Learning Target: Divide decimals by two-digit whole numbers.

Success Criteria:
- I can use place value to divide.
- I can place the decimal point in the quotient.
- I can regroup when necessary.
- I can use estimation to divide.

Explore and Grow

Write a division problem you can use to find the width of each rectangle. Then find the width of each rectangle.

11 inches

Area = 253 square inches

11 meters

Area = 25.3 square meters

MP **Precision** Explain how you can use estimation to check your answers.

Think and Grow: Divide Decimals by Two-Digit Numbers

Example Find 79.8 ÷ 14.   Estimate _____

Regroup 7 tens as 70 ones and combine with 9 ones.

Divide the ones.

$$\begin{array}{r} 5 \\ 14\overline{)79.8} \\ -\ 70 \\ \hline 9 \end{array}$$

79 ones ÷ 14
5 ones × 14
79 ones − 70 ones
There are 9 ones left over.

Divide the tenths.

$$\begin{array}{r} 5.7 \\ 14\overline{)79.8} \\ -\ 70 \\ \hline 98 \\ -\ 98 \\ \hline 0 \end{array}$$

Place the decimal point.
Regroup 9 ones as 90 tenths
and combine with 8 tenths.
98 tenths ÷ 14
7 tenths × 14
98 tenths − 98 tenths
There are 0 tenths left over.

So, 79.8 ÷ 14 = _____.   Reasonable? _____ is close to _____. ✓

Example Find 20.54 ÷ 26.

Step 1: Estimate the quotient.

2,000 hundredths ÷ 25 = _____ hundredths

Step 2: Divide as you do with whole numbers.

Step 3: Use the estimate to place the decimal point.

$$\begin{array}{r} \boxed{} \\ 26\overline{)20.54} \\ -\ \boxed{} \\ \hline 234 \\ -\ \boxed{} \\ \hline 0 \end{array}$$

So, 20.54 ÷ 26 = _____.

Show and Grow

Find the quotient. Then check your answer.

1.

$$12\overline{)51.6}$$

2.

$$17\overline{)140.25}$$

3.

$$61\overline{)32.33}$$

Apply and Grow: Practice

Place a decimal point where it belongs in the quotient.

4. $251.75 \div 19 = 1\ 3\ 2\ 5$

5. $88.04 \div 62 = 1\ 4\ 2$

6. $3.22 \div 23 = 0\ 1\ 4$

Find the quotient. Then check your answer.

7.
$54\overline{)97.2}$

8.
$91\overline{)200.2}$

9.
$2\overline{)56.2}$

10. $6.08 \div 16 = $ _____

11. $7.45 \div 5 = $ _____

12. $147.63 \div 37 = $ _____

Find the value of y.

13. $y \div 44 = 1.82$

14. $106.6 \div 82 = y$

15. $y \div 13 = 2.6$

16. **MP Logic** Newton and Descartes find $44.82 \div 18$. Only one of them is correct. Without solving, who is correct? Explain.

$44.82 \div 18 = 24.9$

$44.82 \div 18 = 2.49$

17. **DIG DEEPER!** Find a decimal that you can divide by a two-digit whole number to get the quotient shown. Fill in the boxes with your dividend and divisor.

$$\overset{0.6}{\Box\overline{)\Box}}$$

Think and Grow: Modeling Real Life

Example You practice paddleboarding for 3 weeks. You paddle the same amount each day for 5 days each week. You paddle 22.5 miles altogether. How many miles do you paddle each day?

To find the total number of days you paddle in 3 weeks, multiply the days you paddle each week by 3.

$5 \times 3 = 15$ So, you paddleboard _____ days in 3 weeks.

To find the number of miles you paddle each day, divide the total number of miles by the number of days you paddle in 3 weeks.

$15\overline{)22.5}$ 22 ones ÷ 15

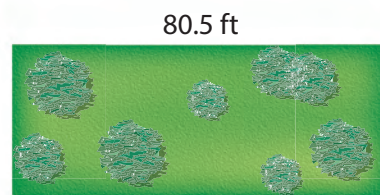75   75 tenths ÷ 15

You paddle _____ miles each day.

Show and Grow

18. Descartes borrows $6,314.76 for an all-terrain vehicle. He pays back the money in equal amounts each month for 3 years. What is his monthly payment?

19. A blue car travels 297.6 miles using 12 gallons of gasoline and a red car travels 358.8 miles using 13 gallons of gasoline. Which car travels farther using 1 gallon of gasoline? How much farther?

20. **DIG DEEPER!** The rectangular dog park has an area of 2,616.25 square feet. How much fencing does an employee need to enclose the dog park?

80.5 ft

Learning Target: Divide decimals by two-digit whole numbers.

Example Find $8.52 \div 12$.

Step 1: Estimate the quotient.

850 hundredths $\div$ 10 = __85__ hundredths

Step 2: Divide as you do with whole numbers.

Step 3: Use the estimate to place the decimal point.

$$12\overline{)8.52}$$
$$-\;84$$
$$12$$
$$-\;12$$
$$0$$

So, $8.52 \div 12 =$ __0.71__ .

Place a decimal point where it belongs in the quotient.

1. $127.2 \div 24 = 5\,3$

2. $48.64 \div 32 = 1\,5\,2$

3. $514.18 \div 47 = 1\,0\,9\,4$

Find the quotient. Then check your answer.

4.

$$72\overline{)93.6}$$

5.

$$7\overline{)3.92}$$

6.

$$29\overline{)1.74}$$

7. $24.3 \div 9 =$ _____

8. $244.9 \div 31 =$ _____

9. $55.62 \div 27 =$ _____

Find the value of *y*.

10. $y \div 16 = 0.23$

11. $44.1 \div 21 = y$

12. $y \div 28 = 11.04$

13. **YOU BE THE TEACHER** Your friend finds $21.44 \div 16$. Is your friend correct? Explain.
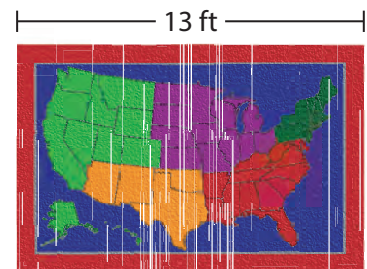
$$
\begin{array}{r}
13.4 \\
16{\overline{\smash{\big)}\,21.44}} \\
-16 \\
\hline
54 \\
-48 \\
\hline
64 \\
-64 \\
\hline
0
\end{array}
$$

14. **DIG DEEPER!** A banker divides the amount shown among 12 people. How can she regroup the money? How much money does each person get?

15. **Modeling Real Life** You have hip-hop dance practice for 5 weeks. You attend practice 5 days each week. Each practice is the same length of time. You practice for 37.5 hours altogether. How many hours do you practice each day?

16. **DIG DEEPER!** Your rectangular classroom rug has an area of 110.5 square feet. What is the perimeter of the rug?

|— 13 ft —|

Review & Refresh

Find the product.

17. $0.52 \times 0.4 = $ _____

18. $0.7 \times 21.3 = $ _____

19. $1.52 \times 8.6 = $ _____