

Proficiency Scales

Mathematics
Grade 6
2020



SOUTHWESTERN UNION
EDUCATION

PROFICIENCY SCALES

Proficiency scales serve as a starting point for unit planning, creating assessments, delivering instruction, grading, and reporting progress, as well as making teaching visible to students and guiding their growth on the standards. Specifically, a proficiency scale is a continuum or learning progression that articulates distinct levels of knowledge and skills relative to specific standards. It shows teachers and students what proficiency looks like, what knowledge and skills students need to achieve proficiency, and how students might go beyond proficiency.

A proficiency scale is composed of a series of levels as follows:

Score 3.0—Heart of the proficiency scale; it defines the target content that teachers expect all students to know and be able to do. I CAN statements are provided for this level.

Score 2.0—Simpler content; it describes the foundational knowledge and skills that students will need to master before progressing to proficiency.

Score 4.0—Challenging content; it provides students the opportunity to go above and beyond expectations by applying their knowledge in new situations or demonstrating understanding beyond what the teacher teaches in class. A generic statement is provided for this level.

Scores 1.0 and 0.0—No specific content; 1.0 indicates that a student can demonstrate some knowledge or skill with help from the teacher, but not independently; 0.0 means that, even with help, a student cannot show any understanding. Generic statements are provided for these levels.

Half-point Scores—More precise measurement of knowledge and skills that is between two levels. Generic statements are provided for these levels.

Proficiency scales become the centerpiece of communication and understanding in the classroom, as well as the common language for discussing learning between teacher and student.

The proficiency scales are organized according to the domains and strands in the NAD standards.

The cognitive rigor or complexity of the 3.0 learning targets has also been included, for it impacts the selection of instructional activities as well as assessment tasks. The Depth of Knowledge (DOK) model is generally used for this purpose, which is a taxonomy of four levels of cognitive demand. The levels are:

- **Level 1**—Recall
- **Level 2**—Skill/Concept
- **Level 3**—Strategic Thinking
- **Level 4**—Extended Thinking

Depth of Knowledge (DOK) Levels



Level One Activities	Level Two Activities	Level Three Activities	Level Four Activities
<p>Recall elements and details of story structure, such as sequence of events, character, plot and setting.</p> <p>Conduct basic mathematical calculations.</p> <p>Label locations on a map.</p> <p>Represent in words or diagrams a scientific concept or relationship.</p> <p>Perform routine procedures like measuring length or using punctuation marks correctly.</p> <p>Describe the features of a place or people.</p>	<p>Identify and summarize the major events in a narrative.</p> <p>Use context cues to identify the meaning of unfamiliar words.</p> <p>Solve routine multiple-step problems.</p> <p>Describe the cause/effect of a particular event.</p> <p>Identify patterns in events or behavior.</p> <p>Formulate a routine problem given data and conditions.</p> <p>Organize, represent and interpret data.</p>	<p>Support ideas with details and examples.</p> <p>Use voice appropriate to the purpose and audience.</p> <p>Identify research questions and design investigations for a scientific problem.</p> <p>Develop a scientific model for a complex situation.</p> <p>Determine the author's purpose and describe how it affects the interpretation of a reading selection.</p> <p>Apply a concept in other contexts.</p>	<p>Conduct a project that requires specifying a problem, designing and conducting an experiment, analyzing its data, and reporting results/ solutions.</p> <p>Apply mathematical model to illuminate a problem or situation.</p> <p>Analyze and synthesize information from multiple sources.</p> <p>Describe and illustrate how common themes are found across texts from different cultures.</p> <p>Design a mathematical model to inform and solve a practical or abstract situation.</p>

Webb, Norman L. and others. "Web Alignment Tool" 24 July 2005. Wisconsin Center of Educational Research. University of Wisconsin-Madison. 2 Feb. 2006. <<http://www.wcer.wisc.edu/WAT/index.aspx>>

DISCIPLINARY TRANSFER GOALS

There are a small number of overarching, long-term transfer goals in each subject area. They are meant to be integrated within and across grade-level instruction. Below are the transfer goals for math.

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

ESSENTIAL QUESTIONS AND BIG IDEAS

for MATH DOMAINS



Numbers and Operations

Essential Question: How can we use God's gift of the number system to understand the world and all created things?

Big Idea: The use of numerical and algebraic expressions helps us solve real-world and mathematical problems as well as understand God's creation.

Operations and Algebraic Thinking

Essential Question: What do mathematical principles reveal about God's ordered universe?

