

Lesson 6-4

Tuesday, December 3, 2019 8:26 AM

Name MB 319

Lesson 6-4 Divide by a 1-Digit Whole Number

Solve & Share

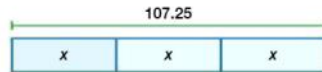
A concrete mason separated 107.25 pounds of sand evenly into 3 containers. How much sand did he put into each container? Solve this problem any way you choose.

I can ...
divide decimals by a whole number.

Content Standard 5.NBT.B.7
Mathematical Practices MP.1, MP.2, MP.3, MP.4, MP.8

Estimate, Solve, and Check

Generalize How can you connect what you know about dividing whole numbers to dividing a decimal by a whole number? Show your work!



$$120 \div 3 = 40$$

$$107.25 \div 3 = x$$

$$90 \div 3 = 30$$

$$\begin{array}{r} \times 35.75 \\ 3 \overline{) 107.25} \\ \underline{-9} \\ 17 \\ \underline{-15} \\ 22 \\ \underline{-21} \\ 10 \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \\ \underline{-9} \\ 10 \end{array}$$

$$\begin{array}{r} 35.75 \\ \times 3 \\ \hline 107.25 \end{array}$$

2dp 10dp 2dp

35.75 lbs

Look Back! **MP.2 Reasoning** How can you estimate the answer to the problem above?

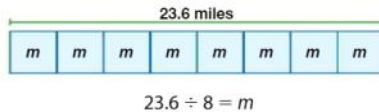
See Above

Essential Question: How Can You Divide a Decimal by a Whole Number?

While on a backpacking trip, Bradley hiked 23.6 miles in 8 hours. If he hiked the same number of miles each hour, how many miles did he hike each hour?

You can use division to find equal groups.

Think: $8 \times m = 23.6$,
or $23.6 \div 8 = m$.



Step 1

Estimate.

Since $24 \div 8 = 3$, start dividing in the ones place.

$$\begin{array}{r} 2 \\ 8 \overline{)23.6} \\ -16 \\ \hline 7 \end{array}$$

Compare: $7 < 8$

Step 2

Divide the tenths.

$$\begin{array}{r} 2.9 \text{ Place the decimal point.} \\ 8 \overline{)23.6} \\ -16 \downarrow \\ \hline 76 \text{ Bring down.} \\ -72 \\ \hline 4 \end{array}$$

Compare: $4 < 8$

Step 3

Divide the hundredths.

$$\begin{array}{r} 2.95 \\ 8 \overline{)23.60} \text{ Annex a zero.} \\ -16 \downarrow \\ \hline 76 \\ -72 \downarrow \\ \hline 40 \text{ Bring down.} \\ -40 \\ \hline 0 \end{array}$$

Bradley hiked 2.95 miles each hour.

$$\begin{array}{l} 24 \div 8 = 3 \\ 23.6 \div 8 = m \\ 16 \div 8 = 2 \end{array}$$

Convince Me! **MP.2 Reasoning** Write a problem that could be represented by the expression $5.68 \div 8$. Then explain how to use compatible numbers to estimate the solution.

Name _____

Guided Practice

Do You Understand?

- When you divide a decimal by a whole number, where do you place the decimal point in the quotient?

Above the decimal in the dividend.

- MP.2 Reasoning** In the example on the previous page, why is a zero annexed in the dividend?

To find the quotient to the hundredths place

Do You Know How?

In 3 and 4, complete each division.

$$3. \begin{array}{r} 7 \square \\ 6 \overline{)43.8} \\ -4 \square \\ \hline 1 \square \\ -18 \\ \hline \end{array}$$

$$4. \begin{array}{r} 9.2 \square \\ 4 \overline{)37.\square} \\ -6 \square \\ \hline 1 \square \\ -12 \square \\ \hline 14 \square \\ -12 \square \\ \hline 20 \square \\ -20 \\ \hline 0 \end{array}$$

$$\begin{array}{l} 40 \div 4 = 10 \\ 37 \div 4 = 9 \\ 36 \div 4 = 9 \end{array}$$

5
0
0
20
20

Complete 12, 14, 20 & 22

Height 2.2 in.
Width 3.75 in.

