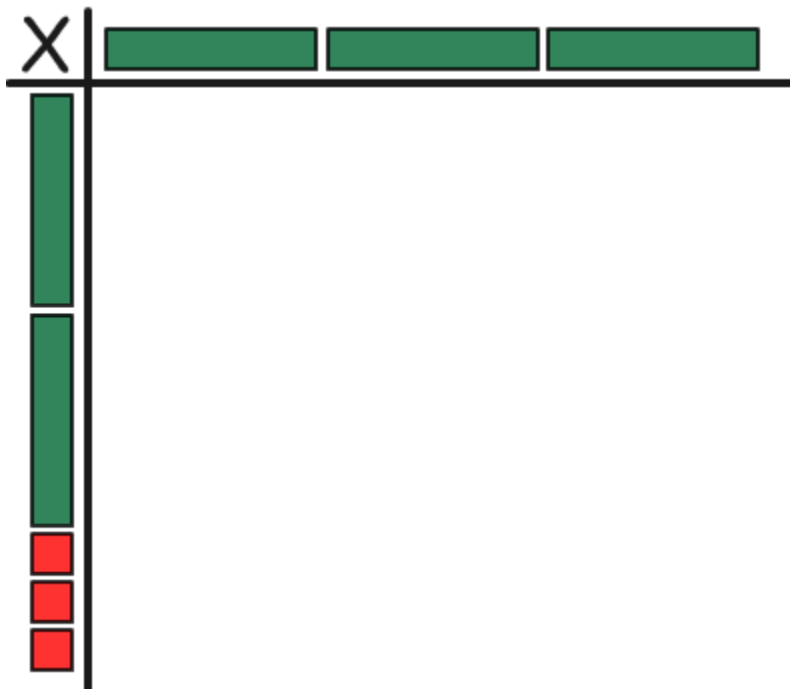# Multiplying Polynomials by Monomials

1. In your own words, describe the method for using alge-tiles to multiply to a polynomial by a monomial.

2. Use the following alge-tile representation for the questions below.

   a. Identify the expression of multiplication.

   b. Draw in the rectangle that "completes the area" on the diagram.
   c. Draw in the alge-tiles that complete the area on the diagram.
   d. Algebraically write your product.

3. Write the multiplication expression and the product for the following:
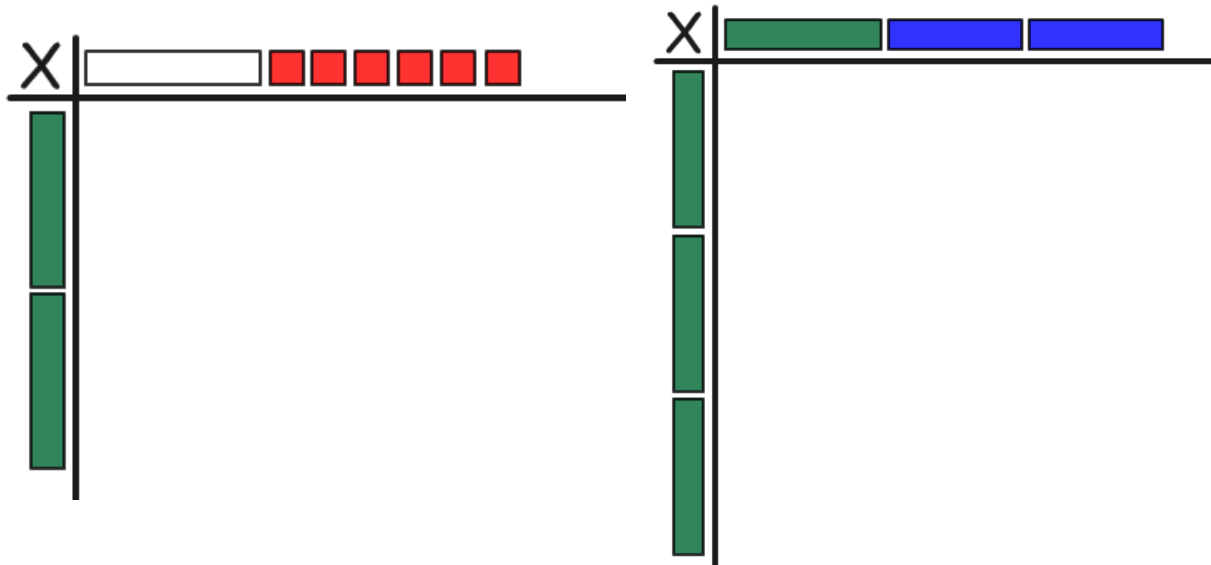
4. Using alge-tiles (either online/virtual alge-tiles or physical alge-tiles), model each of the following, including the product.
   a. (3x + 1)(4)
   b. (2y - 3)(-x)
   c. (5x)(3x + 8)
   d. (-2x - 4)(-2x)

5. Find the product.
   a. (2c - 8)(8b)   c. $(6xy - 8y^2)(6x)$

   b. (3v + 4t)(-5v)   d. $(x^2 + 4b)(x)$

e. $(x - xy^2)(x^2)$

h. $(x^2y + xy - 7x - 3y + 4)(4xy)$

f. $(m^3 + 5m + 8)(m^4)$

i. $(abc + a + b + c)(abc)$

g. $(3y^3 + 3y^2 + 3y + 3)(-2y)$

j. $(-3x^2y^3z^4 + 3)(2x^2yz^3)$

6. When you multiply a polynomial by a monomial, how many terms will there be in your product?

7. Write down two monomials and two polynomials below.

   a. Monomial 1: _____

   b. Monomial 2: _____

   c. Polynomial 1: _____

   d. Polynomial 2:_____

8. Multiply Monomial 1 by Polynomial 2.

9. Multiply Monomial 2 by Polynomial 1.

10. Multiply the product of Monomial 2 and Polynomial 1 (question 9) with Monomial 1.

11. Multiply all the product from question 10 with Monomial 1.

12. Find a classmate. Multiply the product from question 11 with your classmates' Monomial 1.