LESSON MAKER PRO

Tile the Space

Use small squares to find the area of rectangles.

GRADE 5 · 5.NF.B.12.d

5.NF.B.12.d "Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths to show that the area is the same as would be found by multiplying the side lengths."

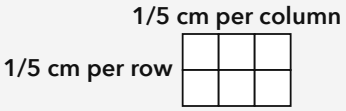
NAME _____ DATE _____

COUNT THE SQUARES

Choose a unit fraction that fits evenly along both sides of a rectangle. Imagine covering the rectangle with squares whose sides have that length. Multiply the number of squares by the area of one square to find the rectangle's area.

WORKED EXAMPLE

What is the area of this tiled rectangle?

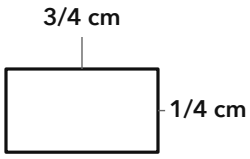


1. Two rows make one side 2/5 cm long.
2. Three columns make the other side 3/5 cm long.
3. Count 2 x 3 = 6 squares. Each square has an area of 1/25 square centimeter.
4. The area is 6 x 1/25 = 6/25 square centimeter. Multiplying the side lengths also gives 2/5 x 3/5 = 6/25.

Answer: 6/25 square centimeter

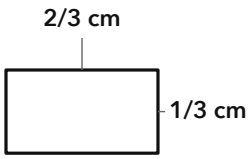
PRACTICE 6 problems

1 Imagine covering this rectangle with squares that have 1/4-cm sides. What is its area?



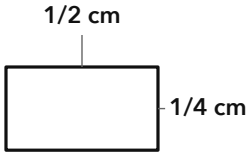
ANSWER _____

2 How many squares with 1/3-cm sides cover this rectangle? What is its area?



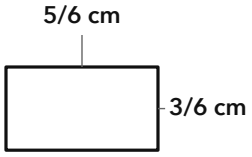
ANSWER _____

3 Use squares with 1/4-cm sides to find the area of this rectangle.



ANSWER _____

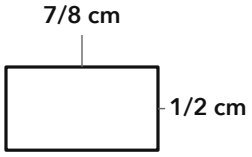
4 How many squares with 1/6-cm sides cover this rectangle? What is its area?



ANSWER _____

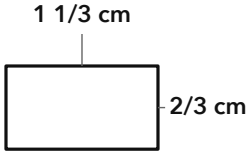
_____

5 Imagine covering this rectangle with squares that have 1/8-cm sides. What is its area?



ANSWER _____

6 Use squares with 1/3-cm sides to find the area of this rectangle.



ANSWER _____

APPLY IT Show your work

1 A student decorates one side of a rectangular bookmark. It is 5/6 foot long and 1/6 foot wide. How many squares with 1/6-foot sides cover it, and what is its area?

WORK SPACE

ANSWER _____

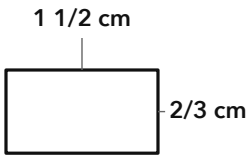
2 A class makes a rectangular sticker sheet for a school fair. It is 3/4 foot long and 1/2 foot wide. What is its area? Show how you can find it using squares with 1/4-foot sides.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Squares with 1/6-cm sides cover this rectangle. How many squares are needed? Explain how the squares show the rectangle's area.



WORK SPACE AND ANSWER

ANSWER KEY

Tile the Space

GRADE 5 · 5.NF.B.12.d

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Imagine covering this rectangle with squares that have 1/4-cm sides. What is its area?	**3/16 square centimeter**
2	How many squares with 1/3-cm sides cover this rectangle? What is its area?	**2 squares; 2/9 square centimeter**
3	Use squares with 1/4-cm sides to find the area of this rectangle.	**1/8 square centimeter**
4	How many squares with 1/6-cm sides cover this rectangle? What is its area?	**15 squares; 5/12 square centimeter**
5	Imagine covering this rectangle with squares that have 1/8-cm sides. What is its area?	**7/16 square centimeter**
6	Use squares with 1/3-cm sides to find the area of this rectangle.	**8/9 square centimeter**

PART 2 · APPLY IT

1. **5 squares; 5/36 square foot** Five squares fit along the length and one fits along the width. Each square has an area of 1/36 square foot, so the total area is 5/36 square foot.
2. **3/8 square foot** Three squares fit along the length and two fit along the width, for 6 squares. Each has an area of 1/16 square foot, so the sheet's area is 6/16 = 3/8 square foot.

CHALLENGE

36 squares; 9 fit along one side and 4 along the other. Each square has an area of 1/36 square centimeter, so the rectangle's area is 36/36 = 1 square centimeter.

Accept equivalent fractions and correctly labeled square units. For count-and-area questions, require both answers.