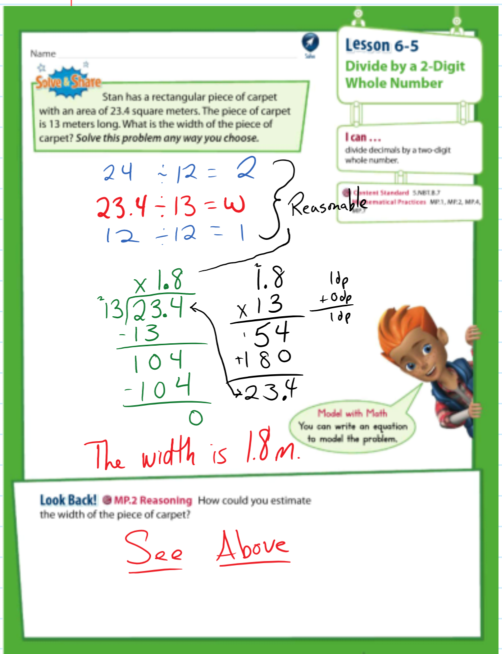
Notes 6-5

Tuesday, December 3, 2019 8:30 AM

Divide by a 2-Digit Whole Number:



Name

Solve & Share

Stan has a rectangular piece of carpet with an area of 23.4 square meters. The piece of carpet is 13 meters long. What is the width of the piece of carpet? *Solve this problem any way you choose.*

Lesson 6-5
Divide by a 2-Digit Whole Number

I can ... divide decimals by a two-digit whole number.

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

$24 \div 12 = 2$
$23.4 \div 13 = w$ } Reasonable
$12 \div 12 = 1$

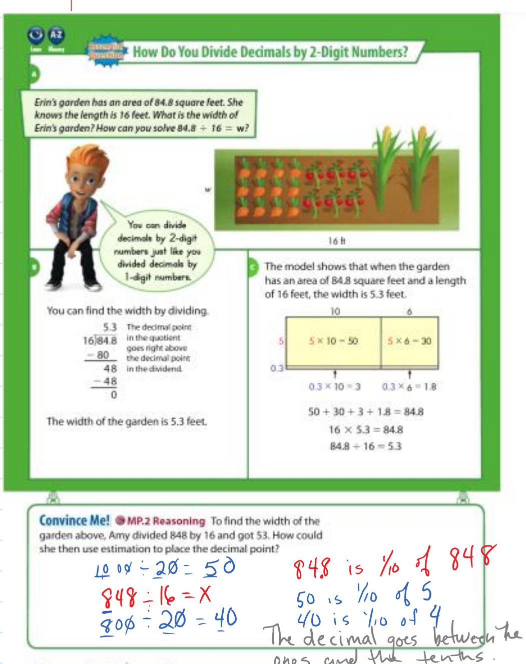
$13\overline{)23.4}$ = 1.8
−13
104
−104
0

1.8 × 13 = 54 + 180 = 23.4 (1dp + 0dp = 1dp)

The width is 1.8 m.

Look Back! MP.2 Reasoning How could you estimate the width of the piece of carpet?

See Above



How Do You Divide Decimals by 2-Digit Numbers?

Erin's garden has an area of 84.8 square feet. She knows the length is 16 feet. What is the width of Erin's garden? How can you solve 84.8 ÷ 16 = w?

You can find the width by dividing.

$16\overline{)84.8}$ = 5.3
− 80
48
− 48
0

The decimal point in the quotient goes right above the decimal point in the dividend.

The width of the garden is 5.3 feet.

The model shows that when the garden has an area of 84.8 square feet and a length of 16 feet, the width is 5.3 feet.

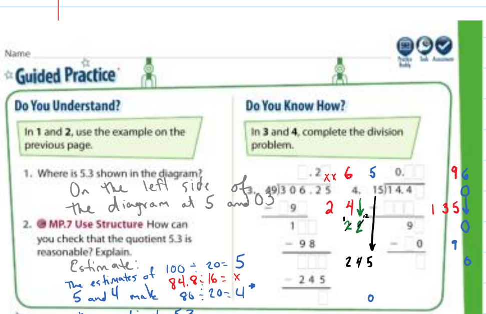
5 × 10 = 50, 5 × 6 = 30
0.3 × 10 = 3, 0.3 × 6 = 1.8

50 + 30 + 3 + 1.8 = 84.8
16 × 5.3 = 84.8
84.8 ÷ 16 = 5.3

Convince Me! MP.2 Reasoning To find the width of the garden above, Amy divided 848 by 16 and got 53. How could she then use estimation to place the decimal point?

