L.O - Understanding relationships between calculations.

success criteria

To understand the how place value can be used to help solve multiplication calculations.
To identify relationships between time tables.

•To use concrete and written strategies to reason and problem solve.

### Does anybody know their I times tables?

- | X | = |
- $2 \times 1 = 2$
- $3 \times 1 = 3$
- $4 \times 1 = 4$

I'm sure you do but lets have a look at how it can relate to other times tables.

- $5 \times 1 = 5$
- $6 \times 1 = 6$
- $7 \times 1 = 7$
- 8 x l = 8
- $9 \times 1 = 9$
- $10 \times 1 = 10$

## Can anybody notice a trend lessent these two times tables?

X   =	x  0 =  0
$2 \times 1 = 2$	<u> 2 x 10 = 20</u>
$3 \times 1 = 3$	<u> 3 x 10 = 30</u>
$4 \times 1 = 4$	4 x 10 = 40
$5 \times 1 = 5$	<u>5 x 10 = 50</u>
$6 \times 1 = 6$	<u>6 x 10 = 60</u>
$7 \times 1 = 7$	7 x 10 = 70
8 x l = 8	8 x 10 = 80
$9 \times 1 = 9$	9 x 10 = 90
$10 \times 1 = 10$	10 x 10 = 100

Notice how the numbers Notice That the amount of in the calculations have gotzeros in the calculation is 10 times bigger and the same amount as in the therefore the answers are 10answer too? times bigger Let's use our times table knowledge to identify a relationship between these questions.

1x 45 = 45 so 10 x 45 = Let's use our times table knowledge to identify a relationship between these questions.

1x 45 = 45so 10 x 45 = 450times bigger
than 45

Also there is one zero in 10 x 45 and only one <mark>zero in the answer 450</mark>

450 is 10



### 4 x 70 = 280

#### 40 x 70 = 2800

# What do you notice happens to the numbers?

Can you complete these calculations?

4 x 6 = 24

4 x 60 = \_\_\_

40 x 60 = \_

### Can you complete these calculations?

8 x 4 = \_\_\_\_

8 x \_\_\_ = 320

\_\_\_ x 40 = \_\_\_\_

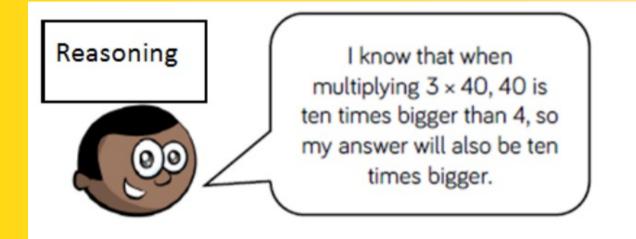




a) Are there more noodles in total in the boxes or the bags?

b) Each jug holds 240 ml of juice.

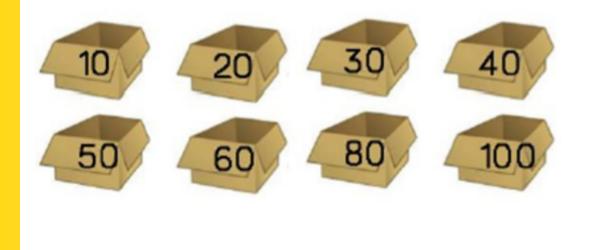
The first jug of juice is shared equally between the red glasses. The second jug of juice is shared equally between the blue glasses. Does one red or one blue glass contain more juice?

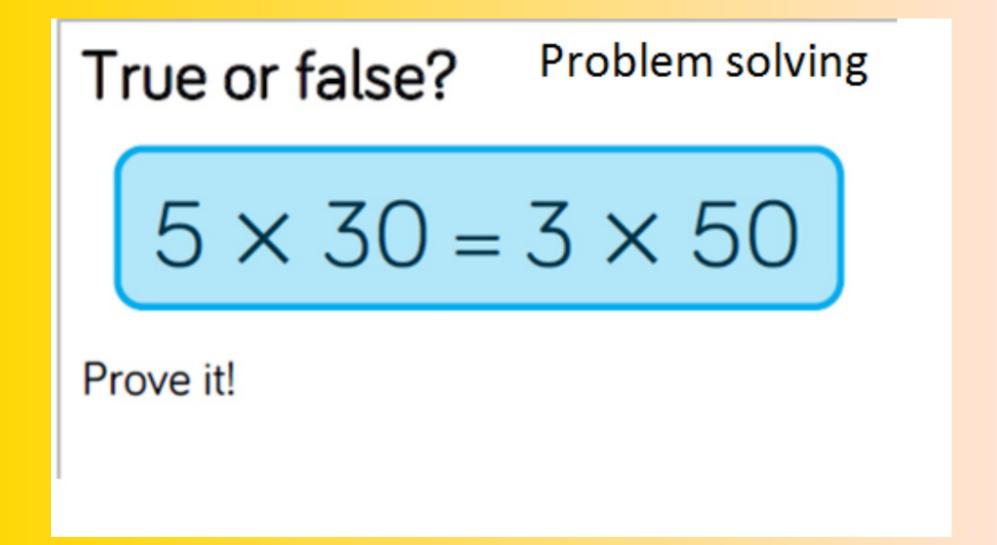


Is Saif correct? Prove it.

Reasoning

Chloe has 240 cakes to sell Boxes come in different sizes and can hold different multiples of 10 Which boxes could she use, making sure all boxes are full and there are no cakes left over?





### <u>Answers</u>

I know that when multiplying 3 × 40, 40 is ten times bigger than 4, so my answer will also be ten times bigger. Is Saif correct? Prove it.	Saif is correct. I know $3 \times 4 = 12$ , so if he has $3 \times 40$ then his answer will be ten times bigger because 4 has become ten times bigger.	True or false? $5 \times 30 = 3 \times 50$ Prove it!	Possible response: Children may represent it with place value counters. True because they are equal.
Chloe has 240 cakes to sell. Boxes come in different sizes and can hold different multiples of 10 Which boxes could she use, making sure all boxes are full and there are no cakes left over?	Possible response: She could use 10, 20, 30, 40, 60, 80 because 240 is a multiple of all of these numbers. E.g $10 \times 24 = 240$ $20 \times 12 = 240$ $30 \times 8 = 240$ $40 \times 6 = 240$ $60 \times 4 = 240$ $80 \times 3 = 240$		Children may explore how it is different in a context though. For example, 5 lots of 30 apples compared to 3 lots of 50 apples.



### If I know that $3 \times 7 = 21$ and $3 \times 70 = 210$

what is the answer to 300 x 700?