

Multiplication and Division



Lesson 8

Multiply by 10, 100 and 1,000



Find these square and cube numbers:

a) $3^2 =$

b) $5^2 =$

c) $4^2 =$

d) $2^3 =$

e) $3^3 =$

f) $4^3 =$

Find these square and cube numbers:

a) $3^2 = 3 \times 3 = 9$

b) $5^2 = 5 \times 5 = 25$

c) $4^2 = 4 \times 4 = 16$

d) $2^3 = 2 \times 2 \times 2 = 8$

e) $3^3 = 3 \times 3 \times 3 = 27$

f) $4^3 = 4 \times 4 \times 4 = 64$

Multiply by 10, 100 and 1,000

The number 54 is represented in a place value chart below.

TTh	Th	H	T	O
			5	4

What columns are the digits in?

Multiply by 10, 100 and 1,000

The number 54 is represented in a place value chart below.

TTh	Th	H	T	O
			5	4

What columns are the digits in?

Tens and ones

Multiply by 10, 100 and 1,000

What will happen to the digits when I multiply by 10?

TTh	Th	H	T	O
			5	4

$$54 \times 10 =$$

Multiply by 10, 100 and 1,000

What will happen to the digits when I multiply by 10?

TTh	Th	H	T	O
			5	4

TTh	Th	H	T	O
		5	4	0

$$54 \times 10 = 540$$

The digits move one place value column to the left.



Multiply by 10, 100 and 1,000

What will happen to the digits when I multiply by 100?

TTh	Th	H	T	O
			5	4

$$54 \times 100 =$$

Multiply by 10, 100 and 1,000

What will happen to the digits when I multiply by 100?

TTh	Th	H	T	O
			5	4

TTh	Th	H	T	O
	5	4	0	0

$$54 \times 100 = 5,400$$

The digits move two place value columns to the left.



Multiply by 10, 100 and 1,000

What will happen to the digits when I multiply by 1,000?

TTh	Th	H	T	O
			5	4

$$54 \times 1,000 =$$

Multiply by 10, 100 and 1,000

What will happen to the digits when I multiply by 1,000?

TTh	Th	H	T	O
			5	4

TTh	Th	H	T	O
5	4	0	0	0

$$54 \times 1,000 = 54,000$$

The digits move three place value columns to the left.



Multiply by 10, 100 and 1,000

Complete these sentences with the vocabulary.

When I multiply by _____, each digit moves _____ place(s) to the _____ on the place value grid.

When I multiply by _____, each digit moves _____ place(s) to the _____ on the place value grid.

When I multiply by _____, each digit moves _____ place(s) to the _____ on the place value grid.

10

100

1,000

1

2

3

left

left

left



Multiply by 10, 100 and 1,000

Complete these sentences with the vocabulary.

When I multiply by **10**, each digit moves **1** place(s) to the **left** on the place value grid.

When I multiply by **100**, each digit moves **2** place(s) to the **left** on the place value grid.

When I multiply by **1,000**, each digit moves **3** place(s) to the **left** on the place value grid.



Multiply by 10, 100 and 1,000

Look at the multiplications represented on these place value charts.

TTh	Th	H	T	O
			2	7

TTh	Th	H	T	O
		2	7	0

$$27 \times 10 = 270$$

TTh	Th	H	T	O
	2	7	0	0

$$27 \times 100 = 2,700$$

TTh	Th	H	T	O
2	7	0	0	0

$$27 \times 1,000 = 27,000$$

Why are there no empty columns when the digits move to the left?



Multiply by 10, 100 and 1,000

Look at the multiplications represented on these place value charts.

TTh	Th	H	T	O
			2	7

TTh	Th	H	T	O
		2	7	0

$$27 \times 10 = 270$$

TTh	Th	H	T	O
	2	7	0	0

$$27 \times 100 = 2,700$$

TTh	Th	H	T	O
2	7	0	0	0

$$27 \times 1,000 = 27,000$$

Why are there no empty columns when the digits move to the left?

We use 0 as a place holder when we have empty columns.



Multiply by 10, 100 and 1,000

Look at the multiplications represented on these place value charts.

TTh	Th	H	T	O
			2	7

TTh	Th	H	T	O
		2	7	0

$$27 \times 10 = 270$$

TTh	Th	H	T	O
	2	7	0	0

$$27 \times 100 = 2,700$$

TTh	Th	H	T	O
2	7	0	0	0

$$27 \times 1,000 = 27,000$$

Complete these sentences.

270 is _____ the size of 27.

2,700 is _____ the size of 27.

27,000 is _____ the size of 27.



Multiply by 10, 100 and 1,000

Look at the multiplications represented on these place value charts.

TTh	Th	H	T	O
			2	7

TTh	Th	H	T	O
		2	7	0

TTh	Th	H	T	O
	2	7	0	0

TTh	Th	H	T	O
2	7	0	0	0

$$27 \times 10 = 270$$

$$27 \times 100 = 2,700$$

$$27 \times 1,000 = 27,000$$

Complete these sentences.

270 is **10 times** the size of 27.

2,700 is **100 times** the size of 27.

27,000 is **1,000 times** the size of 27.



