Chapter 9
Lesson 2

Multiplying Money Amounts by One-Digit Numbers

You will need
- play coins
- base ten blocks
- a place value chart

GOAL

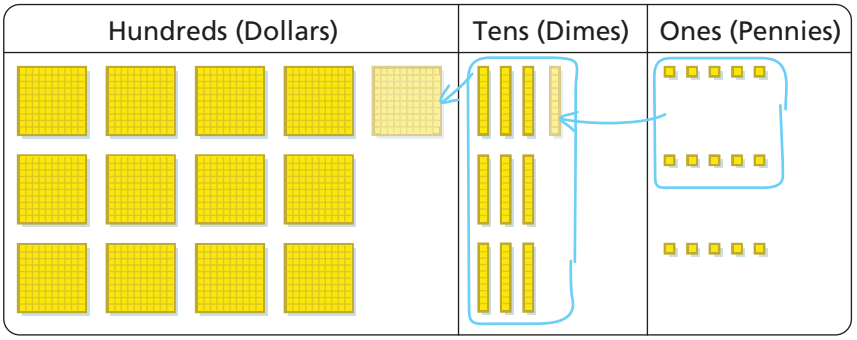
Multiply decimal hundredths by one-digit numbers using different strategies.

Félix plans to buy his mother three bars of special soap. Each bar costs $4.35.

How much will three bars of soap cost?

Grace's Solution

I'll think of 3 × 4.35 as 3 groups of 435 pennies.
I'll model 3 groups of 435 with base ten blocks.
I can regroup 10 ones as 1 ten.
I can regroup 10 tens as 1 hundred.
There are 13 hundreds, 0 tens, and 5 ones.



$$\begin{array}{r} {\scriptstyle 1\,1} \\ 435 \\ \times\ \ 3 \\ \hline 1305 \end{array}$$

1305 pennies is $13.05, so 3 bars of soap will cost $13.05.

Félix's Solution

I can use front-end estimation to estimate the cost.
The total cost will be more than \$12, since $3 \times \$4 = \$12$ and each bar of soap costs a little more than \$4.
I can calculate the exact cost of 3 bars of soap using \$4.35 + \$4.35 + \$4.35 or by multiplying \$4.35 by 3.
I'll use 3 groups of 4 loonies, 3 groups of 3 dimes, and 3 groups of 5 pennies.

4.35
x 3
12.00 (3 x 4 loonies = 12 loonies)
0.90 (3 x 3 dimes = 9 dimes)
+ 0.15 (3 x 5 pennies = 15 pennies)
13.05

The soap will cost \$13.05. This is close to \$12, so my answer is reasonable.

Reflecting

A. Why did it make sense for Grace to calculate 3×435 to solve the problem?

B. Why did Félix record the first 0 in 0.90 and the 0 in 0.15 below the 2 in 12.00?

Checking

1. Félix is also planning to buy two bottles of bubble bath. Each bottle costs \$4.79.

a) Estimate the total cost. Explain your estimate.

b) Calculate the total cost for the two bottles of bubble bath. Use a model, and show your work.

Practising

2. Amy bought five bars of soap that cost $4.28 each.

a) Estimate the total cost of Amy's order. Explain how you estimated.

b) Model the total cost. Sketch your model.

3. Calculate.

a) 2 3 $6.88

b) 7 3 $3.25

c) $0.99 3 4

d) $75.00 3 5

4. Some T-shirts were on sale for $4.89 each. Julie bought three T-shirts and Abigail bought five T-shirts. How much more did Abigail spend?

5. A music store is selling some of its older CDs for $7.99 each. How much will five CDs cost?

6. Each product below is missing a decimal point. Describe where the decimal point should be placed. Explain one answer.

a) $7 \times 14.23 = 9961$

b) $3 \times 16.17 = 4851$

c) $6 \times 25.4 = 1524$

d) $9 \times 11.7 = 1053$

7. Walnuts cost $4.79 for 1 kg. Tara spent $9.48 on walnuts. How do you know that she did not buy a whole number of kilograms?

8. Calculate.

a) $2.37 × 3

b) $15.50 × 7

c) $23.45 × 6

d) $9.21 × 9

9. A can of juice costs $1.36.

a) How do you know that the cost of four cans of juice is between $4 and $8?

b) How much do four cans of juice cost? Show your work.

10. Calculate each cost.

a) eight bus tickets

b) six combination locks

c) three dozen eggs

d) zero T-shirts

11. Estimate to show that each of your answers in Question 10 makes sense. Show your work.

12. Kyle has six times as much money as shown here. How much money does he have? Show your work.

13. Brad multiplied 8.97 by 4 and said the answer is 358.8.

a) How do you know that 358.8 is incorrect?

b) Correct the error. Show your thinking.

14. What are the missing digits in each number sentence?

a) $3 \times \$\square.\square 7 = \$26.01$

b) $\square \times \$4.2\square = \$25.68$

15. How might knowing that $4.23 = 423$ hundredths help you multiply 4.23 by 7?