## 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 $12 \times 8$ 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 $12 \times 8$ with scaffolding or pictorial support.
Greater Depth Explain whether a statement is true or false using knowledge of dividing by
8. Up to $12 \times 8$ 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 $12 \times 8$ 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 $12 \times 8$ with scaffolding or pictorial support.
Greater Depth Calculate and prove an answer using knowledge of dividing by 8. Up to 12 x 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 $12 \times 8$ 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 $12 \times 8$ with scaffolding or pictorial support.
Greater Depth Use clues to identify a number using knowledge of dividing by 8 . Up to 12 x 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.


Is he correct？
Explain how you know．
吅
2a．Dean shares 24 biscuits onto plates． He puts 8 biscuits on each plate．

How many plates will Dean have？
Prove it．
同
3a．George is thinking of a number between 20 and 38.


What could George＇s number be？


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


Is she correct？
Explain how you know．風
2b．Louisa shares 40 sweets into bags． She puts 8 sweets into each bag．


How many bags will Louisa have？
Prove it．

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


What could Cerys＇number be？

## Divide by 8

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

| 32 |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

Is he correct？
Explain how you know．

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

## 10 日 日 日 日 日

56

How many pots will Ben have？
Prove it．

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


What could Hannah＇s number be？


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


Is she correct？
Explain how you know．

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


| 88 |
| :---: |
|  |

How many chests will Li have？
Prove it．
约
6b．Pete is thinking of a number between 45 and 60.


What could Pete＇s number be？


## Divide by 8

Divide by 8

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

## 8

(8)
(8)

8

| 72 |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |

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

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


What could John's number be?

7b. Felix has used two different representations to calculate $40 \div 8$.
(5)
40
(5)
5
(5)
5) 5

| 40 |  |  |  |
| :---: | :---: | :---: | :---: |
| 10 | 10 | 10 | 10 |

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

8 b . 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.

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


What could Lily's number be?

## Reasoning and Problem Solving Divide by 8

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## 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 $56 \div 8=7$.
6 a. 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.
8 a. 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

## 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 $88 \div 8=11$.
6 b. 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

