

Reasoning and Problem Solving

Step 9: Divide by 8

National Curriculum Objectives:

Mathematics Year 3: (3C6) [Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables](#)

Mathematics Year 3: (3C7) [Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Explain whether a statement is true or false using knowledge of dividing by 8. Up to 12×8 with pictorial support for each question where each digit is represented.

Expected Explain whether a statement is true or false using knowledge of dividing by 8. Up to 12×8 with scaffolding or pictorial support.

Greater Depth Explain whether a statement is true or false using knowledge of dividing by 8. Up to 12×8 with use of two representations.

Questions 2, 5 and 8 (Reasoning)

Developing Calculate and prove an answer using knowledge of dividing by 8. Up to 12×8 with pictorial support for each question where each digit is represented.

Expected Calculate and prove an answer using knowledge of dividing by 8. Up to 12×8 with scaffolding or pictorial support.

Greater Depth Calculate and prove an answer using knowledge of dividing by 8. Up to 12×8 with no scaffolding support provided.

Questions 3, 6 and 9 (Problem Solving)

Developing Use clues to identify a number using knowledge of dividing by 8. Up to 12×8 with pictorial support for each question where each digit is represented.

Expected Use clues to identify a number using knowledge of dividing by 8. Up to 12×8 with scaffolding or pictorial support.

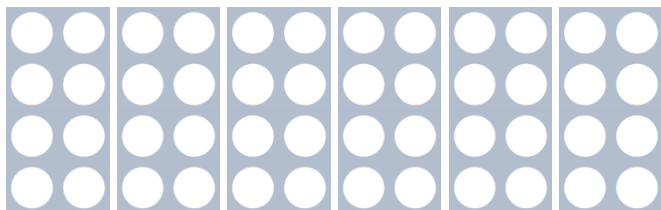
Greater Depth Use clues to identify a number using knowledge of dividing by 8. Up to 12×8 with no scaffolding support provided.

More [Year 3 Multiplication and Division](#) resources.

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

Divide by 8

1a. Hamish has used the representation below to calculate $56 \div 8$.

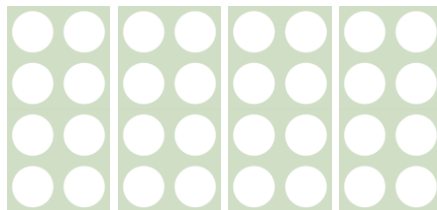


Is he correct?
Explain how you know.



R

1b. Bella has used the representation below to calculate $48 \div 8$.



Is she correct?
Explain how you know.



R

2a. Dean shares 24 biscuits onto plates. He puts 8 biscuits on each plate.



How many plates will Dean have?
Prove it.



R

2b. Louisa shares 40 sweets into bags. She puts 8 sweets into each bag.



How many bags will Louisa have?
Prove it.



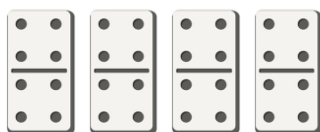
R

3a. George is thinking of a number between 20 and 38.



My number can be divided by 4 and by 8.
It is more than 25.

What could George's number be?



PS

3b. Cerys is thinking of a number between 40 and 65.



My number can be divided by 4 and by 8.
It has an 8 digit in it.

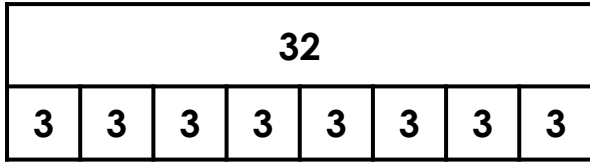
What could Cerys' number be?



PS

Divide by 8

4a. Hassan has used the representation below to calculate $32 \div 8$.

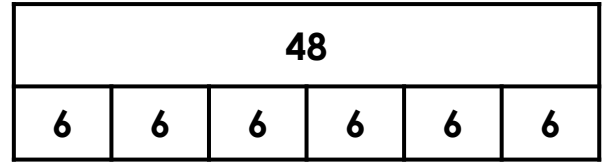


Is he correct?
Explain how you know.



R

4b. Pria has used the representation below to calculate $48 \div 8$.

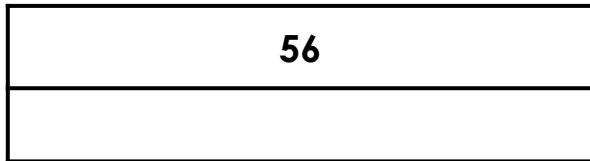


Is she correct?
Explain how you know.



R

5a. Ben shares 56 pens into pots.
He puts 8 pens in each pot.