Multiply by 10, 100 and 1,000

Use the place value charts to multiply the following numbers by 10:

a) $10,829 \times 10 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
		1	0	8	2	9			

b) $36.2 \times 10 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
					3	6	.	2	



Multiply by 10, 100 and 1,000

answer

Use the place value charts to multiply the following numbers by 10:

a) $10,829 \times 10 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
	1	0	8	2	9	0			

b) $36.2 \times 10 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
				3	6	2			

Multiply by 10, 100 and 1,000

Use the place value charts to multiply the following numbers by 100:

a) $6,417 \times 100 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
			6	4	1	7			

b) $294.7 \times 100 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
				2	9	4	.	7	



Multiply by 10, 100 and 1,000

Use the place value charts to multiply the following numbers by 100:

a) $6,417 \times 100 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
	6	4	1	7	0	0			

b) $294.7 \times 100 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
		2	9	4	7	0			



Multiply by 10, 100 and 1,000

Use the place value charts to multiply the following numbers by 1,000:

a) $1,983 \times 1,000 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
			1	9	8	3			

b) $261.34 \times 1,000 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
				2	6	1	.	3	4



Multiply by 10, 100 and 1,000

Use the place value charts to multiply the following numbers by 1,000:

a) $1,983 \times 1,000 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
1	9	8	3	0	0	0			

b) $261.34 \times 1,000 =$

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	.	tenths	hundredths
	2	6	1	3	4	0			



Multiply by 10, 100 and 1,000

Use $<$ $>$ or $=$ to compare the following multiplications:

$$46 \times 100 \quad \bigcirc \quad 4.7 \times 1000$$

$$23 \times 100 \quad \bigcirc \quad 3.3 \times 100$$



Multiply by 10, 100 and 1,000

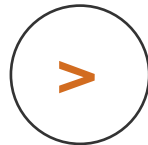
Use $<$ $>$ or $=$ to compare the following multiplications:

$$\begin{array}{r} 46 \times 100 \\ 4,600 \end{array}$$



$$\begin{array}{r} 4.7 \times 1000 \\ 4,700 \end{array}$$

$$\begin{array}{r} 23 \times 100 \\ 2,300 \end{array}$$



$$\begin{array}{r} 3.3 \times 100 \\ 330 \end{array}$$



Problem solving

Jackson has £130 in his bank.

Tony, Jackson's dad, has 100 times more money than Jackson.

Jackson

My dad has £130,000.

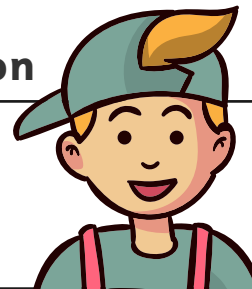


Jackson has £130 in his bank.

Tony, Jackson's dad, has 100 times more money than Jackson.

Jackson

My dad has £130,000.



£130 x 100 = £13,000 not £130,000

Your turn! Try the worksheet.

<p>Multiply by 10, 100 and 1,000</p> <p>Pictorial</p> <p>grammarsaurus.co.uk</p>	<p>1) Use the place value grid below to answer the following questions:</p> <p>a) $365 \times 10 =$</p> <table border="1"> <thead> <tr> <th>Millions</th> <th>Hundred Thousands</th> <th>Thousands</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>b) $365 \times 100 =$</p> <table border="1"> <thead> <tr> <th>Millions</th> <th>Hundred Thousands</th> <th>Thousands</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>c) $365 \times 1,000 =$</p> <table border="1"> <thead> <tr> <th>Millions</th> <th>Hundred Thousands</th> <th>Thousands</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Millions	Hundred Thousands	Thousands				Millions	Hundred Thousands	Thousands				Millions	Hundred Thousands	Thousands				<p>Multiply by 10, 100 and 1,000</p> <p>True OR False</p> <p>grammarsaurus.co.uk</p>	<p>1) Tick the correct box to show whether the statement is True or False.</p> <p>34 </p> <p>$473 \times 10 = 4730$</p> <p>2.9 </p> <p>3.14 </p> <p>grammarsaurus.co.uk</p>	<p>Multiply by 10, 100 and 1,000</p> <p>Pictorial</p> <p>grammarsaurus.co.uk</p>	<p>1) Use the place value grid below to answer the following questions:</p> <p>$365 \times 10 =$</p> <p>$365 \times 100 =$</p> <p>$365 \times 1,000 =$</p> <table border="1"> <thead> <tr> <th>Millions</th> <th>Hundred Thousands</th> <th>Ten Thousands</th> <th>Thousands</th> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> <th>tenths</th> <th>hundredths</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	tenths	hundredths									
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<p>Multiply by 10, 100 and 1,000</p> <p>$2+2=4$</p> <p>Fluency</p> <p>grammarsaurus.co.uk</p>	<p>2) Use the place value grid below to answer the following questions:</p> <table border="1"> <thead> <tr> <th>Millions</th> <th>Hundred Thousands</th> <th>Thousands</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Millions	Hundred Thousands	Thousands				<p>$2+2=4$</p> <p>Fluency</p> <p>grammarsaurus.co.uk</p>	<p>2) Answer the following questions:</p> <p>a) $34 \times 10 =$</p> <p>b) $473 \times 1,000 =$</p> <p>c) $48 \times 10 =$</p> <p>d) $3.7 \times 100 =$</p> <p>grammarsaurus.co.uk</p>	<p>Multiply by 10, 100 and 1,000</p> <p>$2+2=4$</p> <p>Fluency</p> <p>grammarsaurus.co.uk</p>	<p>2)</p> <p>a) $34 \times 100 =$</p> <p>b) $473 \times 1,000 =$</p> <p>c) $48 \times 10 =$</p> <p>d) $3.7 \times 100 =$</p> <p>e) $2.9 \times 1,000 =$</p> <p>f) $7.32 \times 100 =$</p> <p>g) $3.18 \times 10 =$</p>																														
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<p>Multiply by 10, 100 and 1,000</p>	<p>3) Circle the correct answer.</p> <p>a) 2</p>	<p>Multiply by 10, 100 and 1,000</p> <p>grammarsaurus.co.uk</p>	<p>3) Which is the odd one out?</p> <p>grammarsaurus.co.uk</p>	<p>Multiply by 10, 100 and 1,000</p>	<p>3) Use $<$ or $=$ to compare the following:</p>																																				