

# Reasoning and Problem Solving

## Step 5: Bonds to 100 – Tens

### 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](#)

### Differentiation:

Questions 1, 4 and 7 (Problem Solving)

**Developing** Use the cards to create addition number bond sentences for numbers to 100. Multiples of 10. Numbers represented using Base 10.

**Expected** Use the cards to create addition and subtraction number bond sentences for numbers within 100. Multiples of 10. Numbers represented using a mixture of numerals and pictorials.

**Greater Depth** Use the cards to create addition and subtraction number bond sentences for numbers within 100. Multiples of 5. Numbers represented using a mixture of numerals, pictorial and words.

Questions 2, 5 and 8 (Reasoning)

**Developing** Identify the incorrect number bond for 100 and explain why it is incorrect. Multiples of 10 and numbers given in numerals and pictorials.

**Expected** Identify the incorrect number bond for 100 and explain why it is incorrect. Multiples of 10 and numbers represented using a mixture of numerals and words.

**Greater Depth** Identify the incorrect number bond within 100 and explain why it is incorrect. Multiples of 5 and numbers given in words.

Questions 3, 6 and 9 (Problem Solving)

**Developing** Use knowledge of number bonds for 100 to identify which two items have been purchased. Pictorial representations for prices.

**Expected** Use knowledge of number bonds within 100 to identify two items could have been purchased. Find all possibilities. Prices represented in numerals.

**Greater Depth** Use knowledge of number bonds within 100 to identify two or more items that could have been purchased. Find all possibilities. Prices represented in a mixture of numerals, words and pictorials.

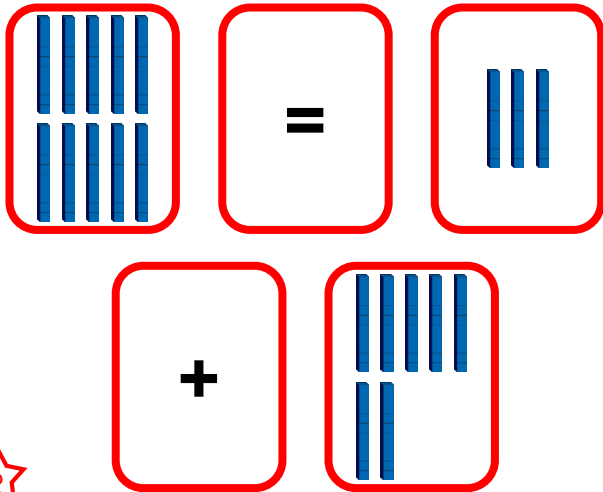
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## Bonds to 100 – Tens

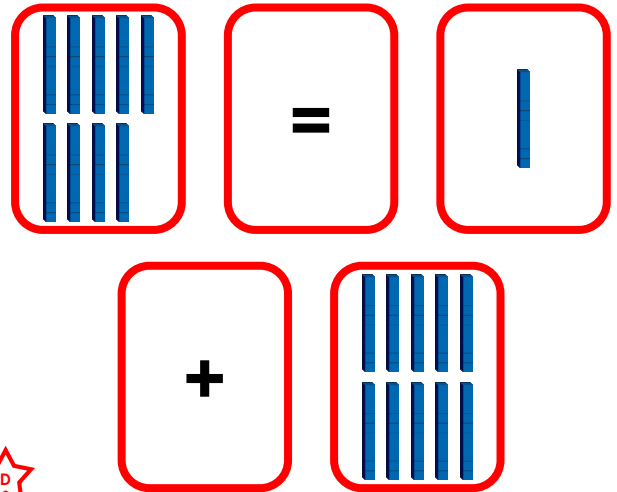
## Bonds to 100 – Tens

1a. Arrange the cards below to create a number sentence. Find all the possibilities.



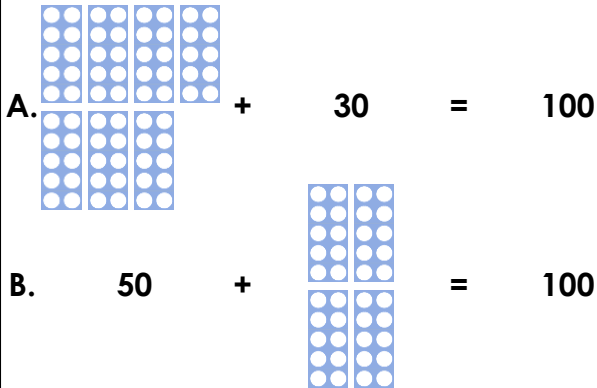
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1b. Arrange the cards below to create a number sentence. Find all the possibilities.



PS

2a. Circle the incorrect number sentence below.

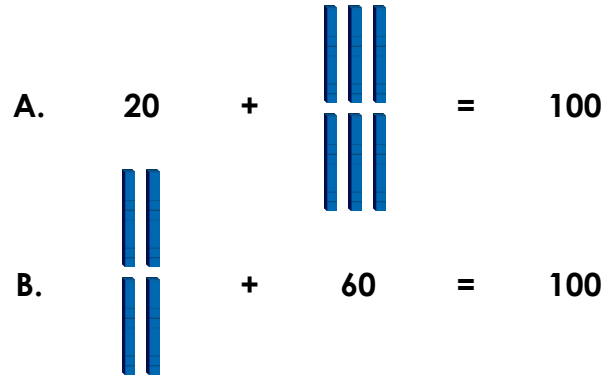


Explain why it is incorrect.



