



Reporting Measure: Context of an Expressions

Level	Description
Above & Beyond (4.0)	<p>The student will:</p> <ul style="list-style-type: none"> Decide if a statement is reasonable by creating and evaluating an algebraic expression (for example, if the manufacturer of a car with a 10-gallon gas tank states that the car has an estimated fuel economy of 20 miles per gallon, determine if it is reasonable to expect the car to drive 200 miles on a tank of gas).
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>CTE1—Write an algebraic expression to represent the information presented in a real-world problem (for example, compose the expression $30w + 40d$ to represent the monthly costs of a company that rents a certain number of web servers (w) for \$30 per month and a certain number of database servers (d) for \$40 per month).</p> <p>CTE2—Convert measurement units to evaluate expressions (for example, if the appropriate dose of a medicine is 5 milligrams per pound of patient body weight but the medicine comes in vials where 0.9 grams are dissolved in each milliliter of solution, calculate the required dosage in milliliters of solution for a patient whose mass is 72.7 kilograms).</p> <p>CTE3—Interpret expressions by identifying the dependent and independent variables (for example, if the expression $5q$ represents a student's score on a quiz where each correct answer is worth 5 points and q represents the number of correct answers, then the number of points scored is dependent on how many questions are answered correctly, and not vice versa).</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>CTE1—The student will recognize or recall specific vocabulary (for example, <i>contextualized meaning</i>) and perform basic processes such as:</p> <ul style="list-style-type: none"> Match algebraic expressions to a contextualized meaning. For example, if a florist makes arrangements with 3 daisies and 4 marigolds, and D is the price of one daisy and M is the price of one marigold, determine from the following list of expressions ($3D + 4M$, $2D + 4M + D$, $3(3M + 4D)$, or $3(4M + 3D)$) that the price of 3 arrangements is $3(4M + 3D)$. Write an algebraic expression to represent a decontextualized description. For example, “-6 plus the product of -1 and x” is equal to $-6 - x$; “x times y minus a times b times c” is equal to $xy - abc$; or “first consider the expression ‘the sum of 7 and the product of -2 and x’ and then find 4 plus the quantity of 2 times that expression” is equal to $4 + 2(7 - 2x)$. <p>CTE2—The student will recognize or recall specific vocabulary (for example, <i>cancel out</i>, <i>measurement unit</i>) and perform basic processes such as:</p> <ul style="list-style-type: none"> Explain that measurement units can be viewed as algebraic objects (variables) in an expression. Explain that measurement units will cancel out when they appear in both the numerator and denominator of an expression. For example, $\frac{12 \text{ feet}}{1 \text{ second}} \times 60 \text{ seconds} = \frac{12 \text{ feet}}{1 \text{ second}} \times 60 \text{ seconds} = 12 \text{ feet} \times 60 = 720 \text{ feet}.$

	<ul style="list-style-type: none"> • Identify the units used to give information in a real-world problem. For example, if a rabbit is crossing a 9-foot-wide road at a rate of 12 feet per second and a truck is 50 feet away and driving toward the rabbit at a rate of 100 feet per second, then speed is given in <i>feet per second</i> and distance traveled is given in <i>feet</i>. • Rearrange algebraic formulas to solve for a specific unit. For example, the distance formula $d = rt$ can be stated as $\frac{d}{t} = r$ to solve for rate. • Convert measurements to like units before evaluating an expression. For example, convert miles to yards before trying to determine how many laps around a field with a perimeter of 300 yards are required to run at least 2 miles. <p>CTE3—The student will recognize or recall specific vocabulary (for example, <i>dependent variable</i>, <i>independent variable</i>) and perform basic processes such as:</p> <ul style="list-style-type: none"> • Explain that the independent variable drives the value of the dependent variable. • Explain that the dependent variable is typically equal to an expression involving the independent variable. • Explain that various values for an independent variable and the resulting values for the dependent variable can be represented visually on a coordinate plane. For example, for a specific rate, time might be graphed along the x-axis and distance traveled might be graphed along the y-axis.
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