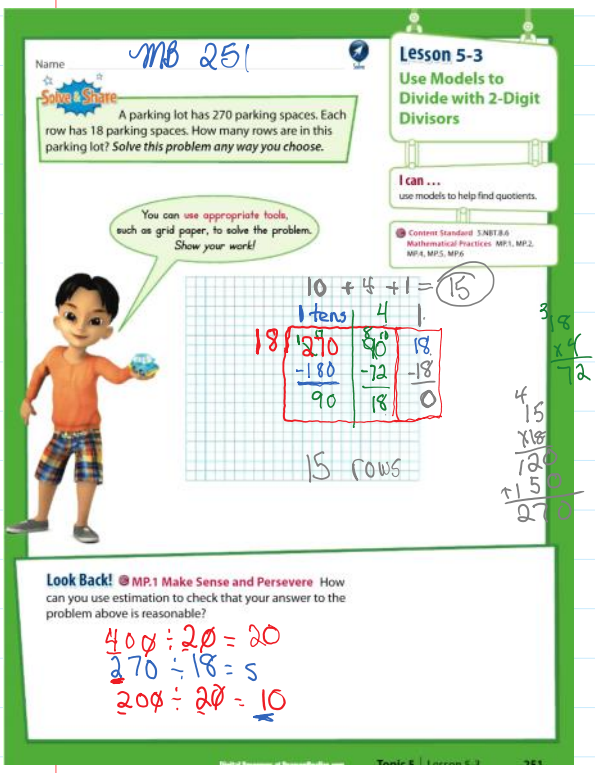
Lesson 5-3

Thursday, October 24, 2019 1:18 PM



Name MB 251

Lesson 5-3
Use Models to Divide with 2-Digit Divisors

Solve & Share
A parking lot has 270 parking spaces. Each row has 18 parking spaces. How many rows are in this parking lot? *Solve this problem any way you choose.*

You can use appropriate tools, such as grid paper, to solve the problem. Show your work!

I can ...
use models to help find quotients.

Content Standard 3.NBT.B.6 Mathematical Practices MP.1, MP.2, MP.4, MP.5, MP.6

10 + 4 + 1 = 15

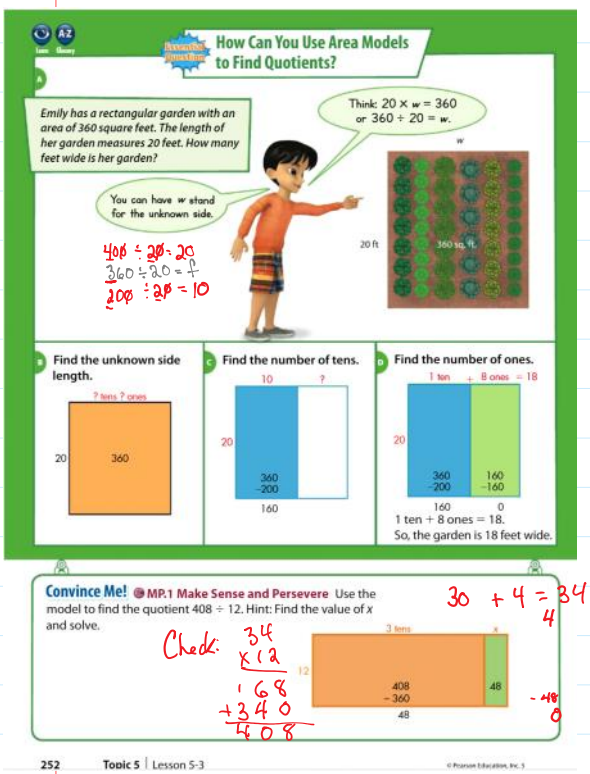
1 tens | 4 | 1

18 | 270 | 90 | 18
-180 | -72 | -18
90 | 18 | 0

15 rows

Look Back! MP.1 Make Sense and Persevere How can you use estimation to check that your answer to the problem above is reasonable?

400 ÷ 20 = 20
270 ÷ 18 = 5
200 ÷ 20 = 10



How Can You Use Area Models to Find Quotients?

Emily has a rectangular garden with an area of 360 square feet. The length of her garden measures 20 feet. How many feet wide is her garden?

Think: 20 × w = 360 or 360 ÷ 20 = w.

You can have w stand for the unknown side.

