

Math Lab: Exploring Factoring with Algebra Tiles

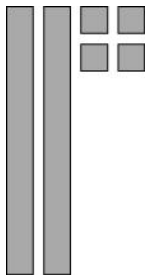
Materials

Use the algebra tiles (e.g., borrowed set, template, or interactive) that you have been using for Lessons 1 and 2.

Procedure

Follow these steps for each polynomial given. Do your work in the analysis section.

Step 1: Select the algebra tiles that correspond to each term. For example, for the polynomial $2x + 4$, you would select two x -tiles and four 1 -tiles.



Step 2: Arrange the tiles into the shape of a rectangle. Use all of the tiles. Remember that a tile can only be placed if its sides are adjacent to other sides of equal length.

Step 3: Sketch (or use a screen capture tool, if using interactive tiles) to show what your rectangle looks like. Save them in your course folder (binder) if doing them by hand or save them in your files on your computer by taking screen shots if using interactive tiles.

Step 4: Record the length and width of each rectangle.

Step 5: See if you can use the same algebra tiles to create a rectangle of different dimensions. If so, repeat steps 2 to 4 for the new rectangle.

Analysis

1. Complete a sketch for each of the following. Provide the length and width.
 - a. $2x + 4$ (first one is done for you)



length: $x + 2$

width: 2

b. $3x^2 + 3x$

length:
width:

c. $x^2 + 6x + 8$

length:
width:

d. $x^2 - 5x + 6$

length:
width:

2. How do the dimensions of the rectangle relate to the area of the rectangle?

3. How does the procedure in this Math Lab contrast with the procedure in the Discover activity in Lesson 1?

4. Answer the following for each of the trinomials in parts 1.c. and 1.d.
- a. How is the first term of the trinomial related to the first terms in the length and width?
 - b. How is the coefficient of the middle term in the trinomial related to the second terms of the length and width?
 - c. How is the last term of the trinomial related to the second terms of the length and width?