Objective

Find the area of rectangles.

Common Core State Standards

- **3.MD.5b** Understand that a plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.
- **3.MD.6** Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

Measurement and Data

Area of Rectangles

The concept of area ties together several strands of mathematics. Students are measuring the amount of space a plane figure takes up, but in order to do so, they need to draw on their knowledge in other areas of math. Understanding attributes of shapes and having a sense of numbers are necessary to understand the idea of area. Moreover, using arrays to model area leads to the development of multiplication skills.

Try It! *Perform the Try It! activity on the next page.*

Talk About It

Discuss the Try It! activity.

- **Ask:** *If I turned a rectangle, would it take the same number of Color Tiles to fill it?*
- **Say:** *When we find area, we see how many tiles it takes to fill something up.* **Ask:** *How is filling rectangles with tiles the same or different from filling squares?*
- **Ask:** *Is there a faster way to count the tiles in a rectangle?* Review skip-counting and repeated addition.

Solve It

With students, reread the problem. Have students draw a picture of the hallway, showing how many rug tiles are needed to cover the 6- by 4-unit floor.

More Ideas

For other ways to teach about finding the area of rectangles—

- Invite students to use Color Tiles to find the area of classroom objects such as book covers.
- Have students use Snap Cubes® to make several trains of the same length. Direct them to arrange the trains in even rows. Then have students tell how many cubes are in each row and how many rows there are. Have students draw a rectangle around the perimeter and then tell how many cubes are within it.

Formative Assessment

Have students try the following problem.

How many tiles make up the area of this rectangle?

A. 4   **B.** 5   **C.** 6   **D.** 9

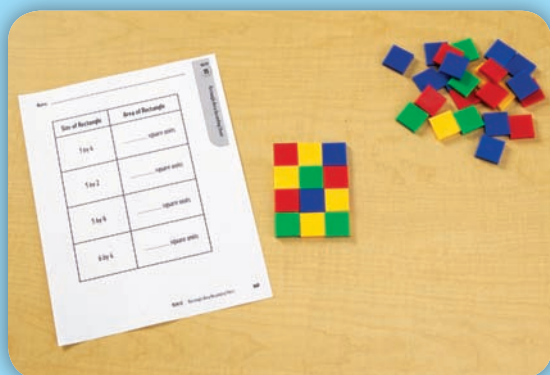## Try It! 30 minutes | Pairs

Here is a problem about finding the area of rectangles.

On snowy days, the hallway floor at Pleasant Hill Elementary School gets wet and slippery. The principal wants to put square rug tiles on the floor so the students won't fall. The hallway measures 6 units long by 4 units wide. Each rug tile measures 1 unit on each side. How many rug tiles will fill this area?

Introduce the problem. Then have students do the activity to solve the problem. Distribute a Rectangle Area Recording Sheet (BLM 7) and Color Tiles to students.
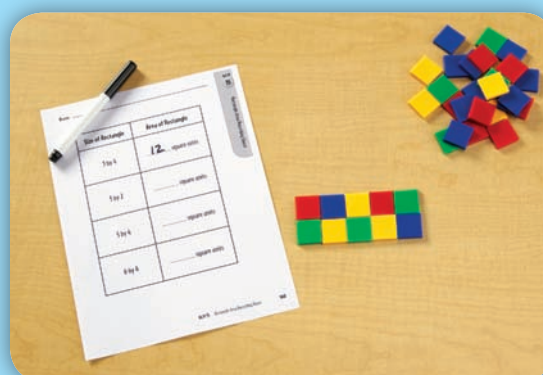
Materials
- Color Tiles (30 per pair)
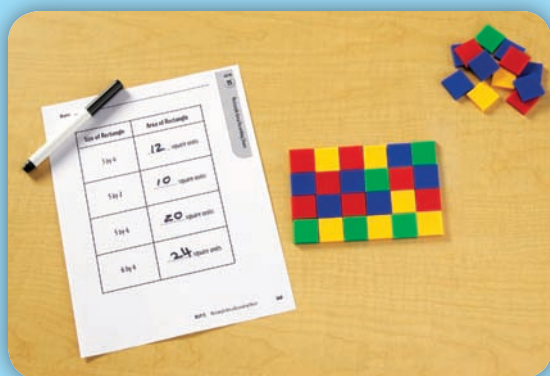- Rectangle Area Recording Sheet (BLM 7; 1 per pair)

