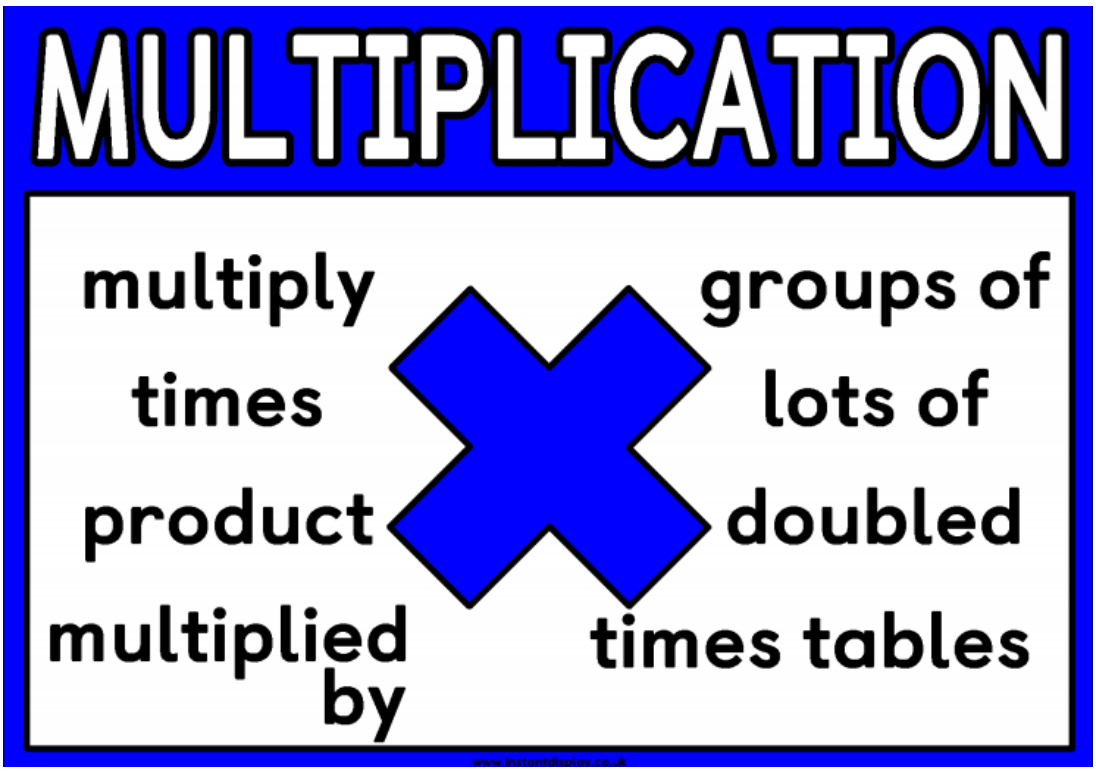
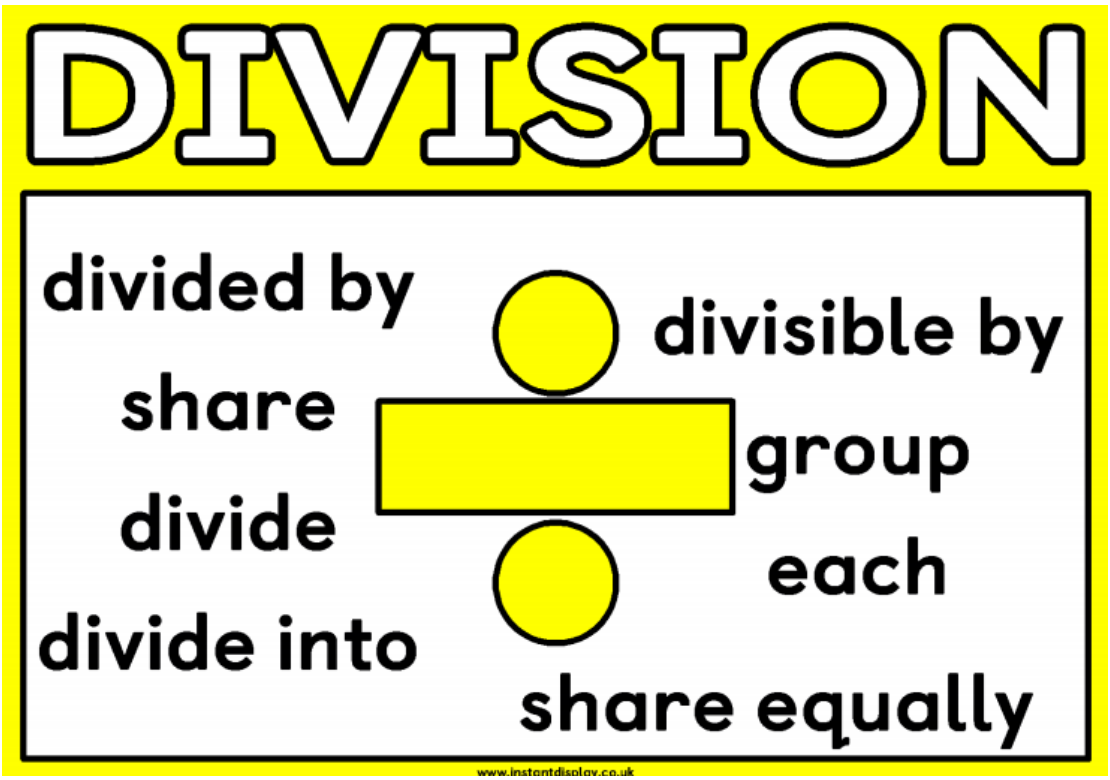
Vocabulary