R

2b. Circle the incorrect number sentence below.

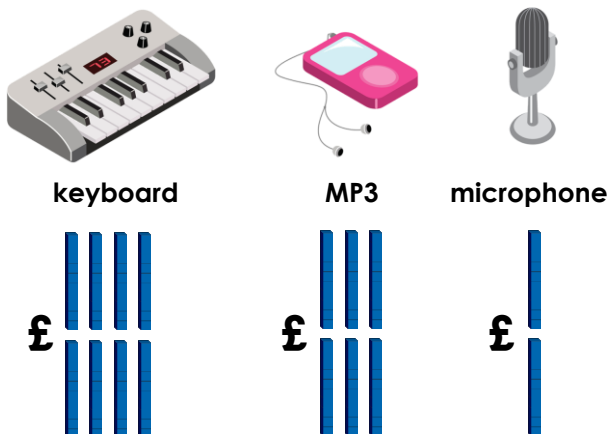


Explain why it is incorrect.



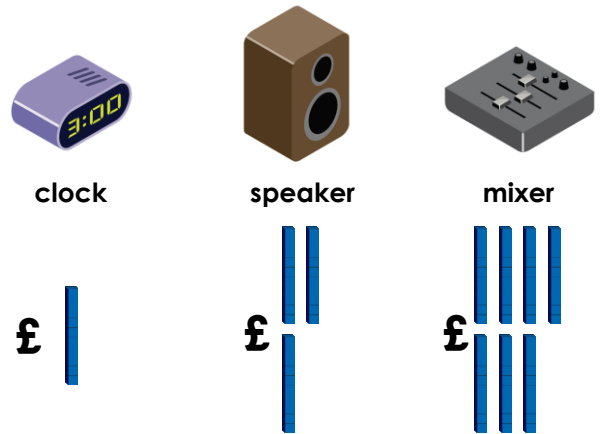
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3a. Anwar spends £100 on two items. Which items did he buy?



PS

3b. Alice spends £100 on two items. Which items did she buy?

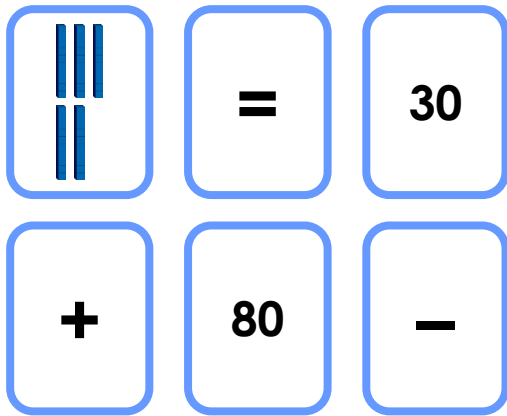


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## Bonds to 100 – Tens

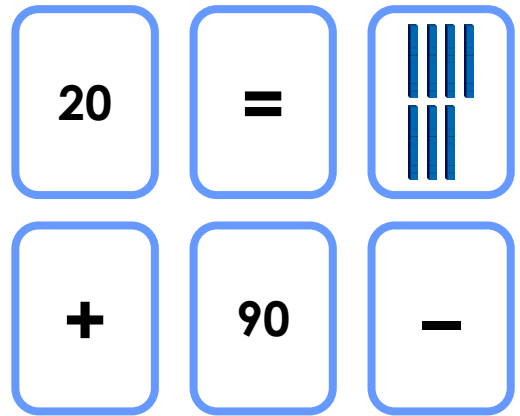
## Bonds to 100 – Tens

4a. Arrange the cards below to create a number sentence. Find all the possibilities.



PS

4b. Arrange the cards below to create a number sentence. Find all the possibilities.



PS

5a. Circle the incorrect number sentence below.

- A. 70 + thirty = one hundred
- B. fifty + forty = 100
- C. one hundred = 80 + twenty

Explain why it is incorrect.



R

5b. Circle the incorrect number sentence below.

- A. 10 + eighty = ninety
- B. Fifty + forty = 90
- C. ninety = 80 + twenty

Explain why it is incorrect.



R

6a. Johnny spends £90 on two items. Which items did he buy? Find all the possible combinations.



PS

6b. Tilly spends £100 on two items. Which items did she buy? Find all the possible combinations.

