

Multiplying Polynomials Using Algebra Tiles

Reporting Category Expressions and Operations

Topic Multiplying polynomials

Primary SOL A.2b The student will perform operations on polynomials, including adding, subtracting, multiplying, and dividing polynomials.

Materials

- Multiplying Polynomials Using Algebra Tiles activity sheet (attached)
- Algebra tiles

Vocabulary

monomial, binomial, trinomial, polynomial, term, degree, base, exponent, coefficient (A.2)

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Demonstrate multiplying polynomials using algebra tiles, as shown below:

$$(x + 1)(x + 6) = x^2 + 7x + 6$$



2. Distribute algebra tiles and copies of the Multiplying Polynomials Using Algebra Tiles activity sheet. Instruct students to model each expression with the tiles, draw the model, simplify the expression, and write the simplified answer.

Assessment

- **Questions**
 - Draw a model of the multiplication of two binomials. Simplify your expression.
 - Explain why $(2x)(3x) = 6x^2$ and not $6x$.
- **Journal/Writing Prompts**
 - One of your classmates was absent when we discussed how to multiply polynomials using algebra tiles. Write a paragraph explaining this procedure.
 - Describe how to multiply polynomials without using algebra tiles.

Strategies for Differentiation

- Encourage the use of algebra tiles, drawings, and mathematical notation simultaneously to reinforce the concepts in this lesson.
- Have students use colored pencils for drawing algebra tile models.

Multiplying Polynomials Using Algebra Tiles

Name _____ Date _____

Use algebra tiles to model each multiplication problem and find the product. Draw your model in the frame. Write your simplified answer in the space provided.

1. $x(x + 1)$



Answer: _____

2. $2x(x - 2)$



Answer: _____

3. $x(2x + 2)$



Answer: _____

4. $-x(x - 3)$



Answer: _____

5. $(2x + 1)(x + 1)$



Answer: _____

6. $(-3x + 2)(-x - 2)$



Answer: _____

7. $(2x + 1)(x - 4)$



Answer: _____

8. $(-2x - 2)(2x - 1)$



Answer: _____