

Tuesday 9<sup>th</sup> June 2020

Multiplication and Division

Hi Yachts!

Mental Maths

Choose the best option for you then solve the problem in your head:

**Option 1:** What must you add to 8 to reach 19? What about reaching 29 from 8? How about reaching 39? Now try 49. Do you notice a pattern?

**Option 2:** What must you do to 120 to reach 60? What must you do to 60 to reach 30? What must you do to 30 to reach 15? Do you notice a pattern?

**Option 3:** Complete the pattern: 0.085, \_\_\_\_\_, 8.5, \_\_\_\_\_ 850

Use the RUCSAC method to solve the problems:



**Read**

Read the question carefully.



**Underline**

Underline or write down the keywords and numbers.



**Choose**

Choose the correct operation (+ - x or ÷) and a mental or written method of calculation (you could use diagrams).



**Solve**

Solve it! Make sure you follow the steps carefully.



**Answer**

Check that you have answered the question properly. What did you need to find out in the first place?



**Check**

Check your answer. Use the inverse calculation or another checking technique (was it close to your estimate?)

1. Choose whether the answer to these questions about the 10 times table are always, sometimes or never, then prove it. I have given you an example:

Question	Always / Sometimes / Never	Prove it
Multiples of 10 are even	<i>Always</i>	1. $10 \times 1 = 10$ (even) 2. $10 \times 2 = 20$ (even)

		3. $10 \times 3 = 30$ (even)
Multiples of 10 can be divided into 2 equal groups		1. 2. 3.
Multiples of 10 can be divided into 4 equal groups		1. 2. 3.
Multiples of 10 end with a 0		1. 2. 3.
Multiples of 5 are also multiples of 10		1. 2. 3.

2. Beverley visits the grocers with 87p.

- How many oranges could she buy?
- Would she have any money left over?

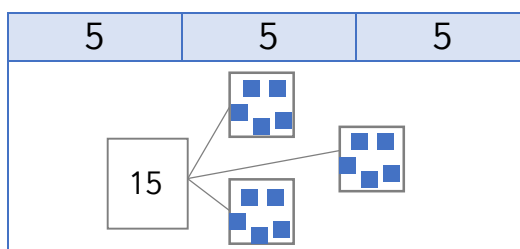
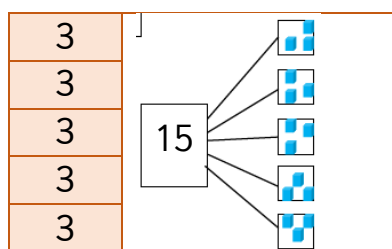
Oranges  
10p each



- Beverley now wants to share her oranges equally between four friends. How many oranges would each friend receive?

3. Can you remember what the **commutative law** is in multiplication? It tells us that it doesn't matter which order we multiply numbers in, we will always reach the same answer e.g.  $3 \times 5 = 15$        $5 \times 3 = 15$

Can you draw part-whole models to demonstrate the commutative law and use them to help you with the answer? I have given you an example for the calculation above.



a.  $4 \times 8 = \underline{\quad}$        $8 \times 4 = \underline{\quad}$

4	
4	
4	
4	
4	
4	
4	
4	

8	8	8	8

b.  $3 \times 7 = \underline{\quad}$        $7 \times 3 = \underline{\quad}$

3	
3	
3	
3	
3	
3	
3	
3	

7	7	7

c.  $6 \times 8 = \underline{\quad}$        $8 \times 6 = \underline{\quad}$

6	
6	
6	
6	
6	
6	
6	
6	

8	8	8	8	8	8

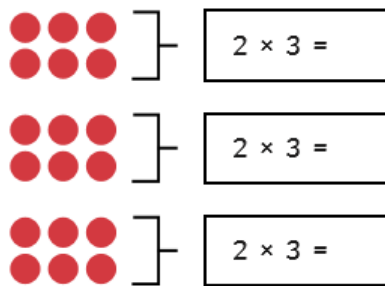
4. Nina says that if  $5 \times 9 = 45$  and  $9 \times 5 = 45$  then it must also be true that  $9 \div 5 = 45$  and  $5 \div 9 = 45$ .

a. Do you agree?

b. Draw two part-whole models like the ones above to prove your answer.

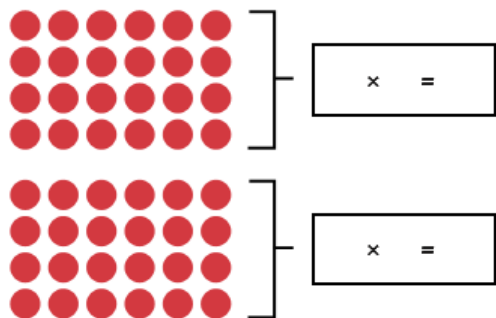
## Challenges

5. Complete the calculations to match the arrays.



$2 \times 3 =$   
 $2 \times 3 =$   
 $2 \times 3 =$

$3 \times 2 \times 3 = 3 \times 6 =$



$\times =$   
 $\times =$

$\times \times = \times =$

6. Use your knowledge of number facts to solve the calculations. Remember that the **associate law** tells us that it doesn't matter which order we multiply the numbers in

e.g.  $5 \times 7 \times 2$        $5 \times 7 = 35$  then  $35 \times 2 = 70$

$7 \times 2 = 14$  then  $14 \times 5 = 70$

$5 \times 2 = 10$  then  $10 \times 7 = 70$

a. $10 \times 3 \times 1 =$ _____	b. $8 \times 3 \times 2 =$ _____	c. _____ $\times 4 \times 5 = 100$
d. $3 \times 10 \times$ _____ $=$ 180	e. $2 \times$ _____ $\times 10 =$ 180	

7. Solve this word problem. Draw a picture and write a multiplication calculation to match it.

Amal bought 5 boxes of eggs. Each box of eggs was organised into 2 rows of 6. How many eggs did Amal have altogether?

Draw it

Write the number sentence