MULTIPLY DECIMALS

BUILDING BLOCKS

NAME _____ CLASS _____ DATE _____

KEY IDEA

3 × 0.4 means 3 groups of 0.4.

Count the tenths: 12 tenths.

10 tenths make 1 one, so 12 tenths = 1.2

3 × 0.4 = 1.2



1 Each counter is 0.1. Complete each multiplication.

a) 

b) 

2 × 0.3 = ☐ **4 × 0.2 =** ☐

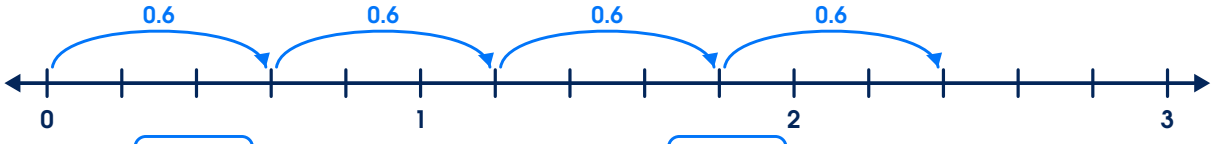
2 Use the multiplication fact to help you. The answer is 10 times smaller.

a) **6 × 4 = 24** → so **6 × 0.4 =** ☐

b) **7 × 3 = 21** → so **0.7 × 3 =** ☐

c) **8 × 5 = 40** → so **8 × 0.5 =** ☐

3 The number line shows jumps of 0.6. Complete the multiplications.



4 × 0.6 = ☐ 5 × 0.6 = ☐

4 Money problems.

£0.30 £0.30 £0.30 £0.30 £0.30

a) One pencil costs £0.30. How much do 5 pencils cost? ☐

b) One drink costs £1.20. How much do 4 drinks cost? ☐

MULTIPLY DECIMALS

SUPPORT

NAME _____ CLASS _____ DATE _____

KEY IDEA

Make the decimal a whole number, multiply, then adjust.

If you multiplied by 10 at the start, divide by 10 at the end.

2.3 → × 10 → 23 → × 4 → 92 → ÷ 10 → 9.2

Estimate first to check: 2.3 × 4 ≈ 2 × 4 = 8

1 Complete each chain. Then work out c) and d) the same way.

a) 3.6 → × 10 → ☐ → × 2 → ☐ → ÷ 10 → ☐

b) 4.7 → × 10 → ☐ → × 3 → ☐ → ÷ 10 → ☐

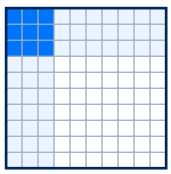
c) 0.24 × 5 = ☐

d) 12.5 × 6 = ☐

2 Each hundred square is 1 whole. The dark overlap shows the answer.

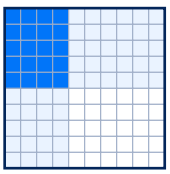
Hint: each small square in the hundred square is worth 0.01.

a)



0.3 × 0.3 = ☐

b)



0.4 × 0.5 = ☐

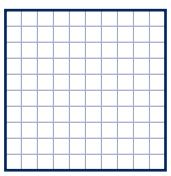
3 Priya says, "0.4 × 0.2 = 0.8"

a) Explain Priya's mistake.

.....

.....

b) What is 0.4 × 0.2? ☐



Shade it to help you

4 Estimate, then calculate.

a) **4.9 × 6 ≈** ☐ Exact answer: ☐

b) A cinema ticket costs £6.75. How much do 3 tickets cost? ☐

MULTIPLY DECIMALS

CORE

NAME _____ CLASS _____ DATE _____

KEY IDEA

Multiply the decimals as whole numbers, then adjust: 3.2 × 1.4 → 32 × 14 = 448. Each number was made 10 times bigger, so divide by 100: 4.48. Estimate to check: 3 × 1 = 3. For 4.99 × 6, use 5 × 6 – 0.01 × 6.

