

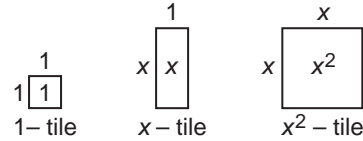
Modeling Activity

(Use with Lesson 9-1)

Multiplying Monomials

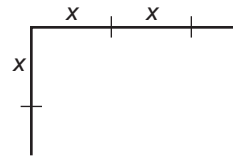
Materials: algebra tiles , product mat 

You can use algebra tiles like the ones shown at the right to make rectangles. Notice that the x^2 -tile is a square that is x units long and x units wide.



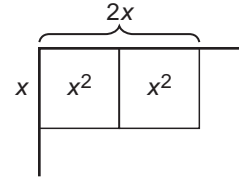
Activity 1: Use algebra tiles to find the product $x(2x)$.

- ▶ The rectangle has a width of x units and a length of $2x$ units. Use your area tiles to mark off the dimensions on a product mat.



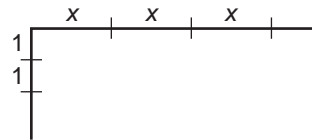
- ▶ Using the marks as a guide, make the rectangle with algebra tiles.

- ▶ The rectangle has 2 x^2 -tiles. The area of the rectangle is $2x^2$. Therefore, $x(2x) = 2x^2$.



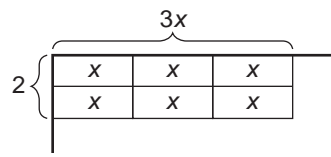
Activity 2: Use algebra tiles to find the product $2(3x)$.

- ▶ The rectangle has a width of 2 units and a length of $3x$ units. Mark off the dimensions on a product mat.



- ▶ Using the marks as a guide, make the rectangle with algebra tiles.

- ▶ The rectangle has 6 x -tiles. The area of the rectangle is $6x$. Therefore, $2(3x) = 6x$.



MODEL

Use algebra tiles to find each product.

- $3(2x)$ **$6x$** 2. $2x(4)$ **$8x$** 3. $2x(2x)$ **$4x^2$** 4. $2x(3x)$ **$6x^2$**

WRITE

5. Explain why the sum of $3x$ and $6x$ is $9x$, but the product of $3x$ and $6x$ is $18x^2$. Write your solution in paragraph form, complete with drawings.

When you add $3x$ and $6x$, you put 3 x -tiles and 6 x -tiles together for a total of 9 x -tiles. When you multiply $3x$ and $6x$, you find the area of a rectangle $3x$ units wide and $6x$ units long. The area is $18x^2$ square units.