



Reporting Measure: Generating Equations and Inequalities

Level	Description
Above & Beyond (4.0)	<p>The student will:</p> <ul style="list-style-type: none"> Adapt equations or inequalities to represent situations involving special types of relationships (for example, create an inequality involving an absolute value such as $w - 150 \leq 2.5$ to express that the width of an item must be 150 millimeters with a 2.5 millimeter margin of error).
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Proficient (3.0)	<p>The student will:</p> <p>GEI1—Generate equations in two or more variables to represent situations involving relationships between quantities (for example, create the equation $c = 20 + 8v$ to represent the cost of a specific number of visits in the same month to a gym that charges \$20 per month plus \$8 per visit).</p> <p>GEI2—Generate inequalities in two or more variables to represent situations involving relationships between quantities (for example, create the inequality $0.7g + 0.5z \leq 11$ to represent how many plants can be watered if 11 liters of water are available, a geranium plant requires 0.7 liters of water, and a zinnia plant requires 0.5 liters of water).</p>
2.5	No major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content
Getting There (2.0)	<p>GEI1—The student will recognize or recall specific vocabulary (for example, <i>relationship</i>) and perform basic processes such as:</p> <ul style="list-style-type: none"> Identify real-world situations that are best modeled with equations. For example, recognize signal words such as <i>equal</i>, <i>the same as</i>, <i>equivalent</i>. Define variables from a real-world problem. Represent relationships with equations in one variable. For example, generate the equation $210(t - 5) = 41,790$ to represent the initial number of pear trees on a farm where a farmer cut down five trees, each of the remaining trees produced 210 pears, and the total pear harvest from the remaining trees was 41,790 pears. Represent constraints with equations in one variable. For example, generate the equation $0.50p + 3 = 12$ to represent the constraints associated with wanting to completely use up a \$12 credit to buy art supplies, having already selected a sketch pad that costs \$3, and wanting to buy as many pencils (p) as possible at \$0.50 each. Interpret solutions to equations as viable or nonviable options when modeling real-world situations. For example, recognize that a negative solution is not viable when finding the height of a triangle. <p>GEI2—The student will recognize or recall specific vocabulary (for example, <i>constraint</i>) and perform basic processes such as:</p> <ul style="list-style-type: none"> Identify real-world situations that are best modeled with inequalities. For example, recognize signal words such as <i>greater than</i>, <i>less than</i>, <i>at least</i>. Represent relationships with inequalities in one variable. For example, generate the inequality $3x \leq 1,000$ to represent the number of \$3 bricks that can be purchased with a budget of \$1,000.

	<ul style="list-style-type: none"> • Represent constraints with inequalities in one variable. For example, generate the inequality $t + 0.08t \leq 10$ to represent the constraints associated with having \$10 dollars to spend on items whose total cost (t) is subject to an 8% sales tax. • Interpret solutions to inequalities as viable or nonviable options when modeling real-world situations. For example, recognize that a negative number of items is not a viable solution when determining how many of two different types of items can be purchased for a specific amount of money.
1.5	Partial success at score 2.0 content, and major errors or omissions regarding score 3.0 content
Beginning (1.0)	With help, partial success at score 2.0 content and score 3.0 content