

Reasoning and Problem Solving

Step 1: Make Equal Groups – Sharing

Teaching note: We recommend using concrete manipulatives to support children's understanding of sharing into groups.

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](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Find 3 ways of sharing an amount. Pictorial support is aligned to reflect group sizes and all images are the same size; one to one correspondence used; numerals only.

Expected Find 3 ways of sharing an amount. Pictorial support is not aligned and uses a mix of sizes; one to one correspondence used; numerals only.

Greater Depth Calculate possible values when shared equally between groups. Includes no pictorial support; numerals only.

Questions 2, 5 and 8 (Problem Solving)

Developing Solve a two-step word problem when sharing between groups. Pictorial support given. Images are the same size; one to one correspondence used.

Expected Solve a two-step word problem when sharing between groups. Pictorial support is not aligned and uses a mix of sizes; one to one correspondence used.

Greater Depth Solve a two-step word problem when sharing between groups. Includes no pictorial support; numerals only.

Questions 3, 6 and 9 (Reasoning)

Developing Identify and explain which numbers which can be shared equally into 2 groups. Pictorial support given. Images are the same size; one to one correspondence used.

Expected Identify and explain which numbers can be shared equally in up to 6 groups. Pictorial support is not aligned and uses a mix of sizes; one to one correspondence used.

Greater Depth Identify and explain which numbers can be shared equally into 2 different sized groups. Includes no pictorial support; numerals and words.

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

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

Make Equal Groups – Sharing

1a. Jeanie has 16 strawberries. When she shares them equally into baskets, there are none left over.



How many baskets can she share the strawberries into so that every basket has the same amount?

Find 3 different amounts of baskets.



PS

Make Equal Groups – Sharing

1b. Chris has 18 marbles. When he shares them equally into jars, there are none left over.



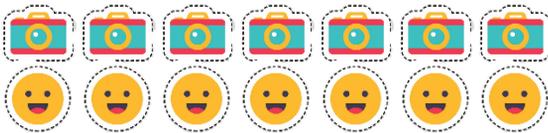
How many jars can he share the marbles into so that every jar has the same amount?

Find 3 different amounts of jars.



PS

2a. Eijah shares his stickers between 2 pencil cases. How many stickers are in each pencil case?



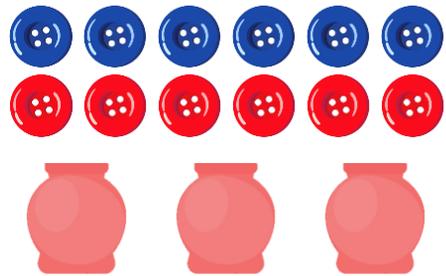
He loses 5 stickers.

Can Elijah re-share his stickers equally?



PS

2b. Amelia shares her buttons into 3 jars. How many buttons are in the jars?



She loses 4 buttons.

Can Amelia re-share her buttons equally?



PS

3a. Which of these numbers can create 2 equal groups?

17

14



Explain your choices.



R

3b. Which of these numbers can create 2 equal groups?

22

21



Explain your choices.

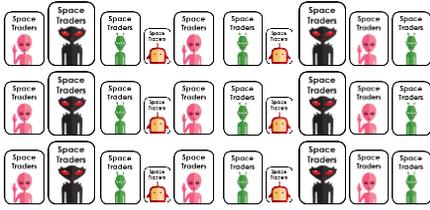


R

Make Equal Groups – Sharing

Make Equal Groups – Sharing

4a. Emilio has 30 trading cards. When he shares them equally into piles, there are none left over.



How many piles can he share the cards into so that every pile has the same amount?

Find 3 different amounts of piles.



PS

4b. Miss. Blythe has 24 chairs. When she stacks them equally, there are none left over.



How many towers can she stack the chairs into so that every tower has the same amount?

Find 3 different amounts of towers.



PS

5a. Tania shares her flowers between 4 vases. Each vase has 5 flowers.

How many flowers does Tania have altogether?



Tania gives away 2 flowers and 2 vases.

Can Tania re-share the flowers equally between the remaining vases?



PS

5b. Albie shares his cupcakes onto 3 plates. Each plate has 5 cupcakes.

How many cupcakes does Albie have altogether?



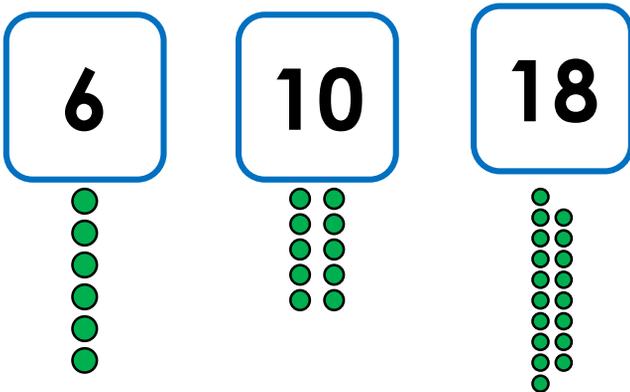
Albie eats 2 cupcakes and drops a plate.

Can Albie re-share the cupcakes equally between the remaining plates?



PS

6a. Which of these numbers can create 6 equal groups?

