

# 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

$\square \times \square = \square$

b)

O	Tth	Hth
●●		

$\div 10$

T	O	Tth	Hth

$\square \div \square = \square$

c)

O	Tth	Hth
●● ●●	●● ●● ●● ●●	

$\div 100$

O	Tth	Hth	Thth

$\square \div \square = \square$

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?

$\square \bigcirc \square = \square$

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 \_\_\_\_\_

