

Reasoning and Problem Solving

Step 4: Make Arrays

National Curriculum Objectives:

Mathematics Year 1: (1N1b) [Count in multiples of twos, fives and tens](#)

Mathematics Year 1: (1C8) [Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Identify whether the statements are correct and explain reasoning. Using multiples of 2.

Expected Identify whether the statements are correct and explain reasoning. Using multiples of 2, 5 and 10.

Greater Depth Identify whether the statements are correct and explain reasoning. Using up to 10 columns or rows.

Questions 2, 5 and 8 (Problem Solving)

Developing Complete the array with obviously hidden buttons. Using multiples of 2.

Expected Complete the array with obviously hidden buttons. Using multiples of 2, 5 and 10.

Greater Depth Complete the array with subtly hidden buttons. Using up to 10 columns or rows.

Questions 3, 6 and 9 (Reasoning)

Developing Identify the odd one out from three statements and explain why. Using multiples of 2.

Expected Identify the odd one out from three statements and explain why. Using multiples of 2, 5 and 10.

Greater Depth Identify the odd one out from four statements and explain why. Using up to 10 columns or rows.

More [Year 1 Multiplication and Division](#) resources.

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

Make Arrays

1a.

My array has 5 columns with 2 in each column. I will need 7 counters to make it.



Is Heike correct? Explain your answer.



R

Make Arrays

1b.

I have 15 counters. I can make an array with 2 in each row using all the counters.



Is Caleb correct? Explain your answer.



R

2a. Complete the array.



PS

2b. Complete the array.



PS

3a. Which is the odd one out? Why?

$$2 + 2 + 2 = 6$$

There are 2 apples in each row. There are 4 rows.



R

3b. Which is the odd one out? Why?

$$2 + 2 + 2 + 2 = 8$$

There are 4 pears in each row. There are 4 rows.



R

Make Arrays

4a.

My array has 3 columns with 2 in each column. I will need 8 counters to make it.



Is Alisha correct? Explain your answer.



R

Make Arrays

4b.

I have 10 counters. I can make an array with 5 in each row.



Is Edward correct? Explain your answer.



R

5a. Complete the array.



PS

5b. Complete the array.



PS

6a. Which is the odd one out? Why?

$$10 + 10 = 20$$

There are 10 apples in each row. There are 3 rows.

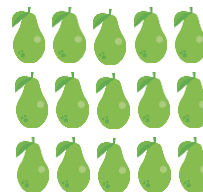


R

6b. Which is the odd one out? Why?

$$2 + 2 + 2 = 6$$

There are 5 pears in each row. There are 3 rows.



R

Make Arrays

7a.



My array uses 8 counters and has 1 more column than row. It has 2 in each row.

Is Henrick correct? Explain your answer.



R

Make Arrays

7b.



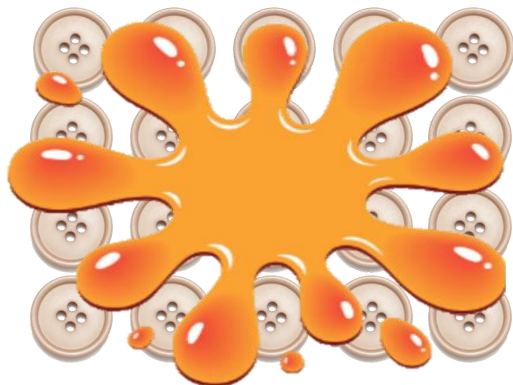
I have 15 counters. I can make an array with 5 in each row but not 5 in each column.

Is Phoebe correct? Explain your answer.



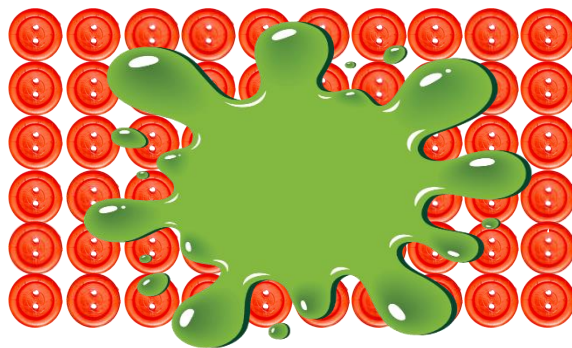
R

8a. Complete the array.



PS

8b. Complete the array.



PS

9a. Which is the odd one out? Why?

$5 + 5 + 5 + 5 = 20$	There are 5 apples in each column.
	There are 5 apples in each row.



R

9b. Which is the odd one out? Why?

	There are 5 columns.
$2 + 2 + 2 + 2 + 2 = 10$	There are 2 pears in each column.



R

Reasoning and Problem Solving

Make Arrays

Developing

1a. Heike is incorrect, she will need 10 counters to make her array.



3a. $2 + 2 + 2 = 6$. The calculation is the odd one out as it only adds up to 6, not 8.

Expected

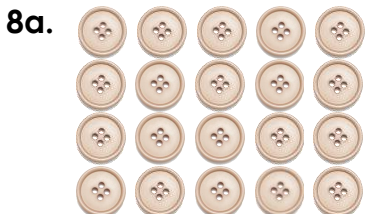
4a. Alisha is incorrect. She would only need 6 counters for 3 columns; $2 + 2 + 2 = 6$.



6a. The calculation is the odd one out as it only adds up to 20, not 30.

Greater Depth

7a. Henrick is incorrect, his array has 2 in each column and as there are 8 counters, there must be 4 columns, not 3.



9a. The column statement is the odd one out as there are 5 in each row.

Reasoning and Problem Solving

Make Arrays

Developing

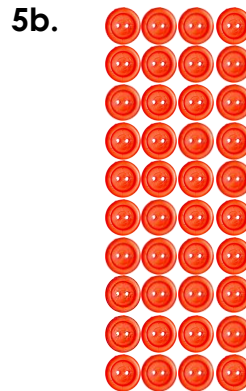
1b. Caleb is incorrect, he would need an even number of counters to make an array with 2 counters in each row.



3b. There are 4 pears in each row. There are 4 rows. The statements are the odd one out as it describes 4 rows of 4.

Expected

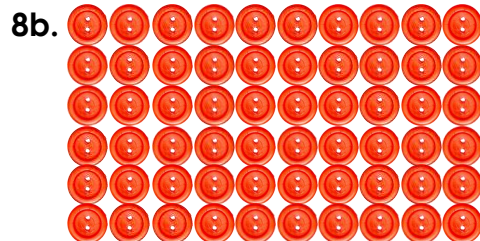
4b. Edward is correct. He would have 2 rows if there are 5 counters in each row.



6b. The calculation is the odd one out as it only adds up to 6, not 15.

Greater Depth

7b. Phoebe is incorrect. Using 15 counters she could make an array with 5 counters in each row (3 rows) or 5 counters in each column (3 columns).



9b. The array is the odd one out as the other statements all match 5 columns.