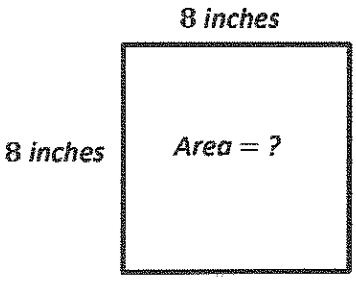
G3-M4-Lesson 12

1. Molly draws a square with sides that are 8 inches long. What is the area of the square?



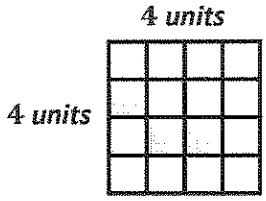
I know that a square has 4 equal sides, so I can label each side length on my area model as 8 inches.

$8 \times 8 = 64$

I can multiply the side lengths to find the area.

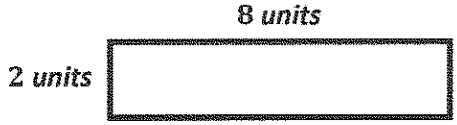
The area of the square is 64 square inches.

2. Each ▫ is 1 square unit. Nathan uses the same square units to draw a 2×8 rectangle and says that it has the same area as the rectangle below. Is he correct? Explain why or why not.



Area = 4 *units* × 4 *units*
= 16 *square units*

I can count the units to label the side lengths and then multiply to find the area. Or, I can count all of the units to find the area.



Area = 2 *units* × 8 *units*
= 16 *square units*

I can draw an area model with side lengths of 2 units and 8 units to represent Nathan's rectangle. I can multiply the side lengths to find the area.

Yes, Nathan is correct. Both rectangles have the same area, 16 square units. The rectangles have different side lengths, but when you multiply the side lengths, you get the same area.

$$4 \times 4 = 2 \times 8 = 16$$

3. A rectangular notepad has a total area of 24 square inches. Draw and label two possible notepads with different side lengths, each having an area of 24 square inches.

1×24
2×12
3×8
4×6

I can list multiplication facts that equal 24 to help me think of possible side lengths.

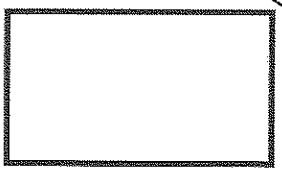
I can choose 2 facts to use as side lengths for my rectangles. I know the unit is inches because the area is in square inches.

8 *inches*

3 *inches*

6 *inches*

4 *inches*



Area = 3 *inches* × 8 *inches*
= 24 *square inches*

Area = 4 *inches* × 6 *inches*
= 24 *square inches*

I can check my work by multiplying the side lengths to be sure the area of each rectangle is 24 square inches.

4. Sophia makes the pattern below. Find and explain her pattern. Then, draw the fifth figure in her pattern.

I can see that the first figure has 1 row of three, the second figure has 2 rows of three, and the third figure has 3 rows of three. Sophia adds 1 row of three to each new figure.

I'll follow the pattern by drawing 4 rows of three for the fourth figure and 5 rows of three for the fifth figure.

4^{th} *figure*

5^{th} *figure*

Sophia adds 1 row of three to each figure. The fifth figure has 5 rows of three.