Division Prior Assessment Question 3,4,5,6 and 7

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

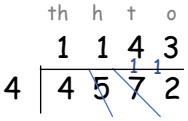
NC: NDM 6: divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.

Teacher Input Ideas:

A context for using division, such as presenting word problems relevant to the children or school topic, could be used to introduce division methods. 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 methods. 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. Discuss if this is efficient. 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:

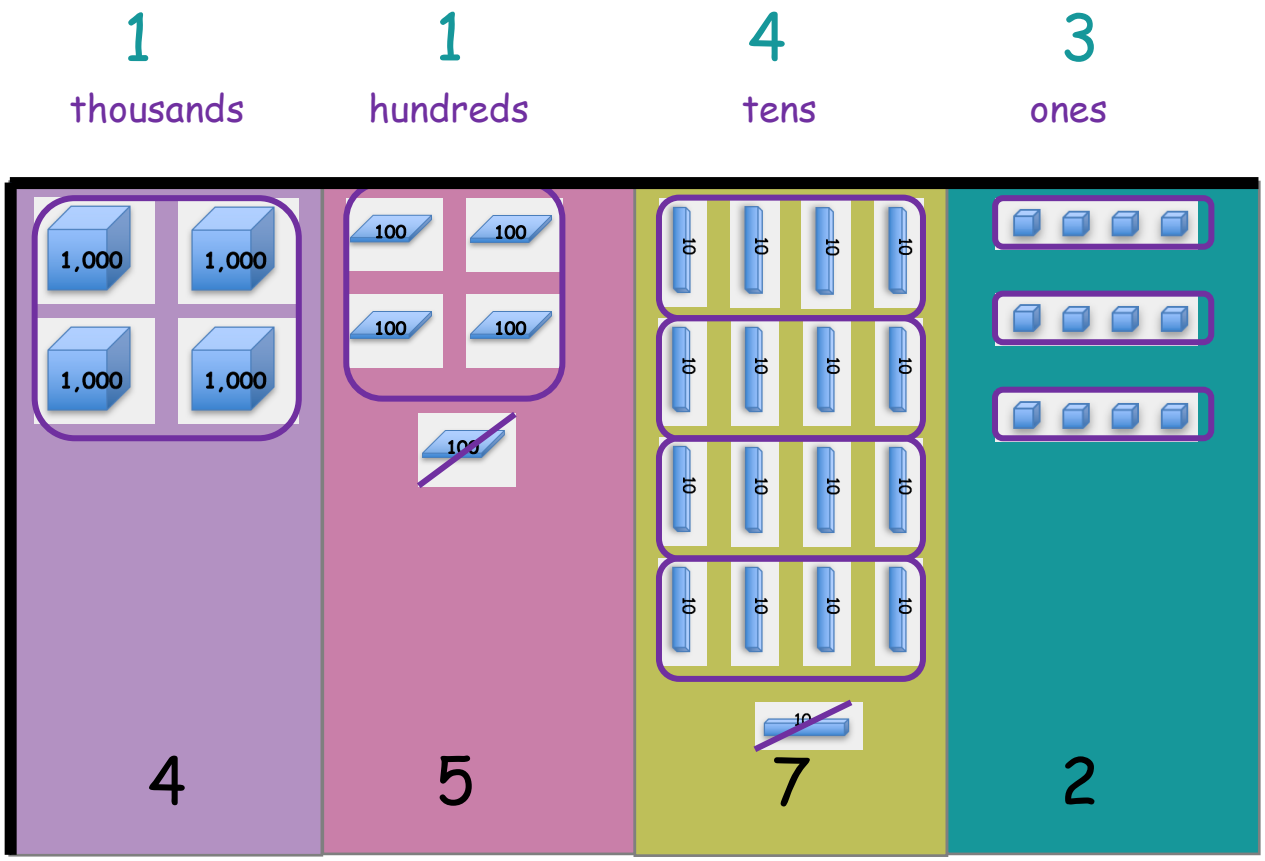
4000 divided by 4 is 1000
500 divided by 4 is 100 remainder 100
170 divided by 4 is 40 remainder 10
12 divided by 4 is 3

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 Questions 3,4,5,and 6 and will benefit from exploring written division with the use of practical resources.