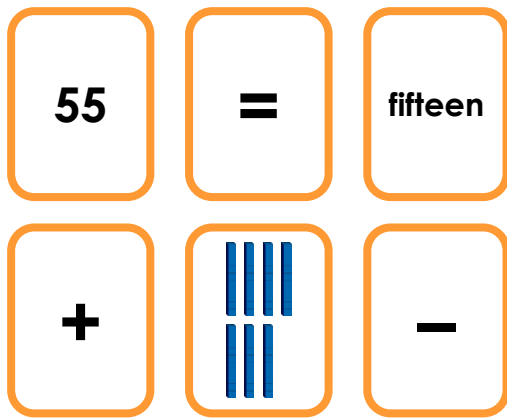


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## Bonds to 100 – Tens

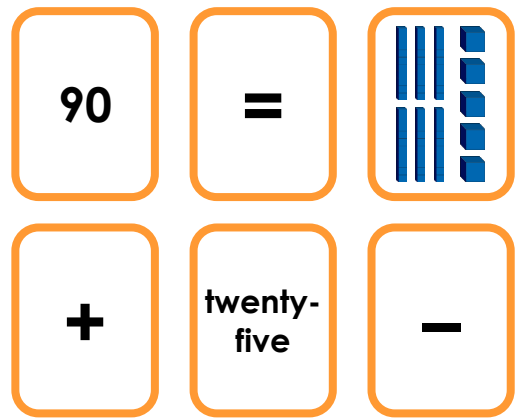
## Bonds to 100 – Tens

7a. Arrange the cards below to create a number sentence. Find all the possibilities.



PS

7b. Arrange the cards below to create a number sentence. Find all the possibilities.



PS

8a. Circle the incorrect number sentence below.

A. sixty-five + thirty = ninety-five

B. Fifty + forty-five = eighty-five

C. seventy-five = fifteen + sixty

Explain why it is incorrect.



R

8b. Circle the incorrect number sentence below.

A. thirty-five + fifty-five = ninety

B. thirty-five + thirty-five = seventy

C. one hundred = thirty + sixty-five

Explain why it is incorrect.



R

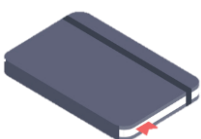
9a. Alec spends £90 on two or more items. Which items did he buy?  
Find all the possible combinations.



£15



£ ||



five pounds



fifty pounds



PS

9b. Leila spends £95 on two or more items. Which items did she buy?  
Find all the possible combinations.



£ |||



£35



twenty pounds



thirty pounds



PS

## Reasoning and Problem Solving

### Bonds to 100 – Tens

#### Developing

- 1a.  $70 + 30 = 100$ ;  $30 + 70 = 100$ ;  $100 = 70 + 30$ ;  $100 = 30 + 70$   
2a. B is incorrect as  $50 + 40 = 90$ , not 100 as the number sentence states.  
3a. Keyboard and microphone

#### Expected

- 4a.  $50 + 30 = 80$ ;  $30 + 50 = 80$ ;  $80 - 30 = 50$ ;  $80 - 50 = 30$ ;  $80 = 50 + 30$ ;  $80 = 30 + 50$ ;  $50 = 80 - 30$ ;  $30 = 80 - 50$   
5a. B is incorrect as fifty + forty = 90, not 100 as the number sentences states.  
6a. Drum and robot; keyboard and scooter

#### Greater Depth

- 7a.  $55 + \text{fifteen} = 70$ ;  $\text{fifteen} + 55 = 70$ ;  $70 - \text{fifteen} = 55$ ;  $70 - 55 = \text{fifteen}$ ;  $70 = 55 + \text{fifteen}$ ;  $70 = \text{fifteen} + 55$ ;  $\text{fifteen} = 70 - 55$ ;  $55 = 70 - \text{fifteen}$   
8a. B is incorrect as fifty + forty-five = ninety-five, not eighty-five as the number sentence states.  
9a. Camera, notebook and controller; camera, MP3, notebook and mouse

## Reasoning and Problem Solving

### Bonds to 100 – Tens

#### Developing

- 1b.  $90 + 10 = 100$ ;  $10 + 90 = 100$ ;  $100 = 90 + 10$ ;  $100 = 10 + 90$   
2b. A is incorrect as  $20 + 60 = 80$ , not 100 as the number sentence states.  
3b. Speaker and mixer

#### Expected

- 4b.  $20 + 70 = 90$ ;  $70 + 20 = 90$ ;  $90 - 20 = 70$ ;  $90 - 70 = 20$ ;  $90 = 20 + 70$ ;  $90 = 70 + 20$ ;  $70 = 90 - 20$ ;  $20 = 90 - 70$   
5b. C is incorrect as  $80 + \text{twenty} = \text{one hundred}$ , not ninety as the number sentence states.  
6b. Train and rocket; boat and helicopter

#### Greater Depth

- 7b.  $65 + \text{twenty-five} = 90$ ;  $\text{twenty-five} + 65 = 90$ ;  $90 - \text{twenty-five} = 65$ ;  $90 - 65 = \text{twenty-five}$ ;  $90 = 65 + \text{twenty-five}$ ;  $90 = \text{twenty-five} + 65$ ;  $\text{twenty-five} = 90 - 65$ ;  $65 = 90 - \text{twenty-five}$   
8b. C is correct as  $\text{thirty} + \text{sixty-five} = \text{ninety-five}$ , not one hundred as the number sentence states.  
9b. Headphones, USB and speaker; keyboard, tablet and headphones