L.O - To multiply 2 digit by 1 digit using written method without exchanging.

success criteria
• To use my knowledge of place value in my written method .
• To use my times tables knowledge to solve calculations using written method.
• To problem solve and reason using the written method

Key vocabulary: partitioning, tens, ones, multiplication, repeated addition

Lets think back what is this what is this calculation asking us to do?

4 x 12 =

It's asking us to multiply the number 12, 4 times. Yesterday we used this method to help us solve calculations like this.

Tens	Ones

Total

40   8 = 48

Lets try one together

$$\begin{array}{r} 13 \\ \times \quad 2 \\ \hline \\ \hline \end{array}$$

Like with column addition and subtraction we
always start with the ones column.
Our first step is going to be 3 x 2.

Lets try one together.

$$
\begin{array}{r}
1\;3 \\
\times \quad 2 \\
\hline
6 \\
\hline
\end{array}
$$

Now that we have multiplied the ones together we
need to onto the tens.
Our next step is going
to be 2 x 1 =

And our answer is ....

———————

2 6

———————

This is my answer to the calculation 13 x 2 using column multiplication.

```
      3   2

x             3
_____


_____
```

Now lets have a go ourselves. Can you use column multiplication to calculate 32 x 3 on your white boards.
(remember the biggest number is on the top)

Have a go at this one yourself

22 x 4 =

x
_____

_____

Answer: 44

Now we all know how to multiply using column subtraction, so what is wrong with the following calculation?

$$
\begin{array}{r}
3 \\
\times \quad 2 \;\; 3 \\
\hline
9 \\
\hline
\end{array}
$$

They started with the small number on the top and completley forgot to mutilply the tens column it should have looked like this instead.

$$
\begin{array}{r}
2 \;\; 3 \\
\times \qquad 3 \\
\hline
6 \;\; 9 \\
\hline
\end{array}
$$

Fluency

1. 4 x 12

2. 3 x 21

3. 2 x 34

4. 5 x 11

5. 3 x 33

Fluency

1. 4 x 12= 48
2. 3 x 21=63
3. 2 x 34=68
4. 5 x 11= 55
5. 3 x 33= 99

Problem solving

Dexter says,

$4 \times 21 = 2 \times 42$

Is Dexter correct?

Reasoning

Martin completes the following calculation:

$$42 \times 2$$

Can you spot his mistake?

	T	O				
	4	2				
×		2				
		4	(2	×	2)	
+		8	(4	×	2)	
	1	2				

Answers

Alex completes the calculation:

$$43 \times 2$$

Can you spot her mistake?

	T	O
	4	3
×		2
		6
+		8
	1	4

Alex has multiplied 4 by 2 rather than 40 by 2

Teddy completes the same calculation as Alex.

Can you spot and explain his mistake?

	T	O
	4	3
×		2
8	0	6

Teddy has written 80 where he should have just put an 8 because he is multiplying 4 tens by 2 which is 8 tens. The answer should be 86

Dexter says,

$$4 \times 21 = 2 \times 42$$

Is Dexter correct?

True. Both multiplications are equal to 84

Children may explore that one number has halved and the other has doubled.