

### **Division Prior Assessment Question 1**

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

**NC:** NASDM4 perform mental calculations, including with mixed operations and large numbers.

#### **Teacher Input Ideas:**

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  $6 \times 9$  is 54. Therefore, the answer to  $54 \div 6 = 9$ .

Then encourage the children to think about. If I know that  $54 \div 6 = 9$ , then what would

$540 \div 6 =$   
 $540 \div 60 =$   
 $5400 \div 60 =$   
 $5400 \div 6 =$

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  $\div$  by 10, 100 to help.

#### **Practice Activities:**

**Purple Practice:** Most suited for children who failed to answer most of Q1 of the prior assessment correctly and would benefit from securing times table facts.

This activity is designed to be a quick recap of using timetable facts to help work out division sums mentally. The children should work out the answer quickly using their knowledge of  $\times$  table facts. This should take around 5 minutes and then when children are ready they could move onto the green activity to also apply understanding of place value.

**Green Practice:** Most suited for children who made errors in Q1 of the prior learning assessment (especially c, d & e) and need to secure mental methods using times table facts and place value knowledge. Also for children who over use written methods and need to further secure mental methods.

Children are to use their understanding of place value and x table facts to work out the answers for the questions. 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. At the end, you could give the children some challenge questions such as  $56 \div 90$  to ensure that they have a good understanding of place value as this will have a decimal answer.

**Yellow Practice:** Most suited for children who demonstrate understanding of using x table facts and place value and would 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  $0.9 \times 4 = ? \div 10$ ).

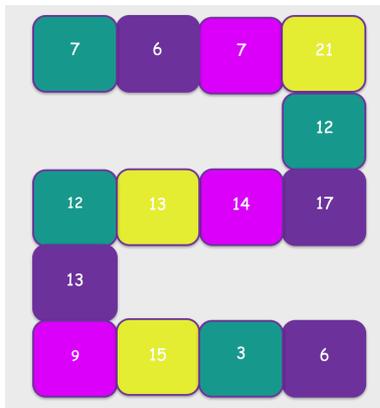
**Mastery:** this activity requires the children to apply their knowledge of the relationship between factors, multiples and divisors. The activity shows a detailed example of how number webs can be made from one number. The children are to pick a multiple from the blocks at the bottom of the page and find factor pairs and divisors of this number.

Using the factor pairs the children can then generate their own x and  $\div$  sums as in the example. Prompt the children through questioning:

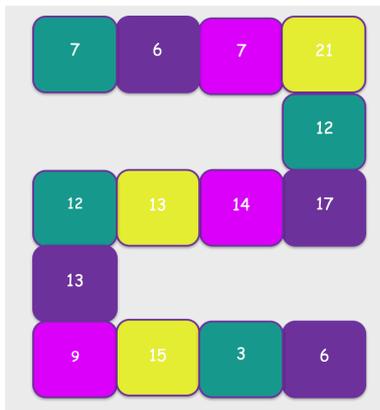
- 24 is a multiple of ... Can you name any divisors of 24? If you know this then what factor pairs can we find? Prove you have all the factor pairs.
- If you know that  $6 \times 4 = 24$  then what else do you know? How can you use your knowledge of place value?
- If you know that  $24 \div 8 = 3$  then what else do you know? Explain how place value has helped you.

**Answers:**

**Purple**



**Green**



**Yellow:**

- |        |        |   |       |
|--------|--------|---|-------|
| 1) 400 | 2) 60  | 3) 80   | 4) 96 |
| 5) 160 | 6) 3   | 7) 6600   | 8) 12 |
| 9) 36  | 10) 40 | 11) $30 \times 3$ or $45 \times 2$ or $10 \times 90$ or $1 \times 90$ |       |
| 12) 50 |        |   |       |

**Mastery** mark with the children all the facts that they have found using the factors of each number

- 1) 24:  $1, 24, 2 \times 12, 3 \times 8, 4 \times 6$
- 2) 18:  $1 \times 18, 2 \times 9, 3 \times 6$
- 3) 15:  $1 \times 15, 3 \times 5$
- 4) 64:  $1 \times 64, 2 \times 32, 4 \times 16, 8 \times 8$

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

$56 \div 8 =$

$66 \div 11 =$

$42 \div 6 =$

$63 \div 3 =$

$96 \div 8 =$

$144 \div 12 =$

$78 \div 6 =$

$56 \div 4 =$

$51 \div 3 =$

$91 \div 7 =$

$108 \div 12 =$

$75 \div 5 =$

$90 \div ?$   
 $= 30$

$48 \div ?$   
 $= 8$

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

Lo: I use my x table facts and place value knowledge to calculate division sums.