1. Say: *Let's find out how many squares we need to fill an area that has sides of different lengths.* Draw a rectangle on the board and show what we mean by "long" (from left to right) and "wide" (from top to bottom). **Say:** *Use tiles to make a rectangle that is 3 units long by 4 units wide. Write the number of squares on your recording sheet.*

2. Have one partner use tiles to model a rectangle that is 5 units long by 2 units wide. Ask the other partner to count the tiles and write the number of squares on the recording sheet.
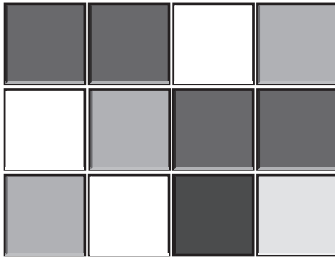
⚠ Look Out!

Watch for students who do not count tiles in order. Emphasize that they should count all the tiles across each row before they start counting tiles down the sides or in other rows.

3. Have partners take turns describing the rectangles. One partner tells the length and width while the other builds the rectangle and records the area on the recording sheet.

Use Color Tiles. Build each rectangle. What is the area of the rectangle?

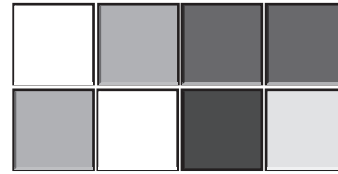(Check students' work.)

1.

_____12_____ square inches

2.

_____8_____ square inches

Use Color Tiles. Build each rectangle. Draw the rectangle. Find the area.

(Check students' work.)
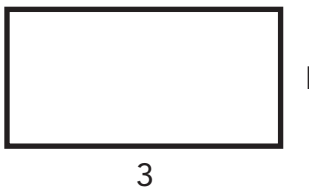
3.   2 inches × 3 inches

_____6_____ square inches

4.   4 inches × 5 inches

_____20_____ square inches

Find each area.

5.

1

3

_____3_____ units

6.

4

6

_____24_____ units

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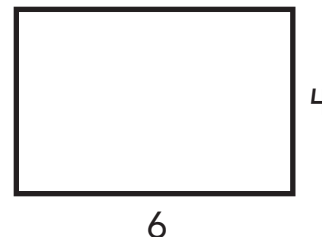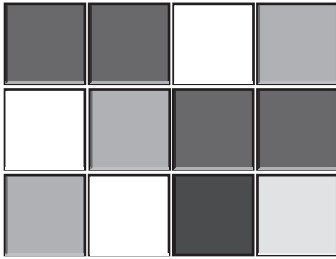
Challenge!   How do Color Tiles help you find the area of a rectangle? Draw a picture.

Challenge: (Sample) Area is measured in square units. Once the shape is built, count the tiles.

_____

_____

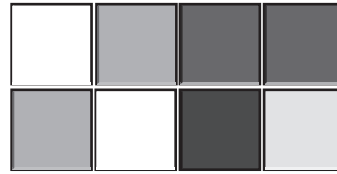_____

_____

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Name _____

Use Color Tiles. Build each rectangle. What is the area of the rectangle?

1.

2.

_____ square inches   _____ square inches

Use Color Tiles. Build each rectangle. Draw the rectangle. Find the area.

3.   2 inches × 3 inches   **4.**   4 inches × 5 inches

_____ square inches   _____ square inches

Find each area.

5.

1

3

_____ units

6.

4

6

_____ units

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Name _____

Challenge!   How do Color Tiles help you find the area of a rectangle? Draw a picture.

_____

_____

_____

_____

_____

_____

_____

_____

Size of Rectangle	Area of Rectangle
3 by 4	_____ square units
5 by 2	_____ square units
5 by 4	_____ square units
6 by 4	_____ square units