Division Prior Assessment Question 3,4 and 5

Objective: I can divide a 4 digit number by a 1 digit number using the formal short division method.

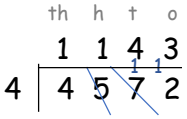
NC: NASDM 3 divide numbers up to 4 digits by a two-digit number using the formal written method of short division.

Teacher Input Ideas:

Could set up a context for using division, such as presenting word problems relevant to the children or school topic with up to 4 digit amounts. Alternatively, children could have division sums displayed around the class and they can pick 4 they would like to work out.

Ask the children how they worked out different sums and encourage the children to model their method. Question the children about how they decided if they were going to do it mentally or use a written strategy.

Place 4572 on the board. How can I divide this by 4? Take suggestions from the children. Some may suggest halving and halving again. Model using the short division written strategy.



Ensure that the children know and understand place value here and that they are not just memorising a written method but understand why it works. Writing little place value initials can help children to explain.

For example:

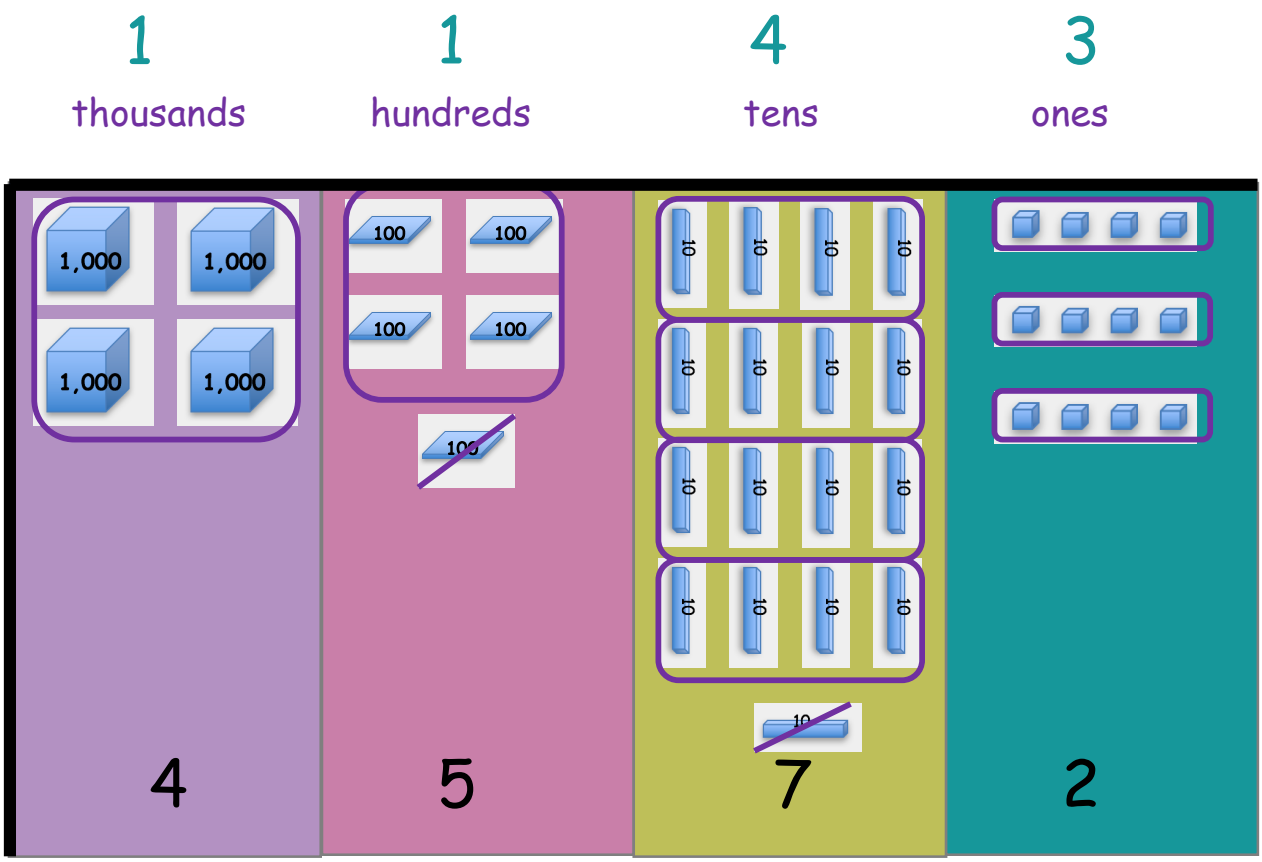
4000 divided by 4 is 1000
500 divided by 4 is 100 remainder 100
170 divided by 4 is 40 remainder 10
12 divided by 4 is 3

Some people also say as they are modelling.

