

# Reasoning and Problem Solving

## Step 2: Make Equal Groups – Grouping

### National Curriculum Objectives:

Mathematics Year 2: (2C6) [Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers](#)

Mathematics Year 2: (2C7) [Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication \( \$\times\$ \), division \( \$\div\$ \) and equals \(=\) signs](#)

Mathematics Year 2: (2C8) [Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts](#)

Mathematics Year 2: (2C9b) [Show that multiplication of two numbers can be done in any order \(commutative\) and division of one number by another cannot](#)

### Differentiation:

Questions 1, 4 and 7 (Problem Solving)

**Developing** Find which numbers can be put into equal groups of a given size and explain what they have in common. Pictorial support is aligned to reflect group sizes and all images are the same size; one to one correspondence; numerals only.

**Expected** Find which numbers can be put into equal groups of a given size and explain what they have in common. Pictorial support is not aligned and/or is a mix of sizes; one to one correspondence; numerals only.

**Greater Depth** Find which numbers can be put into equal groups of a given size and explain what they have in common. Includes no/children creating their own pictorial support; numerals and words.

Questions 2, 5 and 8 (Problem Solving)

**Developing** Find the largest and smallest possible number of equal groups that can be made from an amount. Differentiation the same as question 1.

**Expected** Find the largest and smallest possible number of equal groups that can be made from an amount. Differentiation the same as question 4.

**Greater Depth** Find the largest and smallest possible number of equal groups that can be made from an amount, then list other possibilities. Differentiation the same as question 7.

Questions 3, 6 and 9 (Reasoning)

**Developing** Explain which of two statements is correct. Differentiation the same as question 1.

**Expected** Explain which of two statements is correct. Differentiation the same as question 4.

**Greater Depth** Explain which two of three statements are correct. Differentiation the same as question 7.

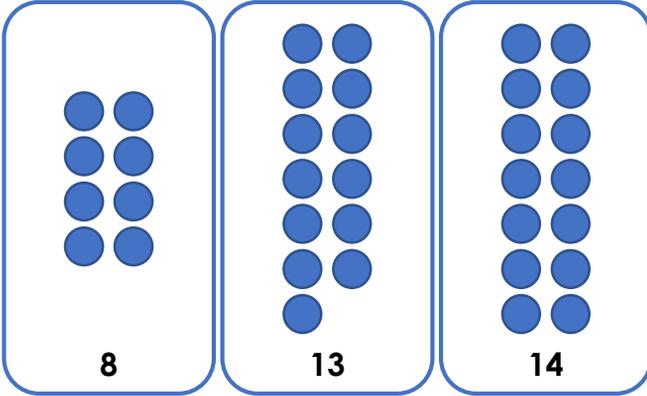
More [Year 2 Multiplication and Division](#) resources.

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

# Make Equal Groups – Grouping

# Make Equal Groups – Grouping

1a. Which of these numbers can be put into 2 equal groups?

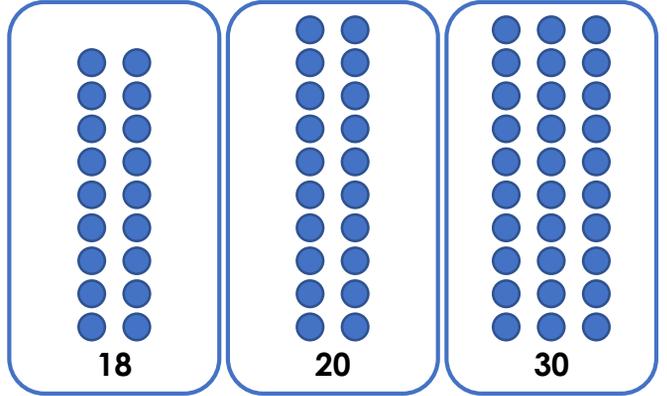


What do they have in common?



PS

1b. Which of these numbers can be put into 10 equal groups?

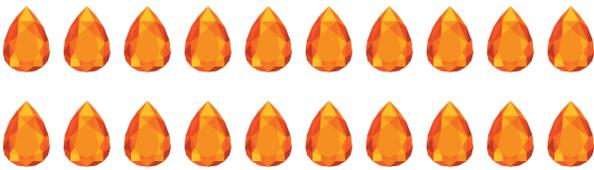


What do they have in common?



