







## Combining Like Terms and Simplifying Polynomials

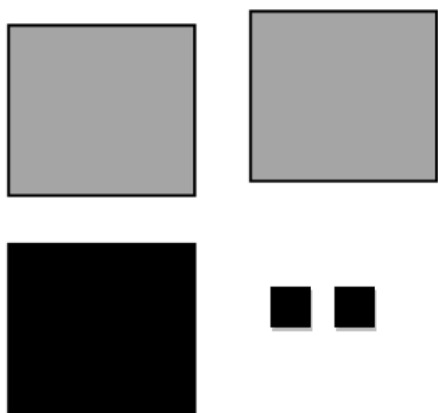
Name: \_\_\_\_\_

A polynomial is in its **simplified form** when:

- Its algebra tile model uses the \_\_\_\_\_ tiles possible
- Its symbolic form contains only \_\_\_\_\_ term of each degree
- No terms with a \_\_\_\_\_ coefficient

Key					
	= 1		= $x$		= $x^2$
	= -1		= $-x$		= $-x^2$

**Like Terms** = terms that can be represented by algebra tiles of the same \_\_\_\_\_ and \_\_\_\_\_



These are two sets of like terms because they are the same size and shape.

There are \_\_\_\_\_  $x^2$  and one \_\_\_\_\_  
There are 2 \_\_\_\_\_ 's

This can be written as

$$\begin{aligned} & x^2 + x^2 - x^2 - 1 - 1 \\ & = 2x^2 - x^2 - 2 \\ & = x^2 - 2 \quad \text{This is the most simplified form} \end{aligned}$$

**Example 1:** Simplify  $4x^2 + 2x + 2 + 2x^2 + 3x + x^2 + 1$  using algebra tiles.

First represent each term with algebra tiles.

Then group the similar tiles together and state the result.

The resulting expression is

Use algebra tiles to model the expression and combine like terms.

$$4x + 1 + x + 5$$

$$2 + 3x + 5x + 4x + 1$$

$$2 + x^2 + 3x + 2x^2 + 2$$

$$3x - 2 - 2x + 4$$

$$x + 3 - 2x - 2 - x$$

$$1 - x^2 + 2x + 2x^2 - 2$$

$$x^2 - 2x - 2x^2 + x^2 - 3 + 3x + 1$$