$1000 \div 20 = 50$
$848 \div 16 = x$
$800 \div 20 = 40$

848 is 1/10 of 848
50 is 1/10 of 5
40 is 1/10 of 4
The decimal goes between the ones and the tenths.



Name

Guided Practice

Do You Understand?

In 1 and 2, use the example on the previous page.

1. Where is 5.3 shown in the diagram?
On the left side of the diagram of 5 and 0.3

2. MP.7 Use Structure How can you check that the quotient 5.3 is reasonable? Explain.
Estimate: $100 \div 20 = 5$; $84.8 \div 16 = x$; $80 \div 20 = 4$. The estimates of 5 and 4 make the quotient 5.3

Do You Know How?

In 3 and 4, complete the division problem.

3. $49\overline{)306.25}$ = 6.25
− 294
12 2
− 98
2 45
− 2 45
0

4. $15\overline{)14.4}$ = 0.96
− 13 5
90
− 90
0

③ $350 \div 50 = 7$
$306.25 \div 49 = x$
$300 \div 50 = 6$

49 × 6 = 294
49 × 5 = 245

6.25
× 49
5625
+ 25000
306.25

2dp + 0dp = 2dp

you check that the quotient 5.3 is reasonable? Explain.

Estimate: 100 ÷ 20 = 5
The estimates of 84.8 ÷ 16 = x
5 and 4 make 80 ÷ 20 = 4
the quotient 5.3 reasonable.

− 9 8
2 4 5
− 2 4 5
0

$49 \times 6 = 294$

$49 \times 5 = 245$

+ 2 5 0 0 0
3 0 6 . 2 5

Complete 5, 15, 18

(4) 16.0 ÷ 20 = 0.8
14.4 ÷ 15 = x
14.0 ÷ 20 = 0.7

0.96
× 15
480
+ 960
14.40

2 dp
+ 0 dp
2 dp

Independent Practice

Leveled Practice In 5–12, find each quotient.

5. 17)78.2
6. 40)232.0
7. 53)304.75
8. 18)15.3

9. 27)91.8
10. 15)3.9
11. 88)396
12. 50)247.5

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

(5) 80 ÷ 20 = 4
78.2 ÷ 17 = x
60 ÷ 20 = 3

× 4.6
17)78.2
− 68
10 2
− 10 2
0

4.6
× 17
322
+ 460
78.2

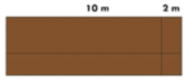
1 dp
+ 0 dp
1 dp

Math Practices and Problem Solving

13. Sharon pays $98.75 for twenty-five 14-ounce boxes of Yummy Flakes cereal. How much does one box of cereal cost?

14. MP.2 Reasoning Javier bought a new TV for $479.76. He will make equal payments each month for 2 years. How can Javier use compatible numbers to estimate each payment?

15. Higher Order Thinking The area of the rectangular flowerbed shown is 20.4 square meters. How many meters of edging are needed to go around the flowerbed? Explain.



16. MP.1 Make Sense and Persevere Ms. Wang is shopping for a new refrigerator. Brand A costs $569 and uses 635 kilowatt-hours per year. Brand B costs $647 and uses 582 kilowatt-hours per year. If electricity costs $0.18 per kilowatt-hour, how much would Ms. Wang save on electricity per year by buying Brand B?

17. Pat is driving from Seattle to Los Angeles. The distance is 1,135 miles. For the first 250 miles, it costs Pat $0.29 a mile to drive. After that, her driving cost is $0.16 a mile. What is Pat's total driving cost?

Common Core Assessment

18. Which is equal to 27.3 divided by 13?
- Ⓐ 0.21
- Ⓑ 2.01
- Ⓒ 2.1
- Ⓓ 21

19. Which is equal to 73.5 divided by 21?
- Ⓐ 0.35
- Ⓑ 3.05
- Ⓒ 3.5
- Ⓓ 30.5

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15. A = l × w
20.4 = 12 × w
20.4 ÷ 12 = w

24 ÷ 12 = 2
20.4 ÷ 12 = w
12 ÷ 12 = 1

× 1.7
12)20.4
− 12
8 4
− 8 4
0

1.7
× 12
34
+ 170
20.4

1 dp
+ 0 dp
1 dp

Around = Perimeter

12 + 12 + 1.7 + 1.7 = 27.4

27.4 m around

(18) 36 ÷ 12 = 3
27.3 ÷ 13 = x
24 ÷ 12 = 2

Not A or D

× 2.1
13)27.3
− 26
1 3
− 1 3
0

2.1
× 13
63
+ 210
27.3

1 dp
+ 0 dp
1 dp

(C)