

Division Prior Assessment Question 1

Objective: I use my understanding of multiplication facts and place value to mentally work out division calculations.

NC: NDM5: multiply and divide numbers mentally drawing upon known facts

Teacher Input Ideas: *This lesson requires the children to use knowledge of \div and \times by 10 and 100 so teaching lessons \times and \div by 10, 100 and 1000 first, may be beneficial.*

Look through question 1 of the prior learning assessment. Encourage the children to discuss how they got the answers and promote the use of mental methods. Children can share in small or large groups and model to each other their methods.

Place $54 \div 6$ on the white board. If children used written strategies in the prior learning assessment, model to the children that for some sums this does not help as you still need to carry the 5 (50) into the ones column therefore you still have the same calculation to work out, $54 \div 6$. The children should suggest that we can use the inverse and use multiplication. So rather than reading it as $54 \div 6$, we can think of it as how many lots of 6 do I need to make 54: $? \times 6 = 54$.

With this we are using our knowledge of multiples and factors. 54 is a multiple of 6. What is the factor pair for 54: 6 and ?. Children should be able to say that 6×9 is 54. Therefore, the answer to $54 \div 6 = 9$.

Then encourage the children to think about what other calculations they can work out.

$$54 \div 6 = 9$$

$$540 \div 6 =$$

$$540 \div 60 =$$

$$5400 \div 60 =$$

$$5400 \div 6 =$$

For children that struggle to see the link with place value, use a blank place value chart to show the children how we can use the fact $54 \div 6$ and then use our knowledge of \div and \times by 10, 100 to help.

Practice Activities:

Purple Practice: Most suited for children who demonstrated difficulty in using mental methods for Q1 of the prior learning assessment.

For this activity the children are provided with 4 blocks for each question. The children are to work out the answer to the first simple division sum using their knowledge of times tables. The children are then required to look at the link when some of the amounts may be 10 or 100 times bigger. The children may benefit from the use of a place value chart.

Green Practice: Most suited for children who made errors in Q1 of the prior learning assessment (especially c, d & e) and need to secure the link between multiplication and division.

For this activity the children are provided with examples of division and multiplication sums and the link between how sums can be expressed. The examples also show the link with using place value when numbers are ten and hundred times larger.

Using the examples, the children are to create their own sums using the blocks at the bottom of the sheet,

Yellow Practice: Most suited for children who demonstrate understanding of using times table facts and place value and will benefit from applying this knowledge to missing number calculations.

This activity provides the children with the opportunity to apply their knowledge of x table facts and place value to find the answers to missing box problems. The children should be able to use the information that they have and use inverse operations to solve the problems. The last 4 questions require the children to find missing box answers for calculations that both give the same answer as the = sign is in the middle of the problem (for example $6 \times 4 = 240 \div 10$).

Mastery: Fluency

Children are to use their understanding of place value and x table facts to work out the answers for the questions. The children are encouraged to work quickly and mentally.

You may want to ask the children to explain how they worked out the answers, to ensure that the children have a good understanding of place value and are not just taking off the zeroes. The children could work in pairs and race against each other to encourage working at speed mentally.

Answers:

Purple:

- | | | |
|------|------|------|
| 1) 7 | 2) 4 | 3) 3 |
| 70 | 40 | 30 |
| 7 | 4 | 3 |
| 700 | 400 | 300 |

4) 7

70

7

700

5)4

40

4

400

6) 90

9

90

9

Yellow:

1) 40

2)60

3) 8

4) 900

5) 90

6) 700

7)6600

8) 120

9) 240

10)8

11) examples 1×60 , 2×30 , 30×2 , 10×60

12) 200

Mastery

360 ÷ 6 = 60

720 ÷ 90 = 8

210 ÷ 3 = 70

5600 ÷ 8 = 700

4900 ÷ 70 = 70

1400 ÷ 20 = 70

900 ÷ 30 = 30

7700 ÷ 7 = 1100

1100 ÷ 11 = 100

1440 ÷ 120 = 12

99 ÷ 3 = 33

121 ÷ 11 = 11

6400 ÷ 80 = 80

480 ÷ 4 = 120

Look at each set of blocks and calculate the answers to the division sums. Use your knowledge of your times table facts and place value to help.