4 goes into 4000, 1 thousand times so I place a 1 in the thousands place
4 goes into 500, 1 hundred times so I place a 1 in the hundreds place but I have 1 hundred left over, so I carry this over.
4 goes into 170, 40 times, so I place a 4 in the tens place, but I have a ten left over, so I carry it over.
4 goes into 12, 3 times.

Additionally, a place value chart with thousands, hundreds, tens and units blocks or images can help those children who are finding it difficult.

4



For example, the children could think of the sum as how many groups of 4

? x 4 = 4572

I can make 1 group of 4 in the thousands place (with 4 thousands)
I can make 1 group of 4 in the hundreds place (with 5 hundreds) but I have 1 hundred left over.
I can make 4 groups of 4 in the tens place (with 17 tens, also the same as 170) but I have 1 ten left over.
I can make 3 groups of 4 in the ones place (with the 12 ones or 1 ten and 2 ones)

Practice Activities:

Purple Practice: most suited for children who made errors in Q3,4 and 5 and do not yet have a secure understanding of the short division method. Additionally, these children will benefit from answering questions without remainders and securing understanding of carrying over and dividing with 0.

The children should answer the question on each block and understand that when the sum is presented in this way it is a division sum. The children should also be able to record the sum they have done in a number sentence and write this in the green box underneath the sum. The children could also be encouraged to look at each question and estimate the answer. Some of the questions can also be performed mentally so encourage the children use these methods too when appropriate.

If children lack understanding of what they are doing when using the method, encourage the use of place value charts and apparatus. The second purple page can be cut up for the children to use too alongside a place value mat/chart.

Green Practice: most suited for children who made 1 or 2 errors in Q3,4 or 5 and would benefit from securing their understanding of division written methods including remainders.

This activity encourages the children to work out the division question and many include remainders. In this session, the children can write the remainder next to the amount as a whole number. The activities for Question 7 of the prior learning assessment support the children with looking at the remainder as a fraction and decimal, which you may want to explore in another lesson. Additionally, the children should be encouraged to work out some of the sums mentally.

The second part of the activity is a fluency opportunity for the children to use their knowledge of rounding and number facts such as multiples and factors. This question gives the children opportunity to select blocks to make an answer as close to 400 as possible. The children should use their knowledge of multiples and factors to help them to rule out options straight away and then apply the written method of short division to work out the answer.

Yellow Practice: Most suited for children who demonstrate understanding of using the short multiplication method and can apply this to solve problems.

This activity provides the children with the opportunity to apply their knowledge of written and mental methods to solve problem. The children need to work out where to

place symbols and numbers to make each statement correct. Encourage the children to start with ones that may be easier to solve such as the second question. Which numbers do you feel are more likely to be placed here? Children to test if this work applying written methods. Then encourage the children to think about looking for other clues or trial points. The children should be able to apply and use trial and improvement skills in this activity.

Mastery: this activity requires the children to apply their knowledge of the relationship between factors, multiples and divisors. Allow the children time to suggest how they can solve this problem. Some children may need prompting to understand that for it to be a multiple of a number it must be divisible by that number. Children should suggest dividing 9864 by each number block to help decide if they should circle it or not. For the challenge the children should be able to identify that the factors will be the divisor and the answer to the division sum. Some children may suggest using the short multiplication method to check their answers.

Prompt the children through questioning:

- What does the word multiple mean? What do know about multiples? How can this help? How can we use the information we have?
- What methods and strategies can you use?
- How can you use the information you have found out to find the factors? Can you suggest a way of checking your answers?

Answers:

Purple:

1) 693 ÷ 3 = 231
2) 844 ÷ 4 = 211
3) 6048 ÷ 2 = 3024
4) 255 ÷ 5 = 51
5) 642 ÷ 6 = 107
6) 6309 ÷9 = 701
7) 1251 ÷ 3 = 417
8) 4970 ÷ 7 = 710
9) 1600 ÷ 8=200
10) 924÷6 =154
11) 5392 ÷ 4 = 1348
12) 6104 ÷8 = 763

Green:

1)

a) 324 ÷ 6 = 54
b) 5261 ÷ 5 = 1052 r 1
c) 8727 ÷ 6 = 1454r3
d) 3200 ÷ 4= 800
e) 5362 ÷ 3 = 1787r1
f) 8921 ÷ 9 = 991 r2
g) 67 ÷ 10 = 6.7
h) 810 ÷ 9 = 90
i) 8098 ÷ 4 = 2024 r2
j) 6809 ÷ 3 = 2269r2

2) 3267 ÷ 8

Yellow:

9 x 6 2826 x 4 = 14 ÷ < 3206

2916 ÷ 9 = 81 x 4

3206 ÷ 7 > 2826 ÷ 9

5478 ÷ 6 < 8920

8912 x 5 = 4456 x 10

9744 ÷ 6 = 14 x 116

Mastery

1,2,3,4,6,8,9 should all be circled

The children should have worked this out by understanding that for it to be a multiple of a number it must be divisible by that number. Children should have applied the short multiplication method to divide the amount by each block, if they have no remainders then it is divisible by that number.