MULTIPLICATION
multiply
times
product
multiplied by
groups of
lots of
doubled
times tables
www.instantdisplay.co.uk


DIVISION
divided by
share
divide
divide into
divisible by
group
each
share equally
www.instantdisplay.co.uk

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

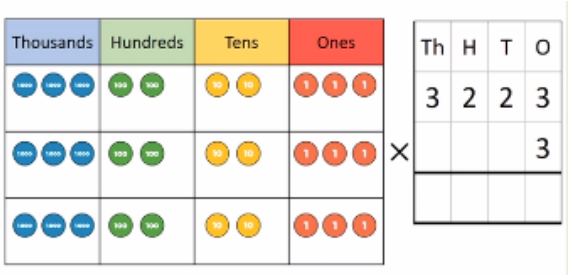
3 x 4 =	7 x 8 =	9 ÷ 3 =	36 ÷ 12 =
21 ÷ 7 =	8 x 6 =	12 x 4 =	10 x 8 =
4 x 8 =	3 x 9 =	4 x 7 =	3 x 11 =
40 ÷ 8 =	15 ÷ 3 =	27 ÷ 9 =	20 ÷ 4 =
4 x 11 =	48 ÷ 6 =	8 ÷ 4 =	6 x 8 =
5 x 8 =	11 x 3 =	5 x 8 =	80 ÷ 10 =
24 ÷ 4 =	88 ÷ 11 =	24 ÷ 3 =	4 x 1 =
72 ÷ 8 =	8 x 4 =	9 x 4 =	8 x 5 =
10 x 3 =	16 ÷ 4 =	8 x 11 =	6 x 4 =
5 x 4 =	32 ÷ 8 =	6 ÷ 3 =	3 ÷ 3 =
12 ÷ 3 =	3 x 6 =	48 ÷ 12 =	44 ÷ 11 =
4 x 9 =	8 ÷ 8 =	3 x 4 =	7 x 3 =
11 x 8 =	4 x 3 =	0 x 8 =	12 x 8 =
3 x 12 =	48 ÷ 8 =	18 ÷ 3 =	28 ÷ 4 =
24 ÷ 8 =	30 ÷ 10 =	3 x 3 =	56 ÷ 7 =
27 ÷ 3 =	8 x 9 =	64 ÷ 8 =	4 x 12 =
7 x 4 =	10 x 4 =	36 ÷ 4 =	5 x 3 =
36 ÷ 9 =	16 ÷ 8 =	8 x 8 =	56 ÷ 7 =
56 ÷ 8 =	8 x 3 =	21 ÷ 3 =	4 x 6 =
3 x 0 =	72 ÷ 9 =	4 x 12 =	32 ÷ 4 =
12 ÷ 4 =	3 x 8 =	96 ÷ 12 =	12 x 3 =
33 ÷ 3 =	4 x 4 =	24 ÷ 8 =	7 x 8 =
6 x 3 =	9 x 8 =	2 x 3 =	9 x 3 =
40 ÷ 4 =	4 ÷ 4 =	11 x 4 =	21 ÷ 3 =
28 ÷ 7 =	3 x 7 =	32 ÷ 8 =	8 x 12 =