The children are provided with a division mat where the children can present sums practically. Provide the children with 3 and 4 digit amounts to divide by a 1 digit number (you may want to ensure there are no remainders to start with). Children to use base ten, objects or the purple resource sheet to make the amounts in each column. Children to then see how many groups of the divisor can be made (as in input). The mats can be laminated for repeated use and photographs can be taken to record learning. Once children demonstrate understanding, encourage the children to move on to the green activity.

Green Practice: most suited for children who made errors in Q 4 and 6, 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 completed 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.

Yellow Practice:. most suited for children who made errors in question 7 and will benefit from securing their understanding of division written methods including remainders.

This activity encourages the children to work out the answers to division sums which many include remainders. Additionally, the children should suggest using mental methods for some of the questions. Such as 3200 divide by 4.

The children should also understand that in the challenge there will be a remainder as the unit is a 3 and multiples of 6 do not end in 3, only even numbers.

Mastery: This 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.

Answers:

Green:

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

Yellow:

a) 324 ÷ 6 = 54
b) 5261 ÷ 5 = 1052 r 1
c) 8727 ÷ 6 = 1454r3
d) 3200 ÷ 4= 800
e) 5362 ÷ 3 = 1787r1
f) 5436 ÷ 8 = 679 r 4
g) 8921 ÷ 9 = 991 r2
h) 67 ÷ 10 = 6.7
i) 810 ÷ 9 = 90
j) 8098 ÷ 4 = 2024 r2
k) 6809 ÷ 3 = 2269r2
l) 3426 ÷ 7 =589 r 3