PS

2a. These 20 jewels need to be sorted into equal groups.



Apart from 20 groups of 1, what is the largest possible number of groups?

Apart from 1 group of 20, what is the smallest possible number of groups?



PS

2b. These 18 jewels need to be sorted into equal groups.



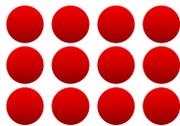
Apart from 18 groups of 1, what is the largest possible number of groups?

Apart from 1 group of 18, what is the smallest possible number of groups?



PS

3a. Zac and Toya have 12 counters.



12 in equal groups of 6 makes 3 groups.



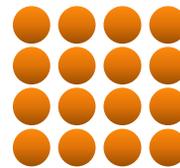
12 in equal groups of 4 makes 3 groups.

Who is correct? Explain why.



R

3b. Safi and Dev have 16 counters.



16 in equal groups of 2 makes 6 groups.



16 in equal groups of 4 makes 4 groups.

Who is correct? Explain why.

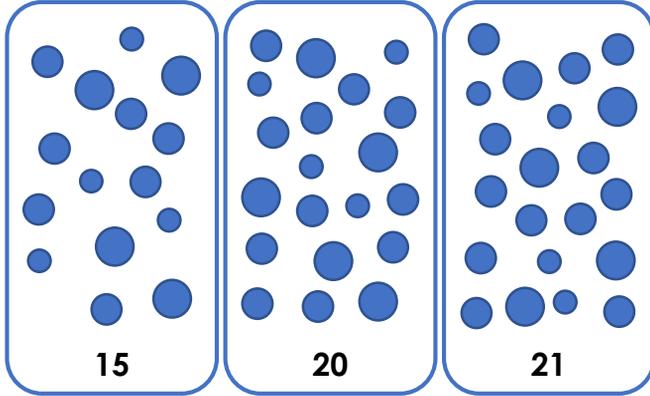


R

# Make Equal Groups – Grouping

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4a. Which of these numbers can be put into 5 equal groups?

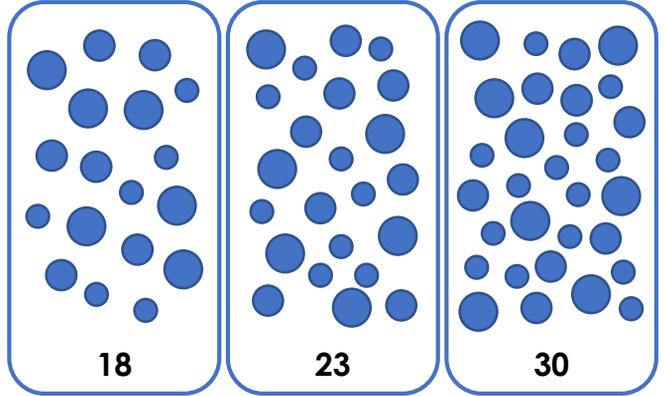


What do they have in common?



PS

4b. Which of these numbers can be put into 6 equal groups?



What do they have in common?



PS

5a. These 30 jewels need to be sorted into equal groups.



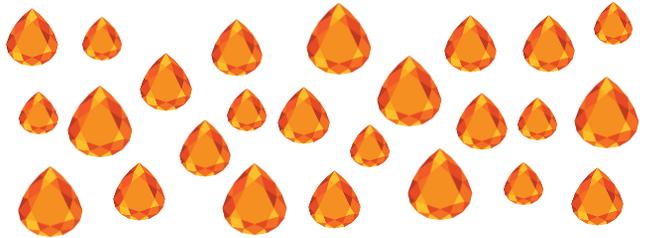
Apart from 30 groups of 1, what is the largest possible number of groups?

Apart from 1 group of 30, what is the smallest possible number of groups?



PS

5b. These 25 jewels need to be sorted into equal groups.



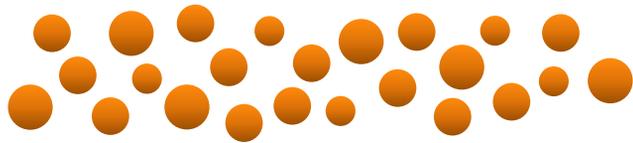
Apart from 25 groups of 1, what is the largest possible number of groups?