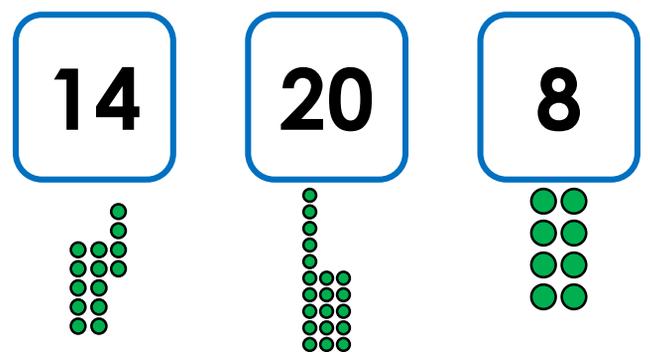


Explain your choices.



R

6b. Which of these numbers can create 4 equal groups?



Explain your choices.



R

Make Equal Groups – Sharing

Make Equal Groups – Sharing

7a. Elia has some sweets. When she shares them equally between her 7 friends, there are none left over.



She has fewer than 30 sweets in total. How many sweets could each friend have?



PS

7b. Dylan has some flower bulbs. When he puts them in 6 equal rows, there are none left over.



He has fewer than 30 bulbs in total. How many bulbs could be in each row?



PS

8a. Tyrone shares his conkers between 8 buckets. Each bucket has 5 conkers.

How many conkers does Tyrone have altogether?



Tyrone loses 4 conkers in a battle, and his Dad takes 2 of his buckets.

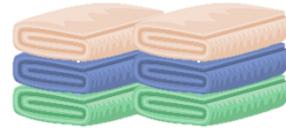
Can Tyrone re-share his conkers equally?



PS

8b. Dan tidies his towels on 4 shelves. Each shelf has 6 towels.

How many towels does Dan have altogether?



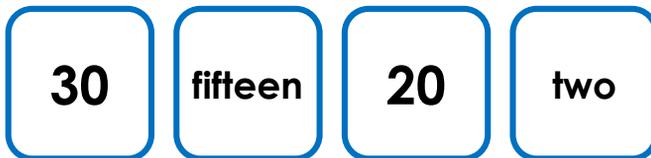
Dan's sister uses 4 towels. His Mum asks him to only use 2 shelves for towels.

Can Dan re-share the towels equally?



PS

9a. Which of these numbers can create equal groups of both 3 and 5?



Explain your choices.



R

9b. Which of these numbers can create equal groups of both 2 and 10?



Explain your choices.



R

Reasoning and Problem Solving Make Equal Groups – Sharing

Developing

1a. Various answers, for example: 2 baskets with 8 strawberries in each; 4 baskets with 4 in each; 8 baskets with 2 in each.

2a. 7 stickers in each pencil case. Elijah cannot re-share the remaining stickers as 9 cannot be shared equally between 2 groups.

3a. 14; $14 \div 2 = 7$. 17 cannot be shared equally as one group would have 8 and the other would have 9.

Expected

4a. Various answers, for example: 3 piles with 10 cards in each; 6 piles with 5 in each; 15 piles with 2 in each.

5a. 20 flowers altogether. Tania can re-share the remaining flowers as 18 can be shared equally between 2 groups.

6a. 18 and 6; $18 \div 6 = 3$ and $6 \div 6 = 1$. 10 would create unequal groups when shared between 6.

Greater Depth

7a. Various answers, for example: 3 sweets for each friend; 2 sweets for each friend, 1 sweet for each friend.

8a. 40 conkers altogether. Tyrone can re-share the remaining conkers as 36 can be shared equally between 6 groups.

9a. 30 and fifteen: $30 \div 5 = 6$, $30 \div 3 = 10$, $15 \div 5 = 3$, $15 \div 3 = 5$.

20 can be divided by 5 but it cannot be divided by 3. 2 cannot be divided by either 3 or 5.

Reasoning and Problem Solving Make Equal Groups – Sharing

Developing

1b. Various answers, for example: 3 jars with 6 marbles in each; 2 jars with 9 in each; 9 jars with 2 in each.

2b. 4 buttons in each jar. Amelia cannot re-share the remaining buttons as 8 cannot be shared equally between 3 groups.

3b. 22; $22 \div 2 = 11$. 21 cannot be shared equally as one group would have 10 and the other would have 11.

Expected

4b. Various answers, for example: 12 towers with 2 chairs in each; 4 towers with 6 in each; 8 towers with 3 in each.

5b. 15 cupcakes altogether. Albie cannot re-share the remaining cakes as 13 cannot be shared equally between 2 groups.

6b. 20 and 8; $20 \div 4 = 5$ and $8 \div 4 = 2$. 14 would create unequal groups when shared between 6.

Greater Depth

7b. Various answers, for example: 4 bulbs in each row; 3 bulbs in each row; 2 bulbs in each row.

8b. 24 towels altogether. Dan can re-share the remaining towels as 20 can be shared equally between 2 groups.

9b. ten and 40: $10 \div 2 = 5$; $10 \div 10 = 1$; $40 \div 2 = 20$, $40 \div 10 = 4$

Neither 25 nor 5 can be shared between 10 or 2, as they would both make unequal groups.