Independent Practice

Leveled Practice In 5–16, find each quotient.

$$\begin{array}{r} 0. \square \\ 6 \overline{) 4.56} \\ \underline{-6} \\ 6 \\ \underline{-6} \\ 0 \end{array}$$

$$\begin{array}{r} \square \\ 5 \overline{) 32.} \\ \underline{-20} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

$$\begin{array}{r} \square \\ 7 \overline{) 20.3} \\ \underline{-14} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-42} \\ 0 \end{array}$$

$$\begin{array}{r} \square \\ 4 \overline{) 33.8} \\ \underline{-32} \\ 18 \\ \underline{-16} \\ 28 \\ \underline{-28} \\ 0 \end{array}$$

9. $19 \div 5$

$20 \div 5 = 4$
 $16 \div 5 = 3$

10. $7.83 \div 3$

$$\begin{array}{r} \times 3.8 \\ 5 \overline{) 19.0} \\ \underline{-15} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

11. $48.62 \div 2$

$$\begin{array}{r} \times 3.8 \\ 5 \overline{) 19.0} \\ \underline{-15} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

12. $62 \div 8$

$64 \div 8 = 8$
 $56 \div 8 = 7$

13. $35.5 \div 5$

14. $100 \div 8$

$160 \div 8 = 20$
 $80 \div 8 = 10$

15. $1.44 \div 9$

16. $\$7.20 \div 6$

$$\begin{array}{r} \times 12.5 \\ 8 \overline{) 100.0} \\ \underline{-80} \\ 20 \\ \underline{-16} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

$$\begin{array}{r} \times 12.5 \\ 8 \overline{) 100.0} \\ \underline{-80} \\ 20 \\ \underline{-16} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

$$\begin{array}{r} \times 7.75 \\ 8 \overline{) 62.00} \\ \underline{-56} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

$$\begin{array}{r} 7.75 \\ \times 8 \\ \hline 62.00 \end{array}$$

*For another example, see Set C on page 358.

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Math Practices and Problem Solving

17. **MP.4 Model with Math** A 32-ounce tub of yogurt contains 5 servings. Write and solve an equation to find how many ounces of yogurt are in 1 serving.

18. **Number Sense** Write three decimals that each round to 2.7 when rounded to the nearest tenth.

19. **MP.3 Construct Arguments** Which package of cheese has heavier slices? How do you know?



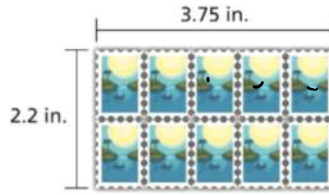
20. **Higher Order Thinking** Harriet calculated $27 \div 4 = 6.75$. How can she find $270 \div 4$ without dividing?

$$\begin{array}{l} 27 \times 10 = 270 \\ 6.75 \times 10 = 67.5 \\ \\ 270 \div 4 = 67.5 \end{array}$$

21. Manny has \$75. He wants to buy a tree for \$24. Will he have enough money left to buy 4 bushes that each cost \$12.25? Show how you found your answer.

$$270 \div 4 = 67.5$$

22. Patrick bought the 10 stamps shown at the right.



Part A

What is the height of a single stamp? Show your work.

$$4 \div 2 = 2$$

$$2.2 \div 2 = 1.1$$

$$2 \div 2 = 1$$

$$2 \overline{) 2.2} \\ \underline{2} \\ 0 \\ \underline{0} \\ 0$$

$$1.1$$

Part B

What is the width of a single stamp? Show your work.

$$4.0 \div 5 = 0.8$$

$$3.76 \div 5$$

$$3.5 \div 5 = 0.7$$

$$1.1$$

$$1.1 \text{ in}$$

0.75 in

$$\begin{array}{r}
 0.75 \\
 5 \overline{) 3.75} \\
 \underline{35} \\
 25 \\
 \underline{25} \\
 0
 \end{array}$$

$$\begin{array}{r}
 3 \\
 0.75 \\
 \times 5 \\
 \hline
 3.75
 \end{array}$$