Student _____ Class _____ Date _____

Lesson 15: Writing Linear Expressions

NYS Learning Standards:

7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, a + 0.05a = 1.05a means that “increase by 5%” is the same as “multiply by 1.05.”

Learning Outcome:

- Rewrite expressions in different forms to better understand relationships within contexts.
- Incorporate expressions representing length and width into formulas for perimeter and area of triangles and rectangles.

Vocabulary:

- Equivalent Expressions: **expressions that have the same value for every possible value of the variable.**
  - **For example:** $x + x + 4 + 2x \rightarrow 4x + 4 \rightarrow 4(x + 1)$

A group of rectangular community gardens is being built on an empty city block. The length of each garden will be 90 feet, but the widths of the gardens will vary. Let g stand of the width of a garden. Write an expression to represent each way to find the perimeter of the gardens.
The original price of a backpack is $40.90. The sale price is 30% off. Write two different expressions to represent its sale price.
Write an expression that is equivalent to 3(x + 2).
The length of a rectangle is x feet. Its width is (x - 7) feet. Write three different expressions you could use to find the rectangle’s perimeter.