



LESSON 3.4b
Dividend in the House

6.NS.2
6.NS.3

Objective **Dividing with Surface Area and Volume**

Warm-Up



Calculate each quotient.

1. $328 \div 7$

2. $1381 \div 26$

3. $954 \div 11$

4. $3383 \div 54$

Let's investigate an algorithm for dividing a decimal by a decimal. You already know how to divide a decimal by a whole number. You also know that if you multiply or divide both the dividend and the divisor by the same number, the quotient remains the same.

WORKED EXAMPLE

The diagram shows $7.7 \div 3.5$.

The first step is to rewrite the division sentence so the divisor is a whole number. Multiply both the divisor and dividend by 10. This changes the value of both numbers.

77 divided by 35 is 2 with 7 left over, because $2 \times 35 + 7 = 77$.

70 tenths divided by 35 is 2 tenths with 0 left over.

$$\begin{array}{r}
 3 \ . \ 5 \ . \ \overline{) 7 \ . \ 7 \ 0} \\
 \underline{-7} \quad \quad \quad \\
 \quad \quad \quad 0 \\
 \quad \quad \quad \underline{7} \quad \quad \quad \\
 \quad \quad \quad \quad \quad \quad \underline{-7} \quad \quad \quad \\
 \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad 0 \\
 \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad 0
 \end{array}$$

Place the decimal point in the quotient.

3. Examine the worked example.

a. Explain how the worked example shows that $\frac{7.7}{3.5} = \frac{77}{35}$

b. Why does the diagram show subtracting 70 from the 77 in the dividend?

c. What does $70 - 70$ represent in the diagram?

4. Rewrite each division sentence so the divisor is a whole number. Then calculate the quotient using long division.

a. $59.5 \div 0.1$

b. $0.0145 \div 0.5$

c. $19.36 \div 3.2$



Let's apply what you have learned about decimal operations to solve problems with volume and surface area.

1. The surface area for a cube is given. Calculate the area of each face of the cube.

a. 36.45 square inches

b. 768 square feet

c. 59.94 square centimeters

2. Marjorie uses a loaf pan to make cornbread. The pan is 8.5 inches long, 4.5 inches wide, and 2.5 inches deep.

a. The pan has a volume of approximately 6.6 cups. What is the approximate volume of each cup in cubic inches?

Estimate and then calculate your answer. Show your work.

b. The cornbread Marjorie makes fills only half the depth of the loaf pan. How much cornbread does Marjorie make?

Give your answer in cups and cubic inches.

**Show You
KNOW**

A Short Long Division Activity

Use the standard algorithm to determine each quotient.

1. $5168 \div 646$

2. $331.25 \div 53$

3. $9.44 \div 2.95$

4. $6.85 \div 0.5$

For each division statement given, write two division statements that have the same quotient.

5. $50.32 \div 7.4 = 6.8$

6. $10.4 \div 2.6 = 4$

**LESSON 3.4b**
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Objective

Dividing with Surface Area and Volume

Practice

Estimate each quotient. Then calculate the quotient using long division. Round to the nearest hundredth.

1. $51.68 \div 8$

2. $93.45 \div 6.23$

3. $29.988 \div 2.04$

4. $38 \div 7$

5. $49.7 \div 25.3$

6. $118 \div 26$

7. $24.4 \div 8.3$

8. $603 \div 98$

Stretch

The volume of the trapezoidal prism is 1279.152 cubic feet.

Determine the height of the trapezoid base.