Date			
Subject/s	**Maths**		
Learning Objective 	To use short multiplication		
		SA 	TA 
Success Criteria 	I know to start with the ones		
	I can use my times tables knowledge		
	I know to add the numbers that have been exchanged		
Support	Independent Adult Support ( ) Group Work		

Pre-task:
Calculate

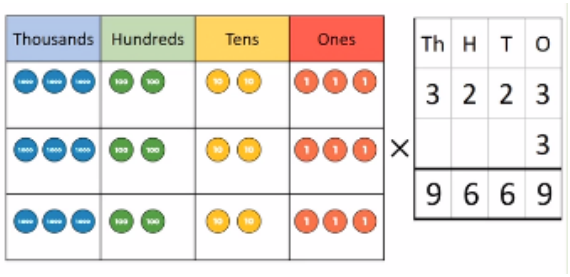
32 x 8 = 72x3= 574x4=

Teacher Led

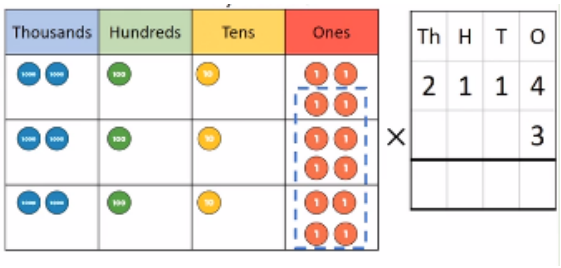


Here you can see the written method alongside place value counters to represent 3223 x 3. In each column there are three lots of each digit because we are multiplying by 3.

Now lets try another calculation.



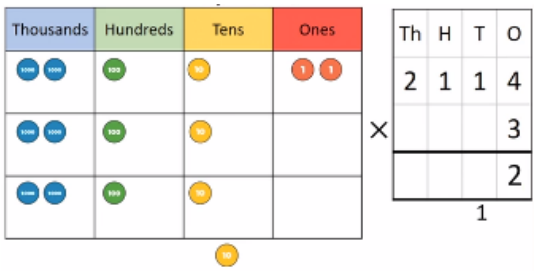
Begin by multiplying the ones column: 3 lots of 3 ones = 9. Then move onto the tens. 3 lots of 2 tens = 6 tens. Next, move to the hundreds. 3 lots of 2 hundreds = 6 hundreds. Finally, look at the thousands. 3 lots of 3 thousands = 9 thousands.



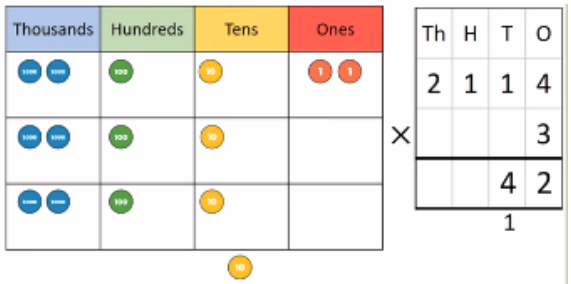
Now look at this problem. We can see the written method and place value counters to represent 2114 x 3.

Begin at the ones, so 3 lots of 4 ones = 12 ones.

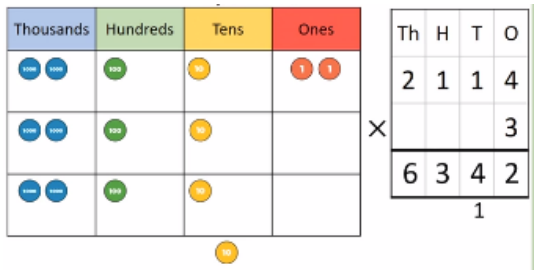
We can't have more than 9 in a place value column, so we will need to exchange.



You can see we have exchanged 10 ones for 1 ten. You can see this represented with the place value counters. This has been shown on the written method by recording the ten just under the tens column.



Now we can calculate the multiplication for the tens column. 3 lots of 1 = 3. However, I must remember to add the exchange on. Therefore 3 x 1 = 3. 3 + 1 = 4.



Now I can complete the calculation.

3 x 1 hundred = 3

3 x 2 thousands = 6.