Big Idea: The consistency of mathematical order of operations and principles demonstrates the orderliness and precision of God's creation and universe.

Measurement

Essential Question: How do the accuracy of measurements help us fathom God's creation?

Big Idea: Accurate measurements and conversions help to solve multi-step real-world problems and see the scope of God's creation.

Geometry

Essential Question: How does the study of geometrical principles help us to better understand God's creation?

Big Idea: The complexity of God's creation is revealed in the attributes and relationships of geometric objects and principles when applied to the real world.

Data Analysis, Statistics, and Probability

Essential Question: How can we collect and use information in a way that reflects God's orderly creation?

Big Idea: Information from God's vast creation can be measured, recorded, and displayed to assist in understanding and decision making.



Subject: Math		Domain: Numbers and Operations	Grade: 6
		Strand: Rational Numbers	
Standard: 6.NO.1 Add, subtract, multiply, and divide multi-digit whole numbers and decimals (6.NS.2,3)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">• Divide multi-digit numbers using the standard algorithm (e.g., $5,727 \div 23$; $3,882 \div 13$) DOK 2 I can divide multi-digit numbers.• Divide multi-digit decimals using the standard algorithm (e.g., $1.044 \div .29$; $65.55 \div 2.5$) DOK 2 I can divide multi-digit decimals.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none">• <i>Algorithm, decimal, divide, multi-digit, multiply, number, standard</i> The student will perform basic processes, such as: <ul style="list-style-type: none">• Add, subtract, and multiply multi-digit numbers using the standard algorithm (e.g., $2,345 + 229$; $7,539 - 56$; $1,302 \times 7$)• Add, subtract, and multiply multi-digit decimals using the standard algorithm (e.g., $692.24 + 377.44$; $65.789 - 24.675$; 32.85×1.25)		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		

Subject: **Math**Domain: **Numbers and Operations**
Strand: **Rational Numbers**Grade: **6****Standard:** 6.NO.2 Find common factors and multiples (6.NS.4); understand and apply prime factorization and exponents (6.EE.1)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Use the distributive property to express a sum of two whole numbers between one and 100 with a common factor as a multiple of a sum of two whole numbers with no common factor (e.g., express $36 + 8$ as $4(9 + 2)$) DOK 3 I can use the distributive property to show the sum of two whole numbers between one and 100 in different ways.Evaluate numerical expressions involving whole-number exponents (e.g., evaluate $5 \times (2/5) + 2^2$) DOK 3 I can evaluate numerical expressions with whole-number exponents.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Common factor, distributive property, evaluate, exponent, express, expression, factor, greatest common factor, least common multiple, multiple, numerical, prime factorization, prime number, whole number</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Find the greatest common factor of two whole numbers less than or equal to 100 (e.g., find the greatest common factor of 84 and 56)Find the least common multiple of two whole numbers less than or equal to 12 (e.g., find the least common multiple of 84 and 56)Explain that prime factorization is the breaking down of a number into the prime numbers (e.g., numbers that have only two factors, 1 and itself) that multiply to the original number (e.g., the prime factorization of 6 is 2×3)Find the prime factorization of a given number (e.g., find the prime factorizations of 38, 95, 51, and 73)Explain that exponents can be used to group factors that are the same (e.g., $60 = 2 \times 2 \times 3 \times 5$ or $60 = 2^2 \times 3 \times 5$)	

	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**Domain: **Numbers and Operations**
Strand: **Rational Numbers**Grade: **6****Standard:** 6.NO.3 Understand, compare, and order integers; apply integer principles within the four basic operations; graph ordered pairs on a coordinate plan (6.NS.5,6,7)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">• Use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of zero in each situation (e.g., <i>At 8 a.m. the temperature was -17°F. At 3 p.m. the temperature was 22°F. Was it warmer or colder at 8 a.m.? Explain the meaning of 0° in relation to the answer.</i>) DOK 3 I can use positive and negative numbers to describe quantities.• Write, interpret, and explain statements of order for rational numbers in real-world contexts (e.g., <i>write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C</i>) DOK 3 I can write, interpret, and explain statements of order for rational numbers.• Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation (e.g., <i>for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debit in dollars; distinguish comparisons of absolute value from statements about order by recognizing that an account balance less than -30 dollars represents a debt greater than 30 dollars</i>) DOK 3 I can interpret absolute value as it applies to real-world situations.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none">• <i>Absolute value, comparison, inequality, integer, interpret, magnitude, negative, number, number line, opposite, order, point, positive, quantity, rational number, real world, relative, represent, sign</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">• Explain that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., <i>temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge</i>)• Explain that a rational number is a point on the number line	

