

# Multiplying by 10, 100 and 1,000

1 Draw counters to show each number multiplied by 10.

a)

T	O	•	Tth
	●	•	●●●

→

T	O	•	Tth
○	○○○	•	

$$1.3 \times 10 = \boxed{13}$$

b)

T	O	•	Tth	Hth
	●●●	•		●●●

→

T	O	•	Tth
○○○		•	○○○

$$3.03 \times 10 = \boxed{30.3}$$

2

a) Which of these represents the answer to 10.08 multiplied by 100?  
Tick your answer.

Th	H	T	O
1	0	0	8

☐

Th	H	T	O
1	0	8	0

☐

H	T	O	•	Tth
1	0	0	•	8

☒

b) Which of these represents the answer to 8.103 multiplied by 1,000?  
Tick your answer.

Th	H	T	O
8	1	3	0

☐

Th	H	T	O
8	1	0	3

☒

H	T	O	•	Tth
8	1	0	•	3

☐

c) What is 0.012 multiplied by 1,000?

$$0.012 \times 1,000 = \boxed{12}$$

3 Complete these calculations.

a)  $1.1 \times 10 = 11$

b)  $9990 = 99.9 \times 100$

c)  $2.5 \times 10 = 25$

$1.2 \times 10 = 12$

$99990 = 999.9 \times 100$

$2.5 \times 20 = 50$

$1.02 \times 10 = 10.2$

$0.999 \times 100 = 99.9$

$2.5 \times 200 = 500$

$102 = 1.02 \times 100$

$9.999 \times 1,000 = 9999$

$2.5 \times 2,000 = 5000$

4 a) A builder orders 400 bricks. One brick costs £1.50. What will be the total cost of the order?



$£1.50 \times 10 = £15$

$£1.50 \times 100 = £150$

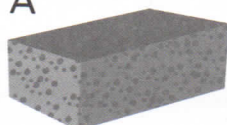
$£150 \times 4 = £600$

$A = £600$

The total cost of the order will be  $£600$ .

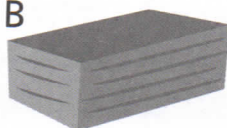
b) There are 500 of each type of brick. What is the total mass of all the bricks?

A



0.8 kg

B



1.2 kg

The total mass of all the bricks is  $1600\text{kg}$ .



A  $100 \times 0.8 = 80\text{kg}$

$80 \times 5 = 400\text{kg}$

B  $1.2 \times 100 = 120\text{kg}$

$120 \times 5 = 600\text{kg}$

$600 + 400 = 1000\text{kg}$

5 Bella says that when you multiply 5.02 by 100, you get 520. Explain her mistake using a place value grid.



$5.02 \times 100 = 502$  Bella you have multiplied 0.02 by 1000 to get 20. Keep all digits in the same order.



6 Complete each calculation.

a)  $0.025 \times 100 = 10 \times \boxed{0.25}$

$3.5 \times 40 = 400 \times \boxed{0.35}$

$1,000 \times 1.01 = 101 \times \boxed{10}$

$2.5 \times 200 = \boxed{5} \times 100$

$\boxed{0.09} \times 1,000 = 10 \times 9$

$5,000 \times \boxed{0.03} = 50 \times 3$

b)  $0.004 \times \blacktriangle = \star \times 0.04$

How many different solutions can you find?

	Solution 1	Solution 2	Solution 3	Solution 4	Solution 5	Solution 6	Solution 7
$\blacktriangle$	10	100	1000	10000	1		
$\star$	1	10	100	1000	0.1		



There are an infinite number of solutions. so long as  $\blacktriangle$  is 10 x bigger than  $\star$  it is correct.

## Reflect

- When multiplying decimals by 10, 100 and 1,000, I will

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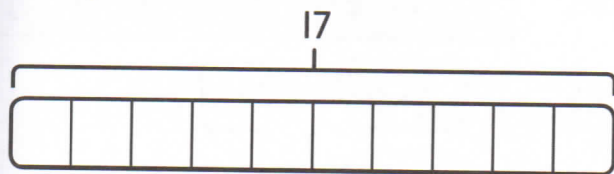
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# Dividing by multiples of 10, 100 and 1,000

1 Complete each division.

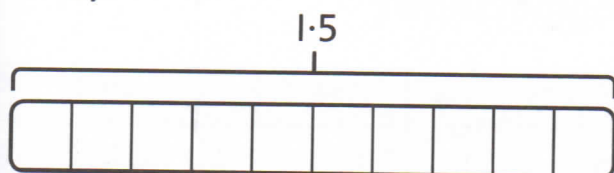
a)



H	T	O	•	Tth	Hth	Thth
	1	7	•			

$$17 \div 10 = \boxed{1.7}$$

b)



H	T	O	•	Tth	Hth	Thth
		1	•	5		

$$1.5 \div 10 = \boxed{1.5}$$

- 2 A leaking tap loses the same amount of water every day. After 100 days, it has lost 125 litres of water. How much water does it lose each day?



$$125 \div 100 = 1.25 \text{ litres.}$$

The tap loses  $\boxed{1.25}$  litres of water each day.

