

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
●● ●● ●	

$\times 10$

H	T	O
○○ ○○ ○		

$50 \times 10 = 500$

b)

O	Tth	Hth
●●		

$\div 10$

T	O	Tth	Hth
		○○	

$2 \div 10 = 0.2$

c)

O	Tth	Hth
●● ●●	●● ●● ●● ●●	

$\div 100$

O	Tth	Hth	Thth
		○○ ○○	○○ ○○ ○○ ○○

$4.8 \div 100 = 0.048$

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?

$351 \div 1,000 = 0.351$

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" value="230"/>	c) $490 \div 10 =$ <input type="text" value="49"/>
$23 \times 100 =$ <input type="text" value="2,300"/>	$490 \div 100 =$ <input type="text" value="4.9"/>
$23 \times 1,000 =$ <input type="text" value="23,000"/>	$490 \div 1,000 =$ <input type="text" value="0.49"/>
b) $1.42 \times 10 =$ <input type="text" value="14.2"/>	d) $78 \div 10 =$ <input type="text" value="7.8"/>
$1.42 \times 100 =$ <input type="text" value="142"/>	$7.8 \div 10 =$ <input type="text" value="0.78"/>
$1,000 \times 1.42 =$ <input type="text" value="1,420"/>	$0.78 \div 10 =$ <input type="text" value="0.078"/>
$10,000 \times 1.42 =$ <input type="text" value="14,200"/>	$7.08 \div 10 =$ <input type="text" value="0.708"/>

5 Complete the calculations.

a) $56 \times 1,000 =$ <input type="text" value="56,000"/>	e) $3.043 \times 100 =$ <input type="text" value="304.3"/>
b) $0.48 \div 100 =$ <input type="text" value="0.0048"/>	f) $489,000 \div 10,000 =$ <input type="text" value="48.9"/>
c) $15.2 \div 1,000 =$ <input type="text" value="0.0152"/>	g) $10,000 \times 0.17 =$ <input type="text" value="1,700"/>
d) $2.3 \times 1,000 \div 10 =$ <input type="text" value="230"/>	h) $100 \times 0.461 \div 1,000 =$ <input type="text" value="0.0461"/>

6 Fill in the missing numbers.

a) $0.409 \div$ <input type="text" value="10"/> $= 0.0409$	d) <input type="text" value="1,056,000"/> $\div 1,000 = 1,056$
b) <input type="text" value="240.4"/> $\times 100 = 24,040$	e) $42 \div 1,000 \times$ <input type="text" value="100"/> $= 4.2$
c) $1,000 \times$ <input type="text" value="0.0008"/> $= 0.8$	



7 Solve the equations.

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

$x =$

b) $17.25h = 17,250$

$h =$

c) $10k = 94.6$

$k =$

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

$y =$

8 Nijah answers this question.

$0.4 \times 100 =$

What mistake has Nijah made?

9

- | | | | |
|---|--------------------------------------------------------|---|------------------------------------------------------|
| A | <input type="text" value="a positive multiple of 50"/> | B | <input type="text" value="100 times larger than A"/> |
| C | <input type="text" value="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