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.

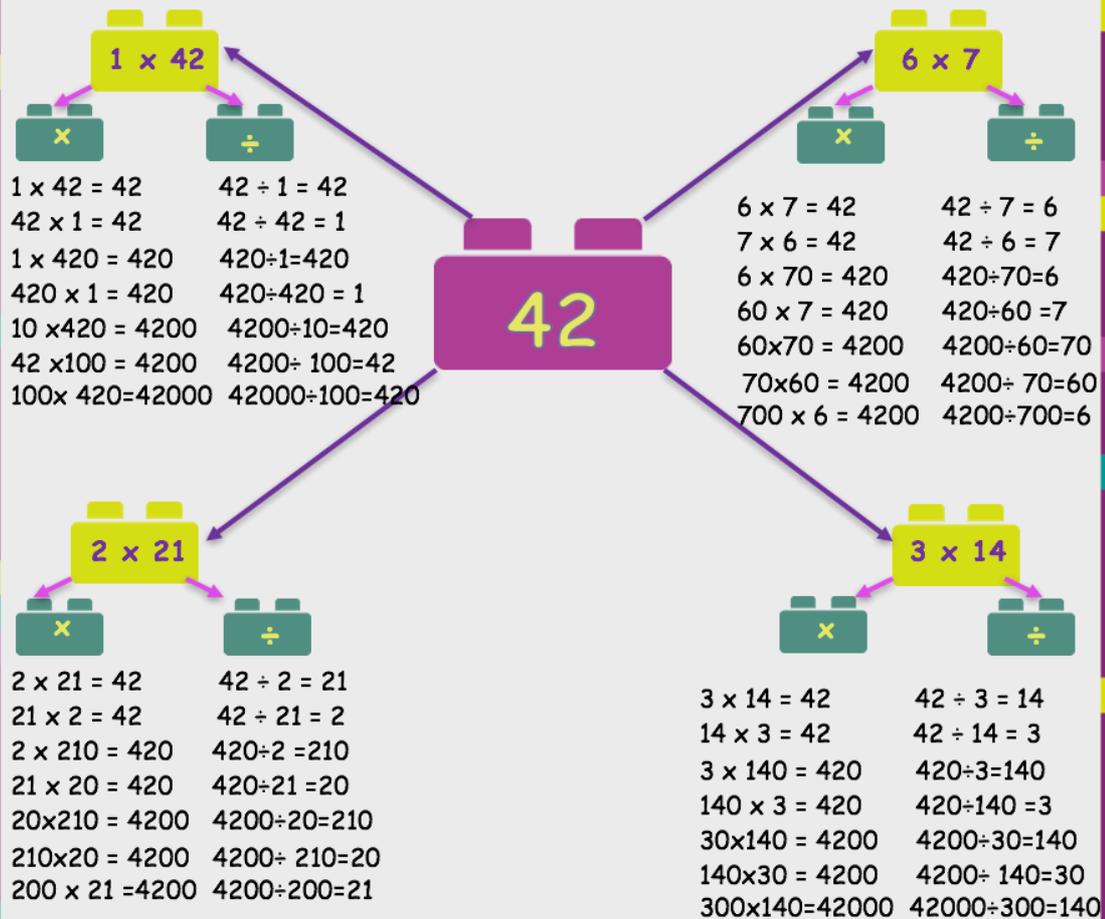
### Yellow Practice

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

Look at each calculation. Fill in the missing blocks.

- 1)  $\square \div 8 = 50$
- 2)  $5400 \div 90 = \square$
- 3)  $640 \div \square = 8$
- 4)  $\square \div 3 = 32$
- 5)  $6400 \div 40 = \square$
- 6)  $0.9 \div \square = 0.3$
- 7)  $\square \div 11 = 600$
- 8)  $144 \div \square = 12$
- 9)  $0.9 \times 4 = \square \div 10$
- 10)  $\square \times 9 = 7200 \div 20$
- 11)  $8100 \div 90 = \square \times \square$
- 12)  $25 \div \square = 1 \div 2$

A number web has been created by using the factors of 42. The factors of have been used to create different x and ÷ sums.



Pick a block at a time to create your own number webs.

