TOPIC 7

LESSON 7.3a

Second Verse, Same as the the First

6.EE.2a 6.EE.3

Objective: Equivalent Expressions

Warm-Up

Evaluate each expression.

1. $5 \div \frac{3}{4}$

2. $0.24 + 0.6$

3. $\frac{(14 + 8)}{2}$

4. $\frac{14}{2} + \frac{8}{2}$

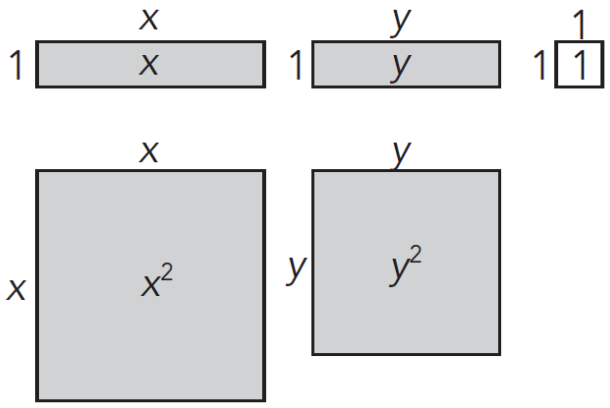
5. What do you notice about the answers to Questions 3 and 4?

EXPLORE 1

Algebra Tiles and Combining Like Terms

As you may have seen in the previous activity, when using algebra tiles to model situations and expressions, it is important to have a shared meaning for each differently-sized algebra tile.

Below you are the algebraic tiles that you can refer to to answer your questions.



2. Represent each numeric or algebraic expression using algebra tiles. Write an addition expression that highlights the different tiles used in the model. Then, sketch the model below the expression.

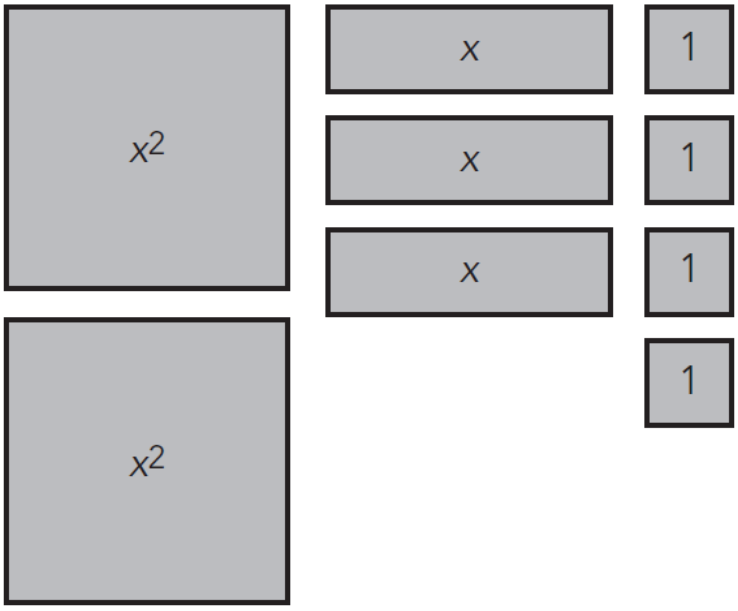
a. 3

b. 3x

c. $3x^2$

The expression you wrote in each part of Question 2 was made up of like terms. All tiles that are the same size and have the same value represent like terms.

3. Given the algebra tile model, write an addition expression that highlights the different tiles in the model. Then, if necessary, combine like terms and write the expression using as few terms as possible.



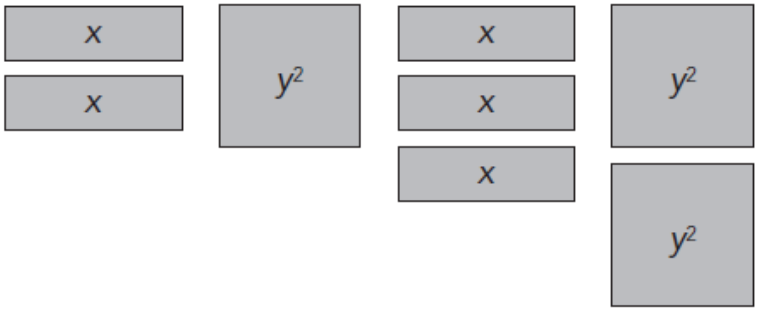
4. Analyze the last expression you wrote in Question 3.

a. How many terms are in your expression with the fewest terms? How does this relate to the algebra tile model?

b. What is the greatest exponent in the expression?

c. What is the coefficient of x in the expression? How does this relate to your algebra tile model?

5. Consider the model.



a. Write an addition expression that highlights the different tiles in the model.

b. Rearrange the tiles to combine all of the like tiles. How many terms does your expression have now?

c. Write the new algebraic expression represented.

6. Represent the algebraic expression $3x^2 + x + 2$ using algebra tiles. How many types of tiles are needed?

Algebra tiles are helpful tools for combining like terms in algebraic expressions. However, because they only represent whole number tiles, they cannot be used to model all algebraic expressions.

7. Use what you have learned about combining like terms to rewrite each algebraic expression with as few terms as possible.

a. $2x + 3x - 4.5x$

b. $3\frac{1}{2}y + 2 + 4y + 1\frac{1}{4}$

c. $4.5x + 6y - 3.5x + 7$

d. $\frac{3}{4}x + 2 + \frac{3}{8}x$

e. $5x + 2y + \frac{1}{3}x^2 - 3x$

Name: _____ Date: _____ Class: _____

Homework HW

LESSON 7.3a

Second Verse, Same as the the First

Objective Equivalent Expressions

Review

1. **Sheldon Elementary School has a school store that sells many items including folders, pencils, erasers, and novelty items. The parent association is in charge of buying items for the store.**

a. One popular item at the store is scented pencils that come in packs of 24 from the retailer. Write an algebraic expression that represents the total number of scented pencils they will have available to sell. Let p represent the number of packs of scented pencils.

b. Another popular item at the store is animal-themed folders. Each pack of folders contains 6 folders.

Practice

1. Represent each algebraic expression by sketching **algebra tiles**. Rewrite the expression in a fewer number of terms, if possible.

a. $x^2 + 2y^2 + 5$

b. $y^2 + 3y + 1 + y$