	<ul style="list-style-type: none"> Describe opposite signs of numbers as indicating locations on opposite sides of 0 on the number line Explain that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$, and that 0 is its own opposite) Find and position integers and other rational numbers on a number line (e.g., when given the set of values $[5, 2/3, -3, -3/4, -(-3), -2.5, -0]$, represent them on a number line) Interpret statements of inequality as statements about the relative position of two numbers on a number line (e.g., interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right) Describe the absolute value of a rational number as its distance from 0 on the number line 	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**Domain: **Numbers and Operations**
Strand: **Rational Numbers**Grade: **6****Standard:** 6.NO.3 Understand, compare, and order integers; apply integer principles within the four basic operations; graph ordered pairs on a coordinate plane (6.NS.6,8)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Graph points in all four quadrants of the coordinate plane to solve real-world and mathematical problems (e.g., <i>Barry wants to plant a garden in his backyard. He wants to place the following posts from the northwest corner of his house: post A is 5 ft to the west and 6 ft north, post B is 5 ft to the west and 12 ft south, post C is 4 ft to the east and 12 ft north, post D is 4 ft to the east and 6 ft south. Draw and label the points on the coordinate plane.</i>) DOK 3 I can graph points in all four quadrants of the coordinate plane to solve problems.Use coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate (e.g., <i>when given the point (1, -2), a second point (1,7), and a third point (3,7), calculate the sum of the distances between each successive point</i>) DOK 3 I can calculate the distance between points that share a coordinate.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Absolute value, axis, calculate, coordinate, coordinate plane, graph, integer, mathematical, ordered pair, point, quadrant, rational number, real world, sign</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Describe signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane (e.g., <i>the ordered pair (2,4) would be located in the first quadrant of the coordinate plane</i>)Explain that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axesFind and position pairs of integers and other rational numbers on a coordinate plane (e.g., <i>plot the points (2,4), (3,-6), (-1,-3), and (-5,7) on a coordinate plane</i>)	

	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Math		Domain: Numbers and Operations	Grade: 6
		Strand: Rational Numbers	
Standard: 6.NO.4 <u>Divide fractions by fractions</u> ; express a remainder as a fraction or decimal; convert within fractions, decimals, and percents; convert fractions to terminating, repeating, or rounded decimals (6.NS.1)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Solve word problems involving the division of fractions by fractions (e.g., <i>How many 3/4-cup servings are in 2/3 of a cup of yogurt?</i>) DOK 3 I can solve word problems involving the division of fractions by fractions.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Compute, division, equation, fraction, interpret, model, multiplication, quotient, relationship, represent, visual, word problem</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Interpret quotients of fractions by using the relationship between multiplication and division (e.g., $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$)Compute quotients of fractions by using visual fraction models and equations (e.g., <i>solve the problem $(3/4) \div (2/3)$ by representing both fractions with a model and determining how many times $2/3$ fits into $3/4$</i>)		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		



Subject: Math		Domain: Numbers and Operations	Grade: 6
		Strand: Ratios/Proportions/Percentages	
Standard: 6.NO.5 Understand and apply ratio concepts and use ratio reasoning to solve problems (6.RP.1,2,3)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Solve real-world and mathematical problems using ratios and unit rates (<i>e.g., if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</i>) DOK 3 I can solve problems using ratios and unit rates.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Denominator, equivalent, fraction, mathematical, percent, quantity, rate, ratio, real world, relationship, representation, unit rate</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Use ratio language to describe a ratio relationship between two quantities (<i>e.g., The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak. For every vote candidate A received, candidate C received nearly three votes.</i>)Use rate language (<i>a/b</i>) in the context of a ratio relationship (<i>a:b</i>) (<i>e.g., This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar. We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.</i>)Recognize multiple equivalent representations of ratios (<i>e.g., 1:2, 1 to 2, 1/2</i>)Explain that a percent is a specific type of ratio, which can be represented as a fraction with a denominator of 100 (<i>e.g., when finding a percent of a quantity as a rate per 100, 30% of a quantity means 30/100 times the quantity</i>)		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		

	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Math		Domain: Operations and Algebraic Thinking	Grade: 6
		Strand: Expressions and Equations	