Core Content

Cluster Title: Apply and extend previous understandings of arithmetic to algebraic expressions.
Standard 4: Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions* y + y + y *and 3*y *are equivalent because they name the same number regardless of which number* y *stands for.*
MASTERY Patterns of Reasoning
Conceptual: Recognize equivalent expressions. **Procedural:** Substitute values into expressions to prove equivalency. **Representational:** Model equivalent expressions with manipulatives, diagrams or story contexts.

Supports for Teachers

Critical Background Knowledge
Conceptual: Variables are letters that stand for numbers. **Procedural:** Substitute values into expressions to solve an equation, **Representational:** Model algebraic expressions with manipulatives, diagrams or story contexts.
Academic Vocabulary and Notation
=, equation, equivalent, expression, variable

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Instructional Strategies Used	Resources Used
Teach this standard concurrently with 6.EE.3 1. Use substitution to verify that both expressions are equivalent (e.g., $3(2 + x) = 6 + x$) is not true. Substitute any number for x; the expressions have different values, therefore they are not equivalent. (Make sure students try more than one number to make sure it works, because 0 will make this statement true.) 2. Present multiple expressions and ask students to determine if they are equivalent using substitution.	http://www.mathwire.com/numbersense/numbsense.html

Assessment Tasks Used	
Skill-based Task: Are the following expressions equivalent? $x + x + 1 + 1 = 2x + 2$ $5(x + 3) = 5x + 5$	**Problem Task:** Have students generate equivalent expressions for the number 48, using at least two operations and verifying that their notation is correct.

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