

Core Content

Cluster Title: Reason about and solve one-variable equations and inequalities.
Standard 6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number or, depending on the purpose at hand, any number in a specified set.
MASTERY Patterns of Reasoning
Conceptual: Recognize real-world mathematical problems can be expressed using a variable to represent an unknown.
Procedural: Write and solve an expression that represents a real-world problem using variables.
Representational: Use variables to represent numbers or sets of numbers when solving a real-world or mathematical problem.

Supports for Teachers

Critical Background Knowledge
Conceptual: Understand that a variable represents a number or a specified set of numbers.
Procedural: Show arithmetic operations work the same way on variables as they do on numbers. Solve real world mathematical problems using equations or expressions with numbers.
Representational: Model authentic problems with manipulatives or diagrams.
Academic Vocabulary and Notation
$>$, $<$, \geq , \leq , constant, coefficient, solution

Instructional Strategies Used	Resources Used
<ol style="list-style-type: none"> 1. Have students write an expression for a real-world mathematical problem in which all parts of the expression have a numerical value. Then give a similar real-world mathematical problem in which one of the parts of the expression is an unknown, resulting in one part of the expression being a variable. 2. Have students write a real-world mathematical problem and an expression that represents that problem. Then have students switch word problems only and find the expression that represents their partner's real-world mathematical problem. 3. Expose students to a variety of real-world mathematical problems. Have students work in small groups, with a partner, and eventually by themselves to write expressions to represent those situations. 	<p>Create PDF for real-world examples.</p>
Assessment Tasks Used	
<p>Skill-based Task: This is a problem-based standard, so there is no skill-based task.</p>	<p>Problem Task: An appliance repairman charges \$50 for coming to a home for a service call and \$40 an hour for the service. Write an expression to represent her earnings for h hours.</p> <p>Sally delivered 7 newspapers and John delivered x number of newspapers. Write an expression showing how many total newspapers were delivered. Write an expression to represent how many John delivered if Sally delivered seven more newspapers than John.</p>