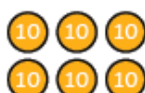




1) Complete the calculation for each set of place value counters.



a)  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$



b)  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$



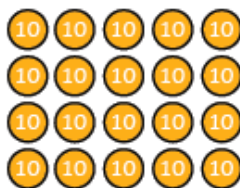
c)  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$



d)  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$



e)  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$



f)  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$



g)  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$



h)  $\underline{\quad} \times \underline{\quad} = \underline{\quad}$

2)



There are \_\_\_\_\_ columns of \_\_\_\_\_ boxes.

$\underline{\quad} \times \underline{\quad} = \underline{\quad}$

There are \_\_\_\_\_ boxes altogether.

Each box contains ten tennis balls.

There are \_\_\_\_\_ columns of \_\_\_\_\_ balls.

$\underline{\quad} \times \underline{\quad} = \underline{\quad}$

There are \_\_\_\_\_ balls altogether.

Can you make up your own word problem for question 1 that is similar to question 2? Or make up your own.

If you want a challenge:

- 1) Thomas is calculating  $80 \times 5$ . He has created this array using place value counters to help him.



There are 40 counters in my array, so I need to multiply my answer by 2 to calculate  $80 \times 5$ .



Do you agree? Explain your reasons.

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- 2) Geri says that  $80 \times 5$  will have the same answer as  $50 \times 8$ . Do you agree? How could you use arrays and the times table facts you know to prove your answer?

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For parents and carers:

Answers below

- 1) a)  $3 \times 2 = 6$  or  $2 \times 3 = 6$   
b)  $30 \times 2 = 60$  or  $20 \times 3 = 60$   
c)  $8 \times 3 = 24$  or  $3 \times 8 = 24$   
d)  $80 \times 3 = 240$  or  $30 \times 8 = 240$   
e)  $4 \times 5 = 20$  or  $5 \times 4 = 20$   
f)  $40 \times 5 = 200$  or  $50 \times 4 = 200$   
g)  $10 \times 3 = 30$  or  $3 \times 10 = 30$   
h)  $100 \times 3 = 300$  or  $30 \times 10 = 300$

- 2) There are 6 columns of 4 boxes.  
 $6 \times 4 = 24$   
There are 24 boxes altogether.  
Each box contains ten tennis balls.  
There are 6 columns of 40 balls.  
 $6 \times 40 = 240$   
There are 240 balls altogether.

- 1) Thomas is not correct. He has not understood that, when one of the numbers in the calculation that he wants to solve is ten times bigger, then the answer will also be ten times bigger. He has worked out that the answer to  $8 \times 5$  is 40. He now needs to multiply the answer by 10 to calculate  $80 \times 5$ , as 80 is ten times larger than 8.
- 2) Geri is correct.  $8 \times 5$  is 40.  $80 \times 5$  and  $50 \times 8$  will both be ten times larger than 40, because in each case one number in the calculation has been made ten times larger. The answer to both calculations is 400. Children may prove this by drawing arrays for  $8 \times 5$  and  $5 \times 8$ , or by using manipulatives such as place value counters to represent  $80 \times 5$  and  $50 \times 8$ .