FLUENCY

1 Work out each calculation.

a) **7.6 × 8** ☐

b) **2.45 × 6** ☐

c) **3.2 × 1.4** ☐

d) **0.36 × 0.7** ☐

e) **15.3 × 2.6** ☐

f) **0.08 × 0.6** ☐

2 64 × 37 = 2368. Use this fact to work out each calculation.

a) **6.4 × 37** ☐

b) **6.4 × 3.7** ☐

c) **0.64 × 3.7** ☐

d) **6400 × 0.37** ☐

REASONING

3 Find each missing number.

a) ☐ **× 0.6 = 2.4**

b) **0.15 ×** ☐ **= 0.6**

c) **1.2 ×** ☐ **= 0.36**

4 Leo says, "1.8 × 25 = 18 × 2.5". Is he right? Explain, and find the value.

MULTIPLY DECIMALS

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) Decimal × decimal gives a smaller answer. ALWAYS SOMETIMES NEVER

b) Multiplying by 0.5 halves a number. ALWAYS SOMETIMES NEVER

c) 1 d.p. × 1 d.p. gives an answer with 2 d.p. ALWAYS SOMETIMES NEVER

PROBLEM SOLVING

2 A rectangular floor is 4.5 m by 3.2 m. Carpet costs £8.75 per square metre.



a) Area of the floor: _____ m²

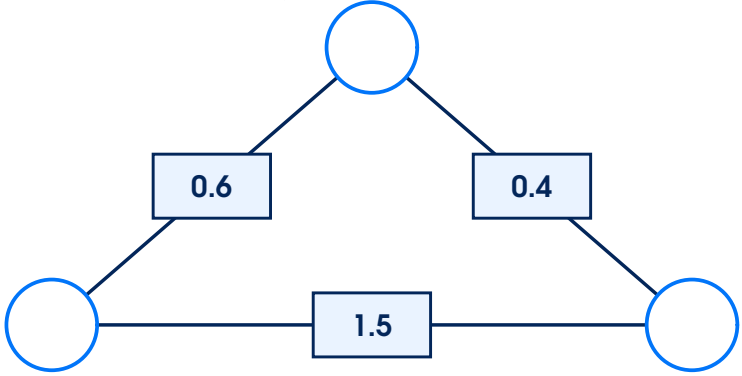
b) Cost of the carpet: _____

3 Use a compensation method to work out each calculation mentally.

a) **4.99 × 6** _____ **b)** **2.98 × 5** _____

★ CHALLENGE FOR ALL

4 Find the numbers that go in the circles.



Each square is the product of the two circles next to it.

MULTIPLY DECIMALS

ANSWERS

BUILDING BLOCKS

1 a) 0.6 · b) 0.8
2 a) 2.4 · b) 2.1 · c) 4
3 2.4 · 3
4 a) £1.50 · b) £4.80

SUPPORT

1 a) 36, 72, 7.2 · b) 47, 141, 14.1 · c) 1.2 · d) 75
2 a) 0.09 (9 hundredths) · b) 0.2 (20 hundredths)
3 a) 4 × 2 = 8, but tenths × tenths gives hundredths, so the answer is 100 times smaller than 8, not 10 times. b) 0.08
4 a) 5 × 6 = 30; exact 29.4 · b) £20.25

CORE

1 a) 60.8 · b) 14.7 · c) 4.48 · d) 0.252 · e) 39.78 · f) 0.048
2 a) 236.8 · b) 23.68 · c) 2.368 · d) 2368
3 a) 4 · b) 4 · c) 0.3
4 Yes. 1.8 is 18 ÷ 10 and 2.5 is 25 ÷ 10, so both equal 18 × 25 ÷ 10 = 45.

GREATER DEPTH

1 a) Sometimes (0.5 × 0.4 = 0.2, but 1.5 × 2.5 = 3.75) · b) Always · c) Sometimes (0.3 × 0.2 = 0.06, but 0.5 × 0.4 = 0.2)
2 a) 14.4 m² · b) £126
3 a) 30 − 0.06 = 29.94 · b) 15 − 0.1 = 14.9
4 Top 0.4, bottom left 1.5, bottom right 1 (0.4 × 1.5 = 0.6, 0.4 × 1 = 0.4, 1.5 × 1 = 1.5)