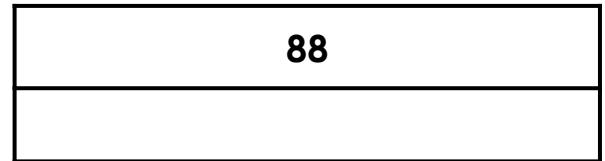


How many pots will Ben have?
Prove it.



R

5b. Li shares 88 gems into treasure chests.
She puts 8 gems in each chest.



How many chests will Li have?
Prove it.



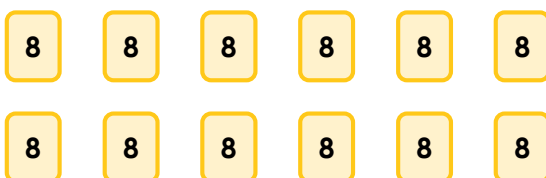
R

6a. Hannah is thinking of a number
between 35 and 50.



My number is divisible by 8
and 4.
My number is even.

What could Hannah's number be?



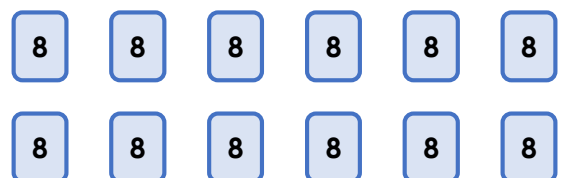
PS

6b. Pete is thinking of a number between
45 and 60.



My number is divisible by 8
and 4.
My number is even.

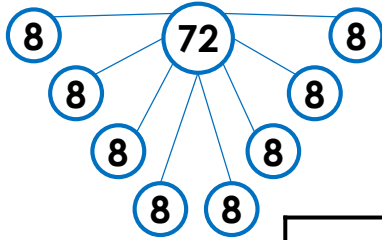
What could Pete's number be?



PS

Divide by 8

7a. Nadia has used two different representations to calculate $72 \div 8$.



72							
9	9	9	9	9	9	9	9

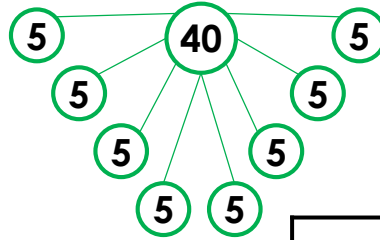
She gets two different answers.
Which one is incorrect?
Explain how you know.



R

Divide by 8

7b. Felix has used two different representations to calculate $40 \div 8$.



40			
10	10	10	10

He gets two different answers.
Which one is incorrect?
Explain how you know.



R

8a. Owen is putting sweets into bags.



If he puts 7 in each bag, he has 3 left over.
If he puts 8 in each bag, he has none left over.

How many sweets could he have in total?
Prove it.



R

8b. Ivy is putting pears into boxes.



If she puts 5 in each box, she has 1 left over.
If she puts 8 in each box, she has none left over.

How many pears could she have in total?
Prove it.



R

9a. Johan is thinking of a number that is greater than fifty but less than ninety.



My number is divisible by 8 and 4.

It has a digit sum of more than 10.

Both digits are more than four.

What could Johan's number be?



PS

9b. Lily is thinking of a number that is greater than twenty but less than fifty.



My number is divisible by 8 and 4.

It has a digit sum of 6.

Both digits are less than 6.

What could Lily's number be?



PS

Reasoning and Problem Solving

Divide by 8

Developing

1a. He is incorrect because $56 \div 8 = 7$. There should be 7 lots of 8 number pieces or 8 lots of 7 number pieces.

2a. 3 plates because $24 \div 8 = 3$.

3a. 32

Expected

4a. He is incorrect because $32 \div 8 = 4$. The bar model should have 8 parts with 4 in each part, or 4 parts with 8 in each part.

5a. 7 pots because $56 \div 8 = 7$.

6a. 40 or 48

Greater Depth

7a. The part-whole model is incorrect because $72 \div 8 = 9$. There should be 8 parts with 9 in each part, or 9 parts with 8 in each part.

8a. 24 or 80 because if you subtract 3 from each of these number you're left with multiple of 7 (21 or 77).

9a. 56 or 88

Reasoning and Problem Solving

Divide by 8

Developing

1b. She is incorrect because $48 \div 8 = 6$. There should be 6 lots of 8 number pieces or 8 lots of 6 number pieces.

2b. 5 bags because $40 \div 8 = 5$.

3b. 48

Expected

4b. She is incorrect because $48 \div 8 = 6$. The bar model should have 8 parts with 6 in each part, or 6 parts with 8 in each part.

5b. 11 treasure chests $88 \div 8 = 11$.

6b. 48 or 56

Greater Depth

7b. The bar model is incorrect because $40 \div 8 = 5$. The bar model should have 8 parts with 5 in each part, or 5 parts with 8 in each part.

8b. 16, 56 or 96 because one less than each of these numbers is a multiple of 5 (15, 55 or 95).

9b. 24