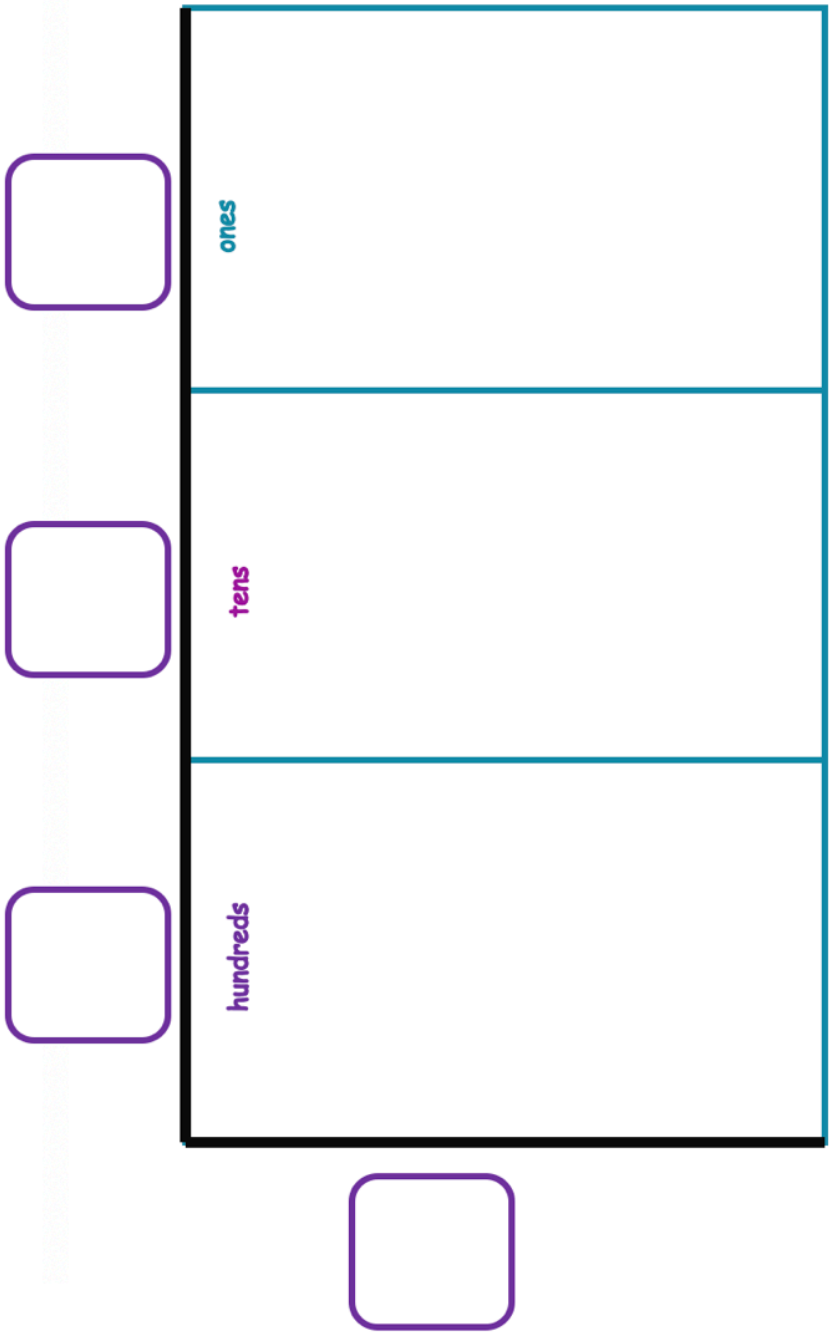
Mastery

3267 ÷ 8

BRICKWORK Mathematics

Purple Practice 1

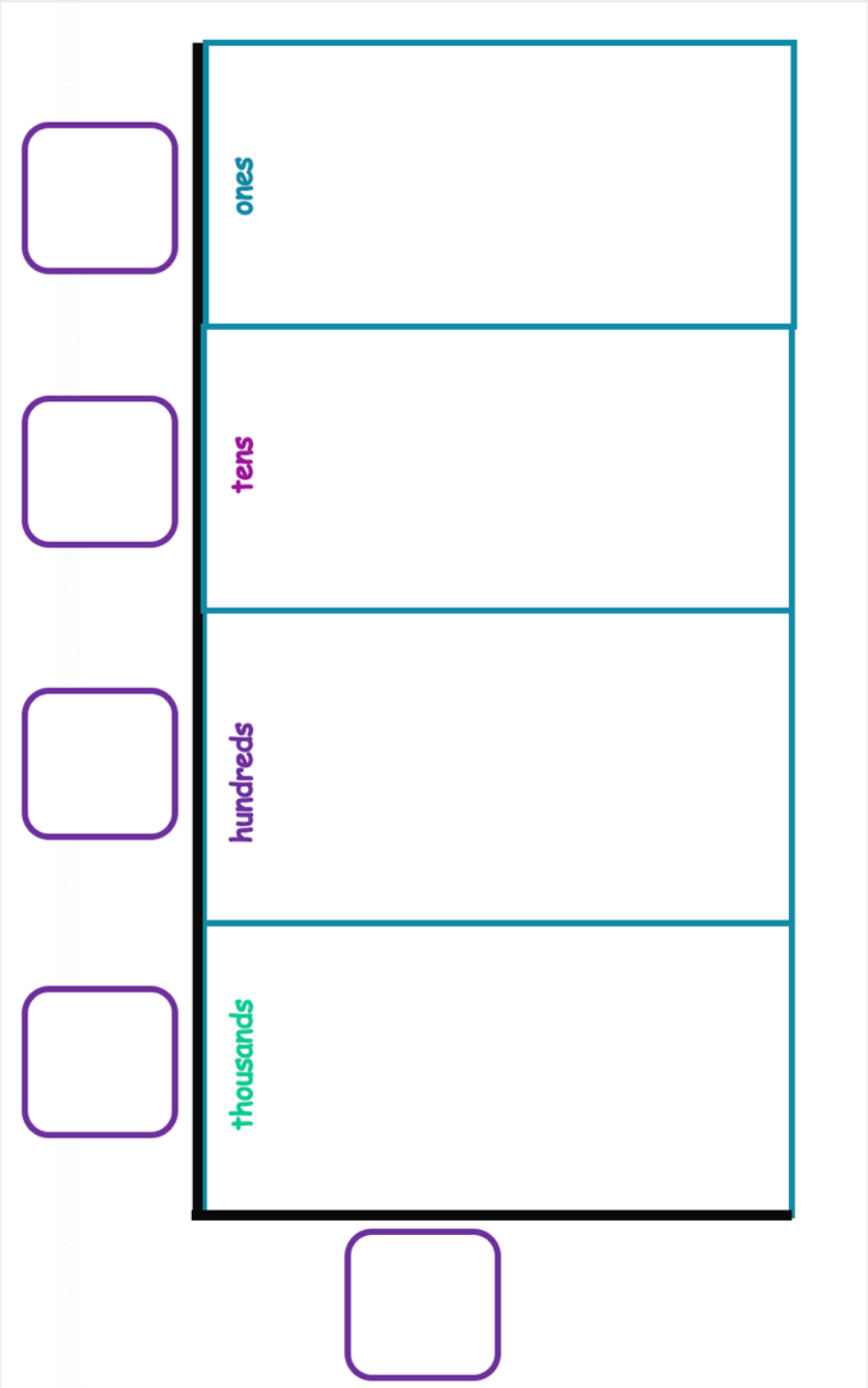
I can divide a 3 digit number by a 1 digit number.