The children should then have used the answers to help find factor pairs

1 and 9864 2 and 4932 3 and 3288

4 and 2466 6 and 1644 8 and 1233

9 and 1096

BRICKWORK
Mathematics

Purple Practice

Lo: I can use the short division method to divide up to a 4 digit number by a 1 digit number

Look at the sum in each block. Use the short division method to work out the answer to each sum. Write the sum you have performed and the answer in the green box underneath.

1) $3\overline{)693}$

693 ÷ 3 =

2) $4\overline{)844}$

3) $2\overline{)6048}$

4) $5\overline{)255}$

5) $6\overline{)642}$

6) $9\overline{)6309}$

7) $3\overline{)1251}$

8) $7\overline{)4970}$

9) $8\overline{)1600}$

10) $6\overline{)924}$

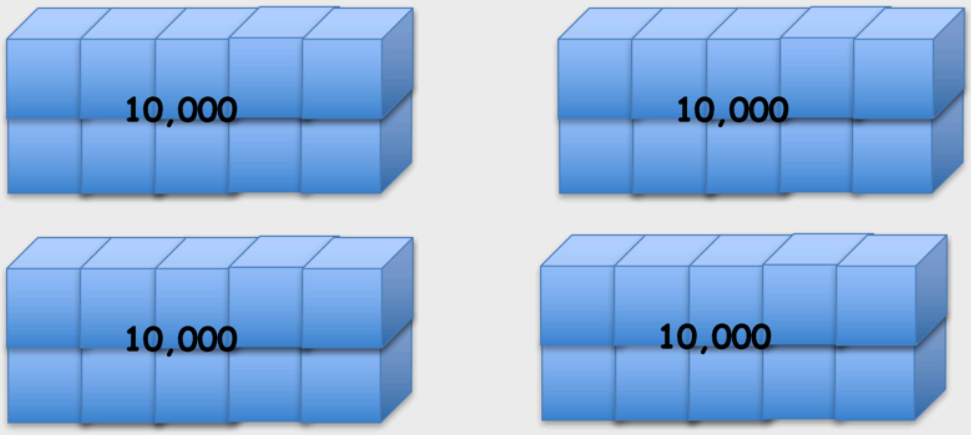
11) $4\overline{)5392}$

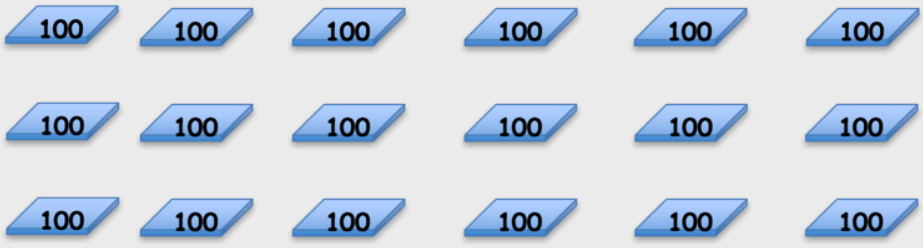
12) $8\overline{)6104}$

BRICKWORK
Mathematics

Purple support sheet

Place value





ones

BRICKWORK Mathematics

Green Practice

Lo: I can use the short division method to divide up to a 4 digit number by a 1 digit number

1) Look at each sum and workout the answer to each question.

a) 324 ÷ 6 =

b) 5261 ÷ 5 =

c) 8727 ÷ 6 =

d) 3200 ÷ 4=

e) 5362 ÷ 3 =

f) 8921 ÷ 9 =

g) 67 ÷ 10 =

h) 810 ÷ 9 =

i) 8098 ÷ 4 =

j) 6809 ÷ 3 =

2) Which of these blocks should be used to give the answer closest to 400?