20 ft, w, 360 sq. ft

400 ÷ 20 = 20
360 ÷ 20 = 18
200 ÷ 20 = 10

A Find the unknown side length.

? tens ? ones | 20 | 360

B Find the number of tens.

10 | ? | 20 | 360 | −200 | 160

C Find the number of ones.

1 ten + 8 ones = 18 | 20 | 360 | −200 | 160 | 160 | −160 | 0

1 ten + 8 ones = 18.
So, the garden is 18 feet wide.

Convince Me! MP.1 Make Sense and Persevere Use the model to find the quotient 408 ÷ 12. Hint: Find the value of *x* and solve.

30 + 4 = 34

Check: 34 × 12 = 168 + 340 = 408

3 tens | x | 12 | 408 | −360 | 48 | 48 | −48 | 0

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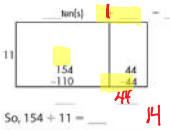
Name

Guided Practice

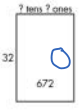
Do You Understand?

1. Write the missing numbers to find 154 ÷ 11.



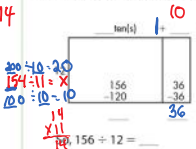
So, 154 ÷ 11 = ___

2. **MP.1 Make Sense and Persevere** Write a multiplication equation and a division equation that represent the model shown below. Then solve.



Do You Know How?

3. Use the model to find 156 ÷ 12.



So, 156 ÷ 12 = ___

In **4** and **5**, use grid paper or draw a picture to find each quotient.

4. 682 ÷ 22

5. 143 ÷ 11

4. 80Ø ÷ 2Ø = 40
682 ÷ 22 = x
60Ø ÷ 2Ø = 30

3 tens + 1 = 31

22	682	22
	-660	-22
	22	0

22 × 30 = 660

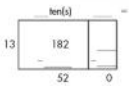
31 × 22 = 62 + 620 = 682

Complete #7, 14, 18

Independent Practice

Leveled Practice In **6–12**, use grid paper or draw a picture to find each quotient.

6. Use the model to find 182 ÷ 13.



So, 182 ÷ 13 = ___.

7. 342 ÷ 38

8. 720 ÷ 16

9. 608 ÷ 19

10. 752 ÷ 47

11. 375 ÷ 25

12. 576 ÷ 24

*For another example, see Set C on page 289.

(7) 36Ø ÷ 4Ø = 9
342 ÷ 38 = x
32Ø ÷ 4Ø = 8

8 + 1 = 9

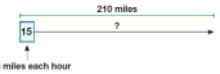
38	342	38
	-304	-38
	38	0

6 × 38 = 304

7 × 38 = 342

Math Practices and Problem Solving

13. **MP.4 Model with Math** Angelo is training for a long-distance bicycle ride. He travels 15 miles each hour. How many hours will it take him to ride 210 miles?



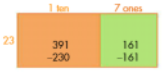
14. **Higher Order Thinking** A rectangular doormat is 21 inches long and has an area of 714 square inches. Find its width. Will the doormat fit in an entryway that is 36 inches wide? Show your work.

34 inches. The width is 34 in. This will fit in the entryway because 34 in < 36 in.

15. **MP.6 Be Precise** Use the map. How much longer is the distance from the library to the park to the train station than the distance from the library straight to the train station?

16. **Algebra** If you walk from the train station to the library, then to the park, and then back to the train station, how many miles would you walk in all? Write an equation to model your work.

17. **MP.1 Make Sense and Persevere** Explain how you can use the picture to show that 391 ÷ 23 = 17.



Common Core Assessment

18. There are 16 rows of chairs in the auditorium. Each row has the same number of chairs. There are 512 chairs in all. How many chairs are in each row?

Ⓐ 22 chairs
Ⓑ 30 chairs
Ⓒ 32 chairs
Ⓓ 33 chairs

19. A patio has an area of 286 square feet. If the length of the patio is 22 feet, what is the width?

Ⓐ 10 feet
Ⓑ 13 feet
Ⓒ 14 feet
Ⓓ 144 feet

80Ø ÷ 20 = 40
714 ÷ 21 = w
60Ø ÷ 20 = 30

3 tens + 4 = 34

21	714	84
	-630	-84
	84	0

21 × 30 = 630

34 × 21 = 34 + 680 = 714

60Ø ÷ 2Ø = 30

512 ÷ 16 = r

400 ÷ 20 = 20