Apart from 1 group of 25, what is the smallest possible number of groups?



PS

6a. Mikal and Kia have 24 counters.



Mikal

24 in equal groups of 6 makes 5 groups.

24 in equal groups of 6 makes 4 groups.



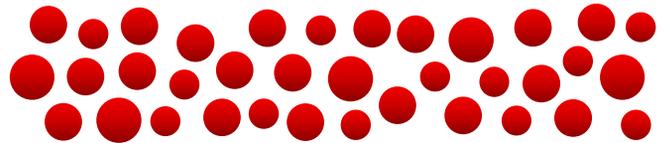
Kia

Who is correct? Explain why.



R

6b. Ella and Wes have 36 counters.



Ella

36 in equal groups of 6 makes 7 groups.

36 in equal groups of 4 makes 9 groups.



Wes

Who is correct? Explain why.



R

## Make Equal Groups – Grouping

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7a. Which of these numbers can be put into both three or four equal groups?

eighteen	28	thirty-six
12	thirty-two	21
sixteen	48	twenty-four

What do they have in common?



PS

7b. Which of these numbers can be put into both five or ten equal groups?

fifty	45	thirty-five
30	fifteen	20
twenty-five	22	forty

What do they have in common?



PS

8a. Fifty-six jewels need to be sorted into equal groups.



Apart from fifty-six groups of 1, what is the largest possible number of groups?

Apart from one group of 56, what is the smallest possible number of groups?

Find four more possible numbers of groups.



PS

8b. Thirty-six jewels need to be sorted into equal groups.



Apart from thirty-six groups of 1, what is the largest possible number of groups?

Apart from one group of 36, what is the smallest possible number of groups?

Find five more possible numbers of groups.



PS

9a. Zia, Ted and Deeba have 60 counters.

Sixty in equal groups of 10 makes six groups.



Zia



Ted

60 in equal groups of ten makes 7 groups.

Sixty in equal groups of five makes 12 groups.



Deeba

Who is correct? Explain why.



R

9b. Cole, Layla and Kai have 42 counters.

42 in equal groups of 8 makes five groups.



Cole



Layla

Forty-two in equal groups of 6 makes seven groups.

Forty-two in equal groups of 3 makes 14 groups.



Kai

Who is correct? Explain why.



R

## Reasoning and Problem Solving Make Equal Groups – Grouping

### Developing

- 1a. 8 and 14. The numbers are both multiples of 2/in the 2 times table.  
2a. Largest: 10. Smallest: 2.  
3a. Toya is correct because  $12 \div 3 = 4$ .

### Expected

- 4a. 15 and 20. The numbers are both multiples of 5/in the 5 times table.  
5a. Largest: 15. Smallest: 2.  
6a. Kia is correct because  $24 \div 4 = 6$ .

### Greater Depth

- 7a. thirty-six, 12, 48 and twenty-four. All the numbers are multiples of 3 and 4/are in the 3 and 4 times tables.  
8a. Largest: 28. Smallest: 2. Other possible numbers: 4, 7, 8, 14.  
9a. Zia and Deeba are correct because  $60 \div 6 = 10$  and  $60 \div 12 = 5$ .

## Reasoning and Problem Solving Make Equal Groups – Grouping

### Developing

- 1b. 20 and 30. The numbers are both multiples of 10/in the 10 times table.  
2b. Largest: 9. Smallest: 2.  
3b. Dev is correct because  $16 \div 4 = 4$ .

### Expected

- 4b. 18 and 30. The numbers are both multiples of 3 and 6/in the 3 and 6 times table.  
5b. Largest: 5. Smallest: 5.  
6b. Wes is correct because  $36 \div 9 = 4$ .

### Greater Depth

- 7b. fifty, 30, 20 and forty. All the numbers are multiples of 5 and 10/are in the 5 and 10 times tables.  
8b. Largest: 18. Smallest: 2. Other possible numbers: 3, 4, 6, 9, 12.  
9b. Layla and Kai are correct because  $42 \div 7 = 6$  and  $42 \div 14 = 3$ .