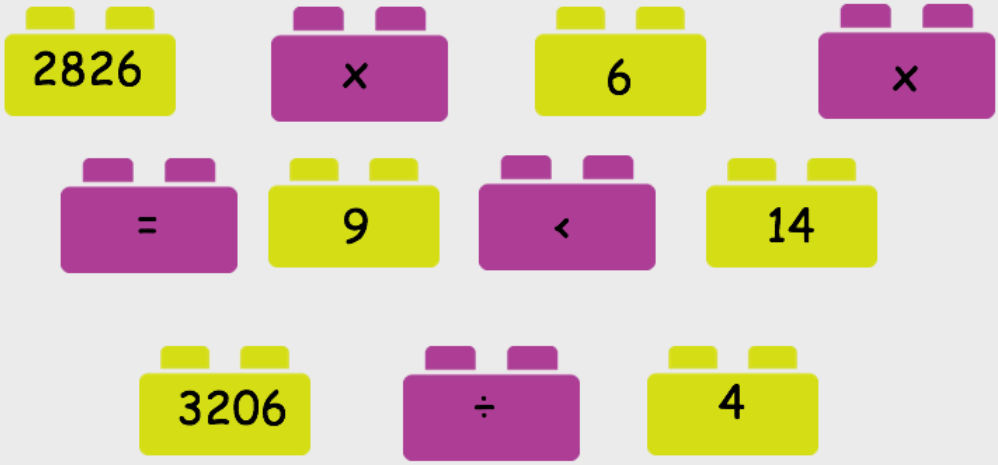
☐ ÷ ☐ = ☐

BRICKWORK Mathematics

Yellow Practice

LO: I can apply my knowledge of using written methods.

Choose where to place each block so that each number sentence is correct. Each block can only be used once.



2916 ÷ ☐ = 81 × ☐

☐ ÷ 7 > ☐ ÷ 9

5478 ☐ 6 ☐ 8920

8912 ☐ 5 ☐ 4456 ☐ 10

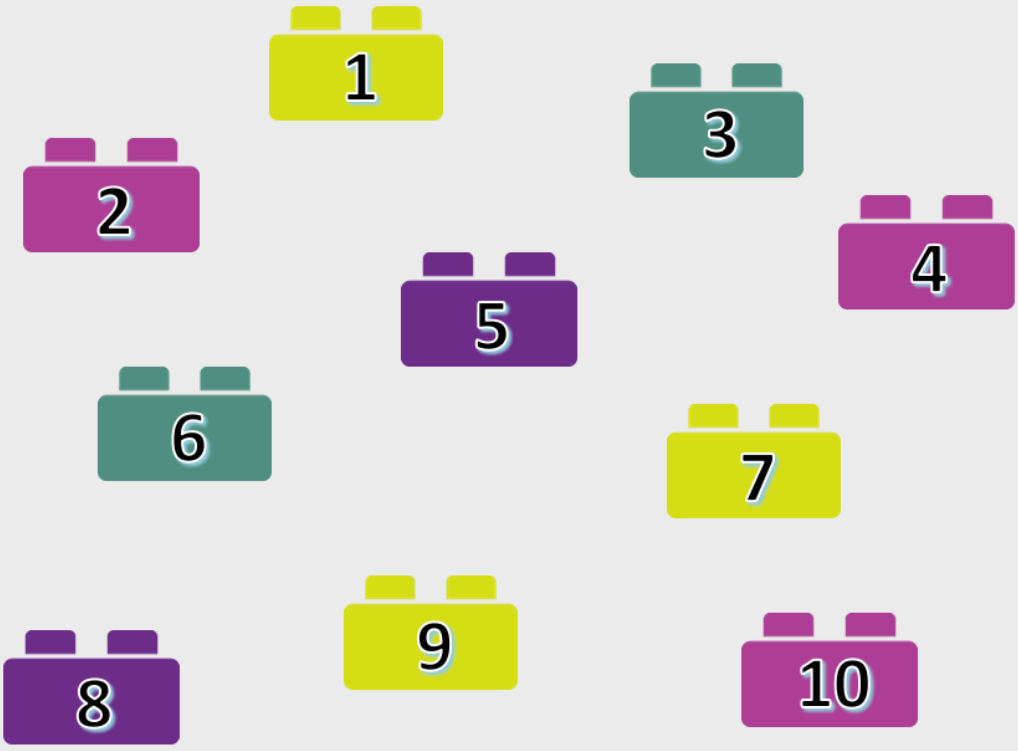
9744 ÷ ☐ = ☐ × 116

BRICKWORK
Mathematics

Mastery

Fluency

1. Circle the blocks that **9864** is a multiple of:



Explain to a friend how you worked it out. What can you show them to prove that you are right?

Challenge: Use your calculations to help you answer the question below.

Write 4 different factor pairs of 9864:

and

and

and

and