- 3 Which of these represents the answer to 2,050 divided by 1,000? Tick your answer.

O	•	Tth	Hth	Thth
2	•	0	0	5

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O	•	Tth	Hth	Thth
0	•	2	0	5

☐

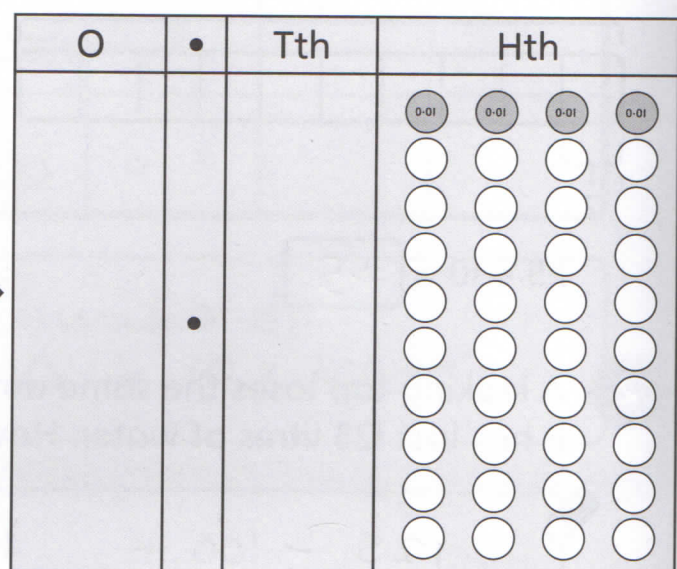
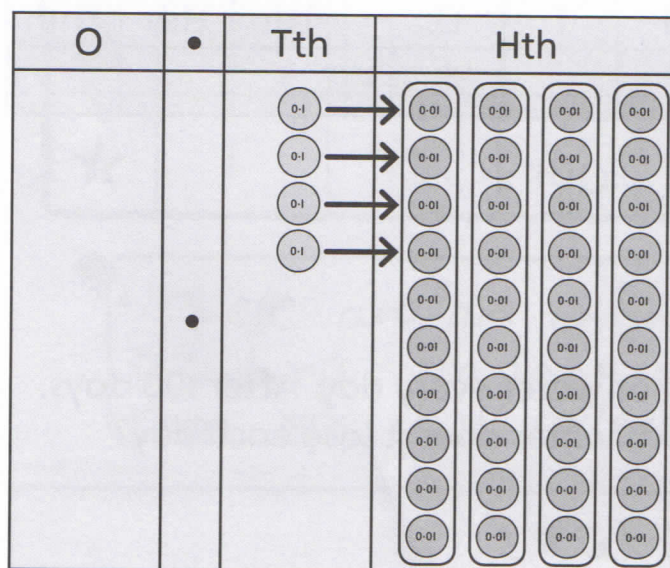
O	•	Tth	Hth
2	•	0	5

☒

O	•	Tth
2	•	5

☐

- 4 What division calculation does this diagram show?



$$0.4 \div 10 = 0.04$$

- 5 Each number has been divided by 10, 100 or 1,000. Complete the calculations.

O	•	Tth	Hth	Thth
0	•	3	0	6

$$30.6 \div 100 = 0.306$$

O	•	Tth	Hth
0	•	3	6

$$3.6 \div 10 = 0.36$$

O	•	Tth	Hth	Thth
0	•	0	3	6

$$36 \div 1000 = 0.036$$



6 Complete these calculations.

a)  $240 \div 200 = \boxed{1.2}$

b)  $240 \div 6,000 = 0.04$

c)  $\boxed{1.2} = 24 \div 20$

$$240 \div 300 = 0.8$$

$$240 \div 4,000 = 0.06$$

$$\boxed{0.8} = 24 \div 30$$

$$240 \div 400 = 0.6$$

$$240 \div 3,000 = 0.08$$

$$\boxed{0.6} = 24 \div 40$$

$$240 \div 600 = 0.4$$

$$240 \div 8,000 = 0.03$$

$$\boxed{0.2} = 24 \div 120$$

7 Join the numbers to make six accurate divisions.  
Write each division out in full. One has been done for you.

206  $\div 10$  2.6

$$\rightarrow \underline{260 \div 100 = 2.6}$$

$$26 \div 100 = 0.26$$

→  $206 \div 1,000 = 0.206$

~~$260 \div 1,000 = 0.206$~~

$$\rightarrow \underline{2.06 \div 10 = 0.206}$$

$$\cancel{20.6} \div 10 = 0.026$$

$$\rightarrow 2.6 \div 100 = 0.026$$

$$2.6 \div 100 = 0.026$$

$$\rightarrow \underline{26 \div 1000 = 0.026}$$

$2.06 \div 1,000 = 2.06$

$$\rightarrow 20.6 \div 10 = 2.06$$

## Reflect

Write a word problem that is solved by dividing by 10, 100 or 1,000 and gives a decimal answer. Find the answer to your word problem.

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