

Multiply and divide by powers of 10



1 Draw counters in the place value charts on the right-hand side to show the new number. Then write the calculation.

a)

T	O
● ●	
● ●	
●	

×10

H	T	O

=

	×		=	
--	---	--	---	--

b)

O	Tth	Hth
● ●		

÷10

T	O	Tth	Hth

=

	÷		=	
--	---	--	---	--

c)

O	Tth	Hth
● ●	● ●	
● ●	● ●	
	● ●	
	● ●	

÷100

O	Tth	Hth	Thth

=

	÷		=	
--	---	--	---	--

2 The place value charts show Teddy's counters before and after completing a calculation.

Before

H	T	O	Tth	Hth	Thth
● ●	● ●	●			
●	● ●				
	●				

After

H	T	O	Tth	Hth	Thth
			●	● ●	●
			●	● ●	
			●	●	

What calculation has Teddy worked out?

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How do you know?

- 3 Discuss with a partner what happens to the digits when:
- you multiply a number by 10
 - you divide a number by 100
 - you multiply a number by 1,000



4 Complete the calculations.

Use a place value chart to help you if you need it.

a) $23 \times 10 =$ <input type="text"/>	c) $490 \div 10 =$ <input type="text"/>
$23 \times 100 =$ <input type="text"/>	$490 \div 100 =$ <input type="text"/>
$23 \times 1,000 =$ <input type="text"/>	$490 \div 1,000 =$ <input type="text"/>
b) $1.42 \times 10 =$ <input type="text"/>	d) $78 \div 10 =$ <input type="text"/>
$1.42 \times 100 =$ <input type="text"/>	$7.8 \div 10 =$ <input type="text"/>
$1,000 \times 1.42 =$ <input type="text"/>	$0.78 \div 10 =$ <input type="text"/>
$10,000 \times 1.42 =$ <input type="text"/>	$7.08 \div 10 =$ <input type="text"/>

5 Complete the calculations.

a) $56 \times 1,000 =$ <input type="text"/>	e) $3.043 \times 100 =$ <input type="text"/>
b) $0.48 \div 100 =$ <input type="text"/>	f) $489,000 \div 10,000 =$ <input type="text"/>
c) $15.2 \div 1,000 =$ <input type="text"/>	g) $10,000 \times 0.17 =$ <input type="text"/>
d) $2.3 \times 1,000 \div 10 =$ <input type="text"/>	h) $100 \times 0.461 \div 1,000 =$ <input type="text"/>

6 Fill in the missing numbers.

a) $0.409 \div$ <input type="text"/> $= 0.0409$	d) <input type="text"/> $\div 1,000 = 1,056$
b) <input type="text"/> $\times 100 = 24,040$	e) $42 \div 1,000 \times$ <input type="text"/> $= 4.2$
c) $1,000 \times$ <input type="text"/> $= 0.8$	



7 Solve the equations.

a) $\frac{x}{100} = 10.8$

c) $10k = 94.6$

$x =$ _____

$k =$ _____

b) $17.25h = 17,250$

d) $\frac{y}{1000} = 1.04$

$h =$ _____

$y =$ _____

8 Nijah answers this question.

$0.4 \times 100 =$ 0.400

What mistake has Nijah made?

9

A a positive multiple of 50

B 100 times larger than A

C 10 times smaller than A

Are these statements always, sometimes or never true?

B is a multiple of 5 _____ B \div C is an integer _____

B < C _____

C \div B is an integer _____

B > C _____

B is 10 times smaller than C _____