1)

$56 \div 8 =$

$560 \div 8 =$

$560 \div 80 =$

$5600 \div 8 =$

2)

$36 \div 9 =$

$360 \div 9 =$

$360 \div 90 =$

$3600 \div 9 =$

3)

$21 \div 7 =$

$210 \div 7 =$

$210 \div 70 =$

$2100 \div 7 =$

4)

$77 \div 11 =$

$770 \div 11 =$

$770 \div 110 =$

$7700 \div 11 =$

5)

$16 \div 4 =$

$160 \div 4 =$

$160 \div 40 =$

$1600 \div 4 =$

6)

$90 \div 1 =$

$90 \div 10 =$

$900 \div 10 =$

$900 \div 100 =$

LO: I use my knowledge of times table facts and place value to help work out division sums.

Look at the links between multiplication and division below. Using one times table fact, different links have been made.

3 x 7

x **÷**

$3 \times 7 = 21$	$21 \div 7 = 3$
$7 \times 3 = 21$	$21 \div 3 = 7$
$70 \times 3 = 210$	$210 \div 3 = 70$
$7 \times 30 = 210$	$210 \div 7 = 30$
$70 \times 30 = 2100$	$2100 \div 30 = 70$

6 x 7

x **÷**

$6 \times 7 = 42$	$42 \div 7 = 6$
$7 \times 6 = 42$	$42 \div 6 = 7$
$6 \times 70 = 420$	$420 \div 70 = 6$
$60 \times 7 = 420$	$420 \div 60 = 7$
$60 \times 70 = 4200$	$4200 \div 60 = 70$

3 x 4

x **÷**

$3 \times 4 = 12$	$12 \div 4 = 3$
$4 \times 3 = 12$	$12 \div 3 = 4$
$30 \times 4 = 120$	$120 \div 4 = 30$
$40 \times 3 = 120$	$120 \div 3 = 40$
$30 \times 40 = 1200$	$1200 \div 40 = 30$
$40 \times 30 = 1200$	$1200 \div 30 = 40$

5 x 2

x **÷**

$5 \times 2 = 10$	$10 \div 2 = 5$
$2 \times 5 = 10$	$10 \div 5 = 2$
$50 \times 2 = 100$	$100 \div 2 = 50$
$20 \times 5 = 100$	$100 \div 5 = 20$
$50 \times 20 = 1000$	$1000 \div 5 = 200$
$20 \times 50 = 1000$	$1000 \div 2 = 500$

Pick a block at a time to create your own examples

2 x 9

5 x 7


























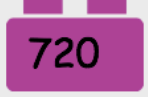









5 x 10

4 x 5

Yellow Practice

Lo: I use my knowledge of x table facts and place value to work out division sums mentally.

Look at each calculation. Fill in the missing blocks.

- 1)  ÷  8 =  5
- 2) 540 ÷  9 = 
- 3) 640 ÷  =  80
- 4)  ÷  30 =  30
- 5) 6300 ÷  70 = 
- 6) 2100 ÷  =  3
- 7)  ÷  11 =  600
- 8) 1440 ÷  =  12
- 9)  6 ×  4 =  ÷  10
- 10)  ×  9 =  720 ÷  10
- 11)  2400 ÷  40 =  × 
- 12)  1200 ÷  =  42 ÷  7

Work your way along the track finding the answers mentally. You may want to challenge yourself by timing how long it takes.

$$360 \div 6$$

$$720 \div 90$$

$$210 \div 3$$

$$5600 \div 8$$

$$4900 \div 70$$

$$1400 \div 20$$

$$900 \div 30$$

$$7700 \div 7$$

$$1100 \div 11$$

$$1440 \div 120$$

$$99 \div ? = 33$$

$$121 \div ? = 11$$

$$6400 \div ? = 80$$

$$? \div 4 = 120$$

Discuss with a friend how you worked out some of the sums.