MULTIPLY AND DIVIDE BY 10, 100 AND 1000

BUILDING BLOCKS

NAME _____ CLASS _____ DATE _____

KEY IDEA

× 10

10 times bigger.
Every digit moves
1 place to the LEFT.
A 0 fills the ones place.

H	T	O
	2	3
2	3	0

23 × 10 = 230

÷ 10

10 times smaller.
Every digit moves
1 place to the RIGHT.
The 0 is no longer needed.

H	T	O
4	5	0
	4	5

450 ÷ 10 = 45

1 Write the new digits in the chart. Then write the answer.

a)

H	T	O
	4	5

45 × 10 = ☐

b)

H	T	O
	6	2

62 × 10 = ☐

c)

H	T	O
		8

8 × 100 = ☐

2 Dividing by 10 moves every digit 1 place to the right. Complete.

a)

H	T	O	t
3	7	0	

370 ÷ 10 = ☐

b)

H	T	O	t
	5	6	

56 ÷ 10 = ☐

c)

H	T	O	t
		9	

9 ÷ 10 = ☐

3 Complete the function machines.

a) 6 → × 10 → ☐ → × 10 → ☐

b) 25 → × 100 → ☐

c) 4000 → ÷ 10 → ☐ → ÷ 10 → ☐

4 Draw lines to match each calculation to its answer.

3 × 100	0.3
30 ÷ 10	3000
3 × 1000	300
3 ÷ 10	3

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SUPPORT

NAME _____ CLASS _____ DATE _____

KEY IDEA

The digits move.
The decimal point stays still.

× 10, 100, 1000:
digits move 1, 2, 3 places LEFT

÷ 10, 100, 1000:
digits move 1, 2, 3 places RIGHT



4.7 × 100 = 470
2 places left

36 ÷ 100 = 0.36
2 places right

1 Multiply. Write the new digits in the blank row, then write the answer.

Th	H	T	O	t	h	
			2	. 6		× 10
				.		
			0	. 8	5	× 100
				.		

a) 2.6 × 10 = ____

b) 0.85 × 100 = ____

2 Divide. Write the new digits in the blank row, then write the answer.

T	O	t	h	th	
4	6	.			÷ 100
		.			
	7	.	2		÷ 10
		.			

a) 46 ÷ 100 = ____

b) 7.2 ÷ 10 = ____

3 Lily says, "2.3 × 10 = 2.30 because you add a zero."

a) Explain why Lily is wrong.

b) What is the correct answer? ____

4 Find each missing number.

a) 5.6 × ____ = 560

b) 72 ÷ ____ = 0.72

c) ____ × 1000 = 4300

d) ____ ÷ 10 = 0.08

MULTIPLY AND DIVIDE BY 10, 100 AND 1000

CORE

NAME _____ CLASS _____ DATE _____

KEY IDEA

Multiplying by 10, 100 or 1000 moves every digit 1, 2 or 3 places to the left; dividing moves them to the right. The decimal point does not move. Use 0 as a placeholder, e.g. 60.07 ÷ 10: the 6 moves into the ones and the 7 into the thousandths.

FLUENCY

1 Work out each calculation.

a) **3.07 × 100** ☐

b) **60.07 ÷ 10** ☐

c) **0.0652 × 1000** ☐

d) **518 ÷ 1000** ☐

e) **9.6 ÷ 100** ☐

f) **0.004 × 10** ☐

2 Complete the function machines.

a) **0.37** → **× 100** → ☐ → **÷ 1000** → ☐

b) ☐ → **× 10** → **52** → **÷ 100** → ☐

REASONING

3 A box of 100 pencils costs £23.

a) How much does one pencil cost? ☐

b) How much do 1000 pencils cost? ☐

4 1 km = 1000 m and 1 m = 100 cm.

a) Ali runs 4.25 km. How many metres is this? ☐ **m**

b) A 3.6 m ribbon is cut into 10 equal pieces. How long is each piece in cm? ☐

MULTIPLY AND DIVIDE BY 10, 100 AND 1000

GREATER DEPTH

NAME _____ CLASS _____ DATE _____

REASONING

1 Is each statement always, sometimes or never true? Circle your answer.

Give an example to support each answer.

a) A decimal × 10 gives a whole number. ALWAYS SOMETIMES NEVER

b) A whole number ÷ 100 gives a decimal. ALWAYS SOMETIMES NEVER

c) × 100, then ÷ 10, is the same as × 10. ALWAYS SOMETIMES NEVER

d) ÷ 1000 gives a smaller number. ALWAYS SOMETIMES NEVER

PROBLEM SOLVING

2 Ravi says, "0.7 × 1000 gives the same answer as 70 × 10." Is he right? Explain how you know.

3 Write three different ways to turn 0.45 into 450 using only × or ÷ 10, 100 or 1000.

0.45 ..... **450**

0.45 ..... **450**

0.45 ..... **450**

★ CHALLENGE FOR ALL

4 A number goes through this machine.



a) What is the output? ____

b) Which single step does the same job as the whole machine? ____

c) A different number goes in. The output is 0.7. What went in? ____

MULTIPLY AND DIVIDE BY 10, 100 AND 1000

ANSWERS

BUILDING BLOCKS

1 a) 450 · b) 620 · c) 800
2 a) 37 · b) 5.6 · c) 0.9
3 a) 60, 600 · b) 2500 · c) 400, 40
4 3 × 100 = 300 · 30 ÷ 10 = 3 · 3 × 1000 = 3000 · 3 ÷ 10 = 0.3

SUPPORT

1 a) 26 · b) 85
2 a) 0.46 · b) 0.72
3 a) Multiplying by 10 moves the digits one place to the left; 2.30 is the same value as 2.3. b) 23
4 a) 100 · b) 100 · c) 4.3 · d) 0.8

CORE

1 a) 307 · b) 6.007 · c) 65.2 · d) 0.518 · e) 0.096 · f) 0.04
2 a) 37, 0.037 · b) 5.2, 0.52
3 a) £0.23 (23p) · b) £230
4 a) 4250 m · b) 36 cm

GREATER DEPTH

1 a) Sometimes (2.5 × 10 = 25, but 2.35 × 10 = 23.5) · b) Sometimes (45 ÷ 100 = 0.45, but 300 ÷ 100 = 3) · c) Always · d) Sometimes (true for positive numbers; 0 ÷ 1000 = 0)
2 Yes: 0.7 × 1000 = 700 and 70 × 10 = 700. 0.7 × 100 = 70, so 0.7 × 1000 = 70 × 10.
3 e.g. × 1000; × 10 then × 100; × 100, × 100, then ÷ 10
4 a) 48 · b) × 10 · c) 0.07