Fluency

Complete these calculations using the squared paper on the next pages.

1. 7,519 × 7 = _____

2. 6,642 × 6 = _____

3. 6,290 × 5 = _____

4. 9,512 × 5 = _____

5. 3,613 × 3 = _____

6. 8,726 × 6 = _____

7. 4,957 × 2 = _____

8. 7,902 × 6 = _____

9. 6,237 × 5 = _____

10. 9,847 × 5 = _____

11. 867 × 8 = _____

12. 1,907 × 4 = _____

Fluency—Answers

1) 52633
2) 39852
3) 31450
4) 47560
5) 10839
6) 52356
7) 9914
8) 47412
9) 31 185
10) 49235
11) 6936
12) 7628

Problem Solving and Reasoning

Alex calculated 1,432 × 4

Explain it!

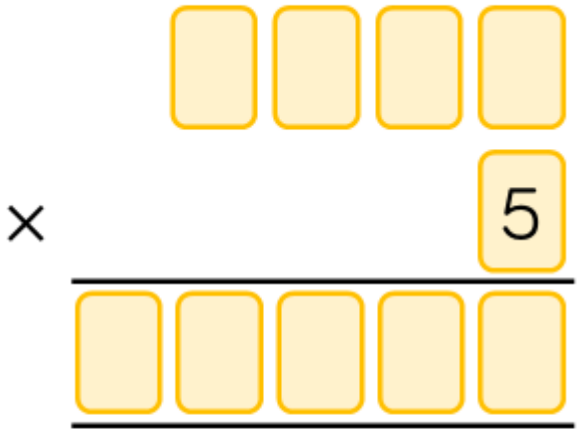
Here is her answer.

	Th	H	T	O
	1	4	3	2
×				4
	4	16	12	8

1,432 × 4 = 416,128

Can you explain what Alex has done wrong?

Can you work out the missing numbers using the clues?



- The 4 digits being multiplied by 5 are consecutive numbers.
- The first 2 digits of the product are the same.
- The fourth and fifth digits of the answer add to make the third.

Problem Solving and Reasoning Answers
Alex has not exchanged when she has got 10 or more in the tens and hundreds columns.
2,345 × 5 = 11,725

Further Challenge

How many ways?

Complete using digits 0-9. The digit in the box with a border must be odd.

Level 1: I can find a way

Level 2: I can find different ways

Level 3: I know how many ways there are

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

1	9 X 7		30	6 x 9		59	9 X 4	
2	8 x 4		31	12 x 3		60	7 x 6	
3	7 x 10		32	3 x 8		61	4 x 8	
4	9 x 9		33	8 X 8		62	12 X 2	
5	6 x 2		34	6 x 8		63	3 x 6	
6	4 x 7		35	11 x 7		64	4 x 10	
7	9 X 2		36	10 x 1		65	9 x 11	
8	12 x 12		37	10 x 5		66	3 x 12	
9	5 X 9		38	3 x 5		67	3 x 10	
10	7 X 7		39	12 x 11		68	4 X 4	
11	11 x 6		40	6 x 6		69	4 x 9	
12	5 x 11		41	2 x 9		70	4 x 11	
13	4 x 6		42	12 x 7		71	6 x 5	
14	9 x 5		43	11 x 8		72	7 x 2	
15	8 X 12		44	2 x 6		73	5 x 12	
16	10 x 10		45	4 x 5		74	2 x 10	
17	7 x 3		46	4 x 9		75	4 x 12	
18	5 x 8		47	8 x 2		76	7 x 8	
19	3 x 3		48	7 x 9		77	6 x 10	
20	10 x 11		49	12 x 8		78	12 x 6	
21	11 x 2		50	9 X 4		79	7 x 12	
22	2 x 7		51	5 X 5		80	2 X 2	
23	6 x 12		52	10 x 12		81	11 x 0	
24	5 x 7		53	8 x 11		82	2 x 12	
25	10 x 6		54	4 x 3		83	2 X 4	
26	9 x 12		55	2 x 5		84	8 x 5	
27	5 x 4		56	5 x 10		85	7 x 11	
28	11 x 11		57	9 x 3		86	9 x 6	
29	7 x 4		58	8 x 10		87	10 x 11	

Steps to Success

Date			
Subject/s	**Maths**		
Learning Objective 	To use long multiplication		
		SA 	TA 
Success Criteria 	I know to start with the ones		
	I know to use a place holder when multiplying the tens or hundreds		
	I can add answers		
Support	Independent Adult Support ( ) Group Work		

Pre-task:

Calculate.

