Monday 8th June 2020

WALT multiply two digit by one digit numbers

Success Criteria:

I can use the expanded method

I can group and exchange

I can use concrete, pictorial and abstract representations.

I can work out some calculations mentally

Key vocabulary: multiplication, exchange

Write the date, WALT and success criteria into your purple book.

In today's lesson you will be learning how to multiply two digit by one digit numbers using the expanded method and represent it in different ways.

First watch the video below to re- cap on how to multiply a two digit number by a one digit number without exchange using the grid method.

https://www.youtube.com/watch?v=TnOinzscfXw multiplying using boxing up method (explanation)

https://www.youtube.com/watch?v=rQFdBKAxUuM multiplying using the grid method (on a whiteboard).

Before you move on to the next part of the lesson complete these questions below using the grid or column method in your purple book.

1. 19x4=

2. 26x8=

Now you will watch a video showing you how to multiply and two digit by a one digit number using dienes and place value chart.

https://www.youtube.com/watch?v=SeGFo3DEYAs using dienes and a place value grid

You can also solve the calculations by using a place value chart and place value counters. You are representing the sum you are solving. So for example if you were calculating 14 x4, you would need to represent 4 groups of 14. You need to first work how many ones and tens there are in 14 before you show the four groups; this is called partitioning. There is one ten and four ones. Now you need to represent four groups of ten and four groups of four.

Look at the example below to show you what this should look like.

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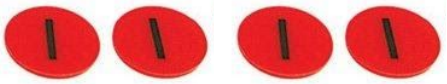
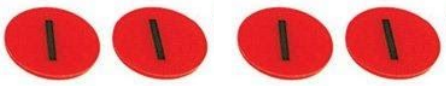
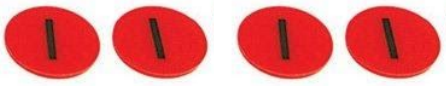
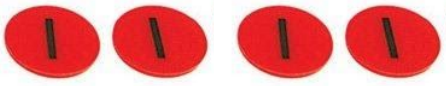
	
	
	
	

You will now use the expanded method to help you to calculate the totals to the sums. The expanded method is used in the same way to help you to calculate the answers no matter if you are using dienes, counters or the column method. You partition the number in to tens and ones. First you multiply the groups of ones together (4x4). Next you multiply the groups of tens together (4x10). Finally you add both numbers together to get your total. The total is 56.

It should look be set out like the example below:

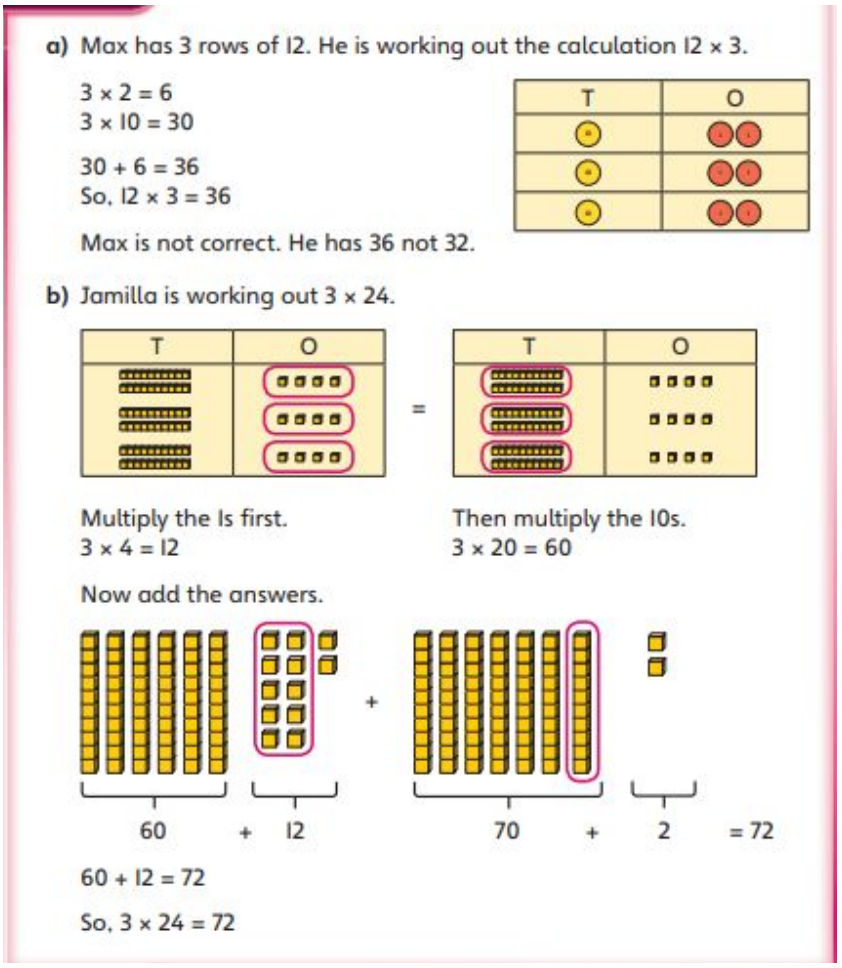
4x4=16

4x10=40

40+16=56

14x4= 56

The example below from power maths shows you how to use dienes, place value counters and the expanded method to solve the sums.



