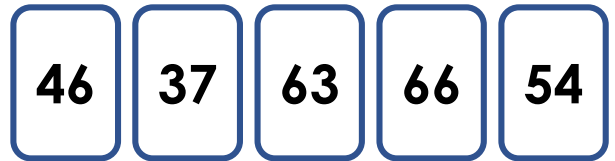


What bonds with the left over card to make 100?



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8b. Match pairs of bonds to 100 to find the odd number card out.

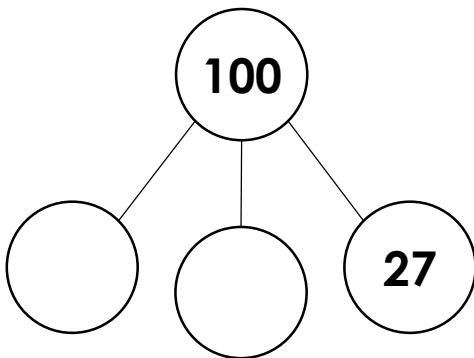


What bonds with the left over card to make 100?



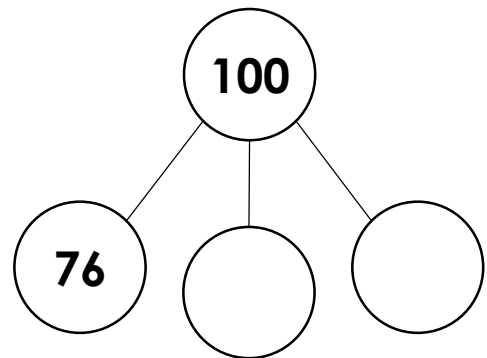
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9a. Find three different combinations of 2-digit numbers which will complete this part whole model.



PS

9b. Find three different combinations of 2-digit numbers which will complete this part whole model.



PS

## Reasoning and Problem Solving Bonds to 100 – Tens and Ones

### Developing

- 1a. Becca is incorrect. She needs 2 tens.  
 $80 + 20 = 100$ .
- 2a. 40 is the odd one out because  
 $20 + 80 = 100$  and  $30 + 70 = 100$ . 60 is  
needed to make 100.
- 3a. Possible answers: 10 and 60;  
20 and 50; 30 and 40.

### Expected

- 4a. Alice is correct.  $45 + 55 = 100$ .
- 5a. 65 is the odd one out because  
 $25 + 75 = 100$  and  $45 + 55 = 100$ . 35 is  
needed to make 100.
- 6a. Possible answers: 5 and 30; 10 and 25;  
15 and 20.

### Greater Depth

- 7a. Afia is incorrect. She needs 3 tens and  
4 ones.  $66 + 34 = 100$ .
- 8a. 78 is the odd one out because  
 $32 + 68 = 100$  and  $23 + 77 = 100$ . 22 is  
needed to make 100.
- 9a. Various answers, for example: 40 + 33;  
21 and 52; 63 and 10.

## Reasoning and Problem Solving Bonds to 100 – Tens and Ones

### Developing

- 1b. Cole is correct.  $30 + 70 = 100$ .
- 2b. 20 is the odd one out because  
 $90 + 10 = 100$  and  $40 + 60 = 100$ . 80 is  
needed to make 100.
- 3b. Possible answers: 10 and 50;  
20 and 40; 30 and 30.

### Expected

- 4b. Ahmed is incorrect. He needs 3 tens  
and 5 ones.  $65 + 35 = 100$ .
- 5b. 55 is the odd one out because  
 $15 + 85 = 100$  and  $35 + 65 = 100$ . 45 is  
needed to make 100.
- 6b. Possible answers: 5 and 80; 10 and 75;  
15 and 70; 20 and 65; 25 and 60; 30 and  
55; 35 and 50; 40 and 45.

### Greater Depth

- 7b. Charlie is correct.  $37 + 63 = 100$ .
- 8b. 66 is the odd one out because  
 $46 + 54 = 100$  and  $37 + 63 = 100$ . 34 is  
needed to make 100.
- 9b. Possible answers: 10 and 14; 11 and  
13; 12 and 12.