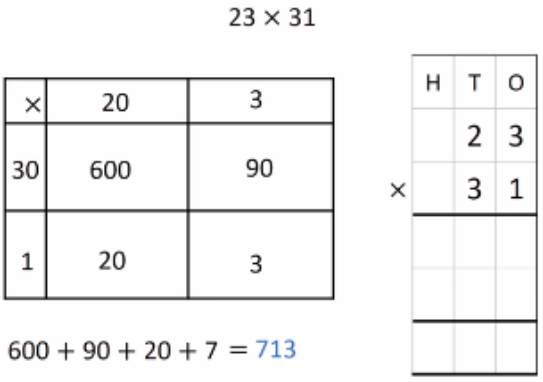
	4	2	6	7
×			3	4

	3	0	4	6
×			7	3

5,734 × 26

Teacher Led

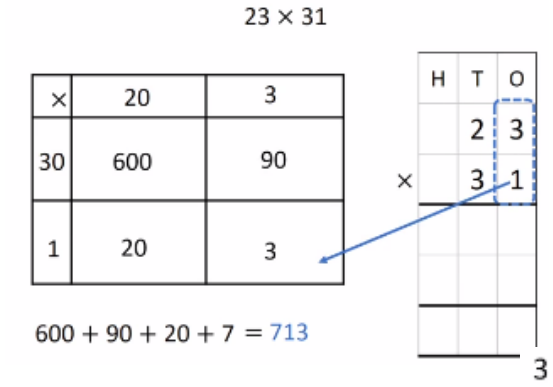
Now we will try multiplying by 2 digits.



Here you can see 23 x 31 represented in the area model (grid method) and in the written long multiplication method.

We need to multiply 20 and 3 by both 30 and 1, then add our answers together.

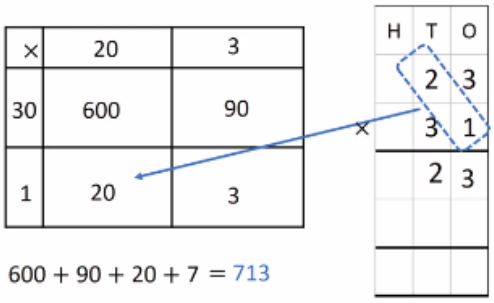
The area method shows these multiplications in their parts.



Now let's focus on the long multiplication method.

We begin by multiplying the ones. 3 x 1 = 3.

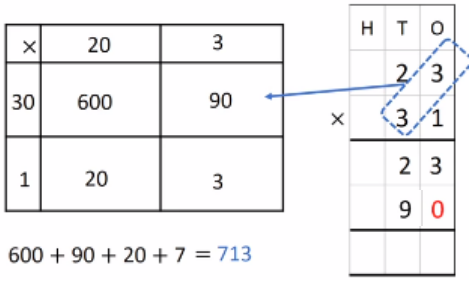
You can see this on the area model and on the long multiplication method.



Let's move to the next part of the calculation.

We are still multiplying by 1, but this time it's 1 x 2 tens = 2 tens.

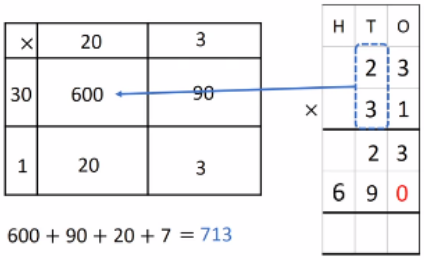
Again, you can see this on the area model and the long multiplication method.



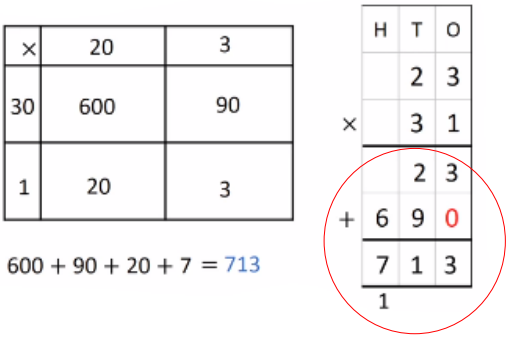
Now we need to multiply by the 3 tens.

3 tens x 3 ones = 90 or 9 tens.

Look carefully at how this is recorded. It is really important to put a zero in the ones column as a place holder, because we are multiplying by tens not ones.



For the next part of the calculation we need to do 3 tens x 2 tens = 600 or 6 hundreds.



Finally, we need to add each part of the multiplication together, using column addition which we recapped last week.

Teacher Led continued

			3	6
x			3	2
				2
			1	

Now lets look at another example.

Remember, first we begin with the ones. So 2 x 6 = 12. I will need to exchange

			3	6
x			3	2
			7	2
			1	

Now, we continue by multiply 2. So 2 x 3 tens = 6 tens.

This time I need to add on my exchange. So 6 + 1 = 7

			3	6
x			3	2
			7	2
			1	
			8	0
		1		

Now we can move on to multiplying the tens.

Don't forget to put in zero as a place holder to show we are multiplying by tens not ones

3 tens x 6 ones = 18 tens or 180. I will need to exchange again

			3	6
x			3	2
			7	2
			1	
	1	0	8	0
		1		

Next we multiply 3 tens by 3 tens = 9 hundreds or 900.

But we must remember to add on the exchange. 9 + 1 = 10

			3	6
x			3	2
			7	2
			1	
	1	0	8	0
		1		
	1	1	5	2
		1		

Finally, we add the two products together.

72 + 1080 = 1152

Fluency

2.				
			4	6
x			3	3

3.				
			1	6
x			3	3

4.				
			1	4
x			2	3

5.				
			2	5
x			3	6

6.				
			3	5
x			5	6

7.				
			3	4
x			2	3

8.				
			4	3
x			3	3

9.				
			4	2
x			2	5

10.				
			4	6
x			1	6

Fluency—Answers

2.				
			4	6
x			3	3
		1	3	8
	1	3	8^{1}	0
	1	**5^{1}**	**1**	**8**

1

3.				
			1	6
x			3	3
			4	8
		4	8^{1}	0
		5^{1}	**2**	**8**

1

4.				
			1	4
x			2	3
			4	2
		2	8^{1}	0
		3	**2**	**2**

1

5.				
			2	5
x			3	6
		1	5	0
		7	5^{3}	0
		9^{1}	**0**	**0**

1

6.				
			3	5
x			5	6
		2	1	0
	1	7	5^{3}	0
	1^{1}	**9^{2}**	**6**	**0**

7.				
			3	4
x			2	3
		1	0	2
		6	8^{1}	0
		7	**8**	**2**

8.				
			4	3
x			3	3
		1	2	9
	1	2	9	0
	1	**4**	**1**	**9**

1

9.				
			4	2
x			2	5
		2	1	0
		8	4^{1}	0
	1	**0**	**5**	**0**

1

10.				
			4	6
x			1	6
		2	7	6
		4^{2}	6^{3}	0
		7^{3}	**3**	**6**

1

Problem Solving and Reasoning

Tommy says,

It is not possible to make 999 by multiplying two 2-digit numbers.

Do you agree?

Prove it!

Amir has multiplied 47 by 36

		4	7
×		3	6
	2	8 (4)	2
	1	4 (2)	1
	3	2	3

Alex says,

Amir is wrong because the answer should be 1,692 not 323

Who is correct?
What mistake has been made?

Explain it!

Problem Solving and Reasoning Answers

Children may use a trial and error approach during which they'll further develop their multiplication skills.
They will find that Tommy is wrong because 27×37 is equal to 999

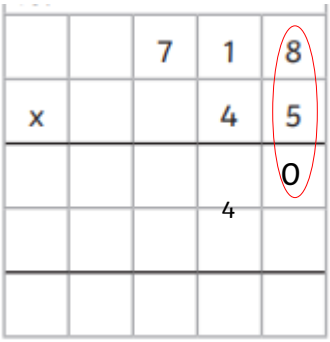
Alex is correct. Amir has forgotten to use zero as a place holder when multiplying by 3 tens.

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

2 x 2 =	3 x 3 =	4 x 4 =	11 x 10 =
3 x 5 =	6 x 8 =	7 x 5 =	10 x 2 =
4 x 6 =	12 x 5 =	8 x 12 =	3 x 12 =
7 x 4 =	8 x 6 =	10 x 11 =	4 x 9 =
10 x 10 =	10 x 12 =	4 x 2 =	5 x 7 =
9 x 3 =	11 x 2 =	10 x 3 =	9 x 8 =
7 x 2 =	3 x 9 =	6 x 8 =	10 x 7 =
11 x 3 =	4 x 11 =	12 x 10 =	7 x 8 =
10 x 5 =	2 x 5 =	2 x 11 =	4 x 3 =
2 x 4 =	6 x 10 =	8 x 3 =	12 x 4 =
5 x 6 =	10 x 9 =	3 x 4 =	5 x 8 =
7 x 10 =	2 x 12 =	4 x 5 =	8 x 8 =
9 x 2 =	5 x 3 =	7 x 8 =	12 x 2 =
3 x 11 =	9 x 4 =	8 x 10 =	5 x 4 =
10 x 4 =	5 x 5 =	2 x 8 =	9 x 5 =
8 x 5 =	8 x 8 =	8 x 0 =	8 x 11 =
9 x 8 =	9 x 10 =	4 x 12 =	2 x 10 =
4 x 10 =	5 x 2 =	12 x 8 =	4 x 7 =
3 x 2 =	6 x 3 =	3 x 6 =	11 x 5 =
7 x 3 =	6 x 4 =	5 x 10 =	2 x 3 =
4 x 8 =	5 x 11 =	8 x 2 =	8 x 9 =
5 x 9 =	2 x 6 =	3 x 7 =	8 x 4 =
12 x 8 =	3 x 10 =	11 x 4 =	11 x 8 =
2 x 9 =	2 x 7 =	5 x 12 =	12 x 3 =
10 x 8 =	3 x 8 =	0 x 4 =	8 x 7 =

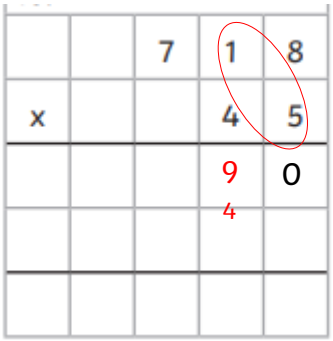
Date			
Subject/s	**Maths**		
Learning Objective 	To use long multiplication		
		SA 	TA 
Success Criteria 	I know to start with the ones		
	I know to use a place holder when multiplying the tens or hundreds		
	I can add answers		
Support	Independent Adult Support ( ) Group Work		

Teacher Led



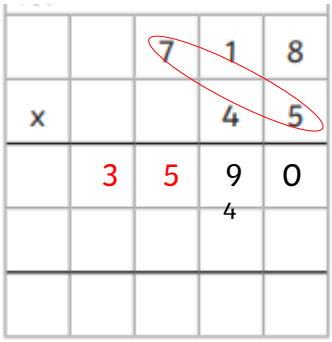
Here we can see the long multiplication method. This time we're multiplying 3 digits by 2 digits. The method stays the same as for 2 digits.

First, begin with the ones. 5 x 8 = 40. We need to exchange



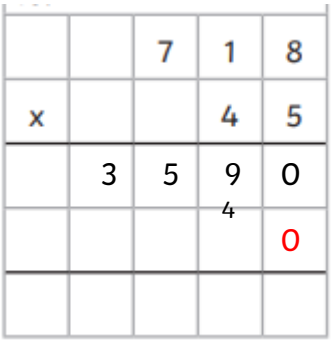
Next we need to do 5 x 1 = 5.

Remember, we need to add on the exchange. 5 + 4 = 9



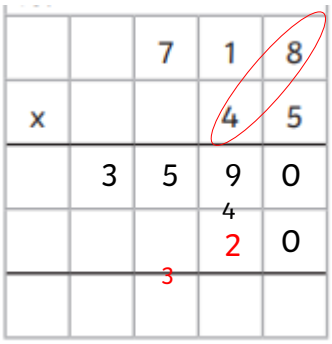
Now we need to do 5 x 7 = 35.

We're not finished yet, we still need to multiply the tens. Turn to the next page to see how.



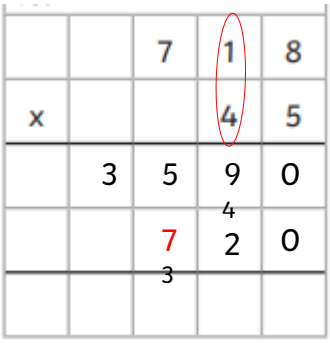
Now we can multiply the tens.

Our first step is to put in a zero as a place holder. This shows that we are multiplying by tens, not ones.



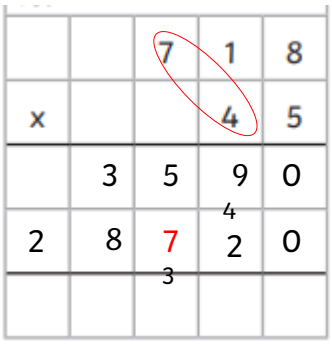
Now we do 4 x 8 = 32.

We will need to exchange.

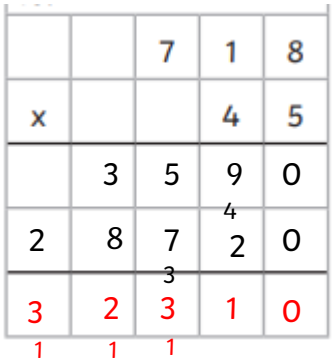


Next, we do 4 x 1 = 4.

Don't forget to add on the exchange. 4 + 3 = 7



Next, we will do 4 x 7 = 28.



Finally, we add our two products together.

Use column addition for this.

Fluency

1.				
		1	6	1
x			2	3

2.				
		2	3	2
x			2	6

3.				
		6	1	4
x			1	8

4.				
		9	6	9
x			9	5

5.				
		7	4	0
x			9	6

6.				
		3	6	2
x			5	8

7.					
		1	4	6	2
x				7	0

8.					
		1	2	3	9
x				1	9

9.					
		1	3	5	9
x				7	7

Fluency—Answers

1.				
		1	6	1
x			2	3
		4	**8**	**3**
	3	**2**	**2**	**0**
	3	**7**	**0**	**3**

2.				
		2	3	2
x			2	6
	1	**3**	**9**	**2**
	4	**6**	**4**	**0**
	6	**0**	**3**	**2**

3.				
		6	1	4
x			1	8
	4	**9**	**1**	**2**
	6	**1**	**4**	**0**
1	**1**	**0**	**5**	**2**

4.				
		9	6	9
x			9	5
	4	**8**	**4**	**5**
8	**7**	**2**	**1**	**0**
9	**2**	**0**	**5**	**5**

5.				
		7	4	0
x			9	6
	4	**4**	**4**	**0**
6	**6**	**6**	**0**	**0**
7	**1**	**0**	**4**	**0**

6.				
		3	6	2
x			5	8
	2	**8**	**9**	**6**
1	**8**	**1**	**0**	**0**
2	**0**	**9**	**9**	**6**

7.					
		1	4	6	2
x				7	0
					0
1	**0**	**2**	**3**	**4**	**0**
1	**0**	**2**	**3**	**4**	**0**

8.					
		1	2	3	9
x				1	9
	1	**1**	**1**	**5**	**1**
	1	**2**	**3**	**9**	**0**
	2	**3**	**5**	**4**	**1**

9.					
		1	3	5	9
x				7	7
		9	**5**	**1**	**3**
	9	**5**	**1**	**3**	**0**
1	**0**	**4**	**6**	**4**	**3**

Problem Solving and Reasoning

Can you spot and correct the errors in the calculation?

		2	5	3	4
×				2	3
		$^{1}7$	5	$^{1}9$	2
		$^{1}5$	0	6	8
	1	2	$^{1}6$	$^{1}6$	0

Convince me!

Teddy has spilt some paint on his calculation.

		2		6	9
×				2	
	2	$^{6}2$	$^{5}9$	$^{7}5$	2
	$^{1}5$	$^{1}7$	$^{1}3$		0
		0	$^{1}3$	3	2

What are the missing digits?

What do you notice?

Use it!

Problem Solving and Reasoning
Answers

There are 2 errors.
In the first line of working, the exchanged ten has not been added.
In the second line of working, the place holder is missing.
The correct answer should be 58,282

The missing digits are all 8

Further Challenge

A three-digit number is multiplied by a two-digit number and the calculation is written out.

Each star stands for one digit.
Apart from the zero shown, the only digits which occur are 2, 3, 5 and 7. what are the missing numbers?