a) Max has 3 rows of 12. He is working out the calculation 12 × 3.

3 × 2 = 6
3 × 10 = 30

30 + 6 = 36
So, 12 × 3 = 36

Max is not correct. He has 36 not 32.

T	O
⊙	⊙⊙
⊙	⊙⊙
⊙	⊙⊙

b) Jamilla is working out 3 × 24.

T	O
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Multiply the 1s first.
3 × 4 = 12

Then multiply the 10s.
3 × 20 = 60

Now add the answers.

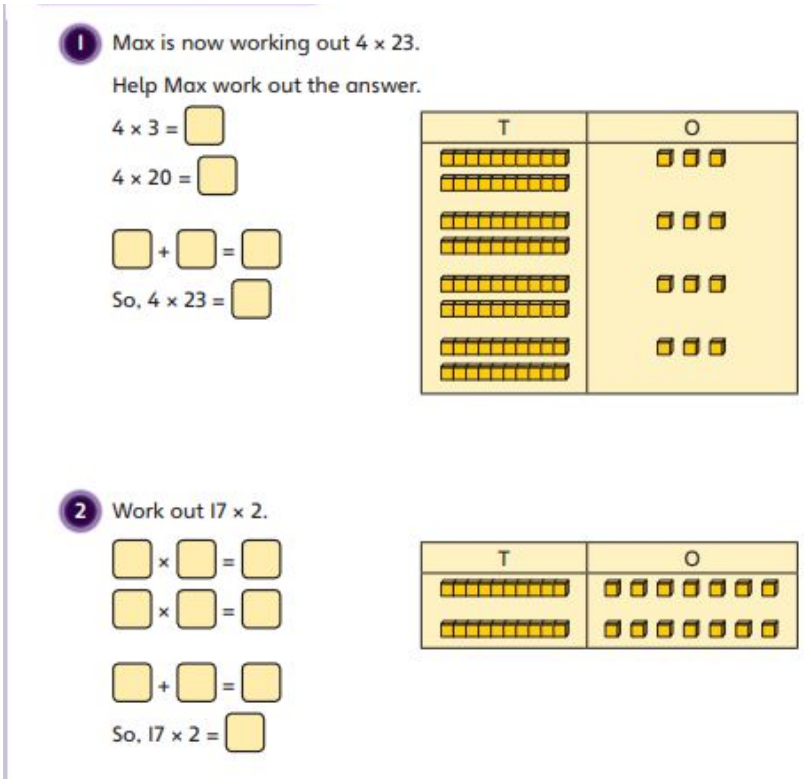
60 + 12 + 70 + 2 = 72

60 + 12 = 72

So, 3 × 24 = 72

(taken from https://www.activelearnprimary.co.uk/downloadable-resource?id=792664&file=pm_y3_u05_tguide.pdf)

Now you will have some practise using the examples below. Complete them in your purple book using dienes and place value charts. Draw the place value chart out and represent the digits using dienes if this helps you.



(taken from https://www.activelearnprimary.co.uk/downloadable-resource?id=792664&file=pm_y3_u05_tguide.pdf)

To help you to calculate the answers to two digit by one digit numbers mentally you can partition the numbers into tens and ones and multiply them separately in your head. For example, if you wanted to work out 25x3 you would partition 25 in to 20 and 5. You would then use your three time tables knowledge and mentally multiply them both by 3.

For example:

5x3=15
20x3=60
60+15=75

If you find multiplying tens by ones more difficult in your head look at how it can be made more simple below.

To make the process above easier and quicker for you when you are multiplying the tens by ones, you can turn the tens into ones and multiply it by the other one and then put a 0 on the end to show it is 10 times bigger. For example, instead of 20 x3, you could do 2x3 and then use your three times tables knowledge to work out the answer. The answer is 6. Then you would make it ten times bigger by adding a 0 on the end. The answer is 60.

Look at the example below to show you:

2x3= 6
20x3=60
In tomorrow's lesson you will be using your learning from today's lesson to complete pages 21-23 from textbook b.