BRICKWORK Mathematics

Purple Practice 2

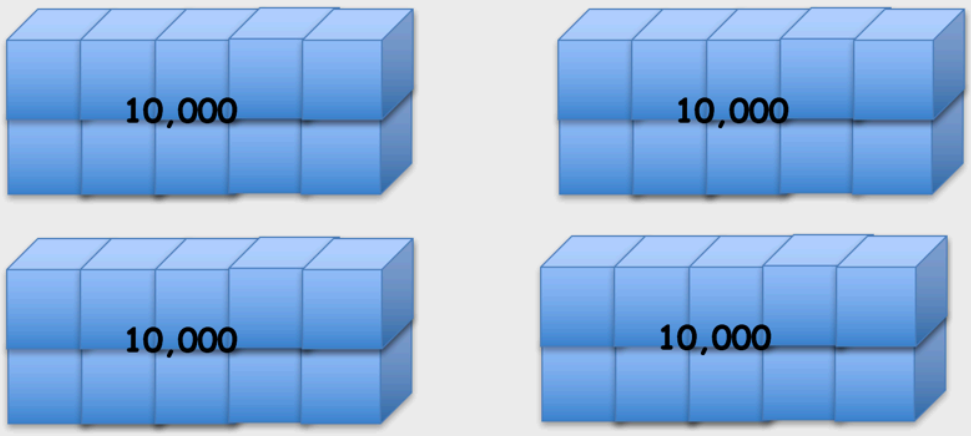
I can divide a 4 digit number by a 1 digit number

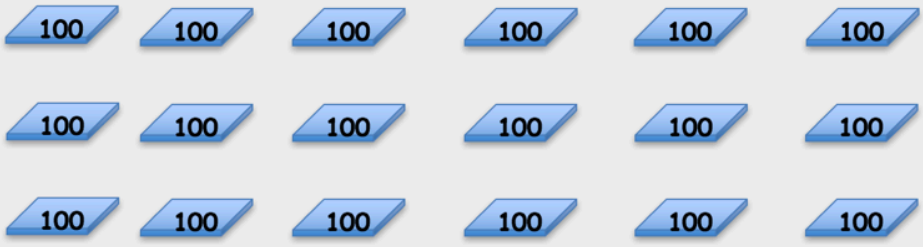


BRICKWORK Mathematics

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

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) $8\overline{)6104}$

Yellow Practice

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

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) 5436 ÷ 8 =

g) 8921 ÷ 9 =

h) 67 ÷ 10 =

i) 810 ÷ 9 =

j) 8098 ÷ 4 =

k) 6809 ÷ 3 =

l) 3426 ÷ 7 =

Challenge: Predict if 5643 divided by 6 will have a remainder or no remainder.

Test your prediction by calculating the answer. Explain how you made your prediction .

BRICKWORK Mathematics

Mastery

Problem solving

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

$\square \div \square = \square$

Show your working out here: