Steps to Success

Lockdown Learning - DT	
Date	**15.1.20**
Subject/s	**Maths**
Learning Objective 	To multiply decimal numbers by 10, 100 and 1000

		SA 	TA 
Success Criteria 	I can use a place value grid to support my learning.		
	I know that when multiplying by 10, 100 or 1000 the digits move 1, 2 or 3 places to the left.		
	I can put zero as a place holder when appropriate.		
Support	Independent Adult Support ( ) Group Work		

Pre-task

Complete the table below.

	×10	×100	×1,000
3.14			
13			
0.233			

Pre-task Answers

Complete the table below.

	×10	×100	×1,000
3.14	31.4	314	3140
13	130	1300	13000
0.233	2.33	23.3	233

Teacher Led

For this lesson you will need a place value grid like the one below – it shows thousands, hundreds, tens, ones, tenths, hundredths and thousandths. You can draw it yourself on a piece of paper

Th	H	T	O	1/10	1/100	1/1000

Today we will be multiplying by 10, 100 and 1000. We have done this before without decimals, exactly the same rules apply with decimals.

Lets start with multiplying by 10.

I know that when I multiply, my number will get bigger, so I need to move the digits one place to the left.

For my first example I can see 3.6 X 10 = 36. I have moved the digits one place to the left. I don't need to add anything after the ones.

Th	H	T	O	1/10	1/100	1/1000
		3	3	6		
			6			

For my next example I have done 1.03 X 10 = 10.3. Note that the zero stays between the numbers.

Th	H	T	O	1/10	1/100	1/1000
		1	1	0	3	
			0	3		

Th	H	T	O	1/10	1/100	1/1000
		~~0~~	0	0	8	
			0	8		

Now let's try multiplying by 100. I know that 100 is the same as 10 X 10, so I know I will need to move the digits 2 places to the left

Here I can see 3.263 X 100 = 326.3

Th	H	T	O	1/10	1/100	1/1000
	3	2	3	2	6	3
			6	3		

Now let's multiply by 1000. This is the same as 10 X 10 X 10, so I need to move the digits 3 places this time.

Here I can see 3.053 X 1000 = 3053

Th	H	T	O	1/10	1/100	1/1000
3	0	5	3	0	5	3

One last example. Here I can see 5.12 X 1000 = 5120. Notice that I needed to put in a zero as a place holder in the ones.

Th	H	T	O	1/10	1/100	1/1000
5	1	2	0	1	2	

Fluency

A)

	X 10	X 100	X 1000
5.7			
23.02			
0.92			
0.306			
24.67			

B)

	X 10	X 100	X 1000
4.02			
0.045			
34.094			
209.817			
0.006			

Fluency Answers

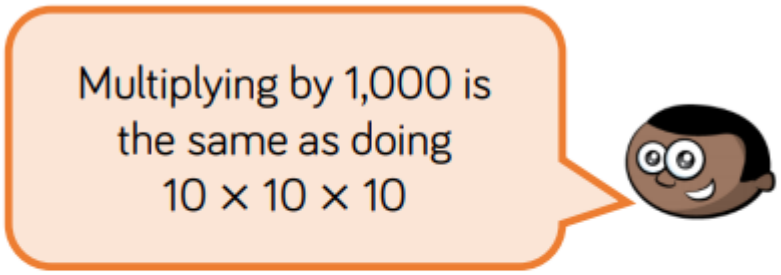
A)

	X 10	X 100	X 1000
5.7	57	570	5700
23.02	230.2	2302	23020
0.92	9.2	92	920
0.306	3.06	30.6	306
24.67	246.7	2467	24670

B)

	X 10	X 100	X 1000
4.02	40.2	402	4020
0.045	0.45	4.5	45
34.094	340.94	3409.4	34094
209.817	2098.17	20981.7	209817
0.006	0.06	0.6	6

Problem Solving and Reasoning

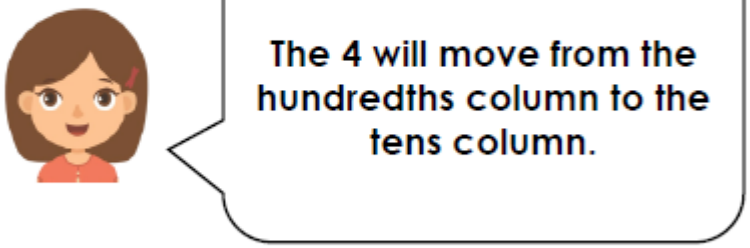


Do you agree with Mo?
Explain your answer.

Explain it!

. Hallie multiplies 0.741 by 100.

She says,



Is she correct?
Explain why.

Explain it!

Find the digit card that matches each calculation.

Use it!

A. 2.831 x 10 = 0.2831 | 28.31 | 283.1

B. 1.34 x 100 = 1,340 | 134 | 1.340

C. 12.06 x 1,000 = 12,060 | 120.60 | 1,206

Answers

Mo is correct, as you move the digits 3 places to the left in both cases.

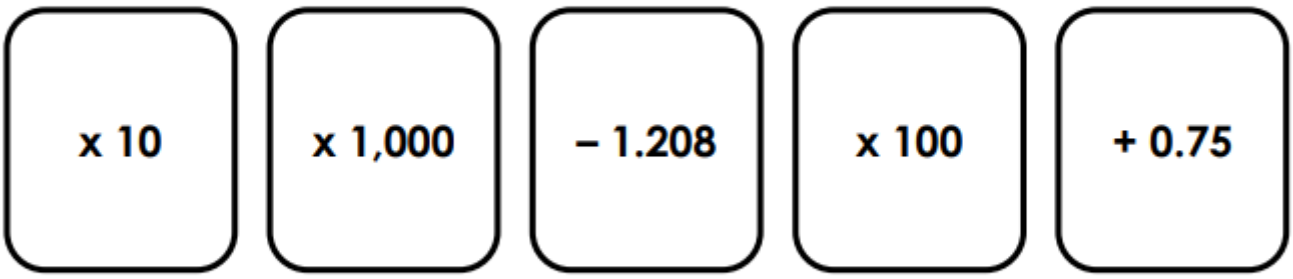
No, because the 4 will move from the hundredths to the ones column.

A. 28.31; B. 134; C. 12,060

Further Challenge:

1. Look at the function cards below.

Investigate which numbers you could start with in order to get as close as possible to 473.64. Your starting numbers must have 3 decimal places and an odd number of thousandths.



You must use at least two multiplications and a subtraction or addition in your answer and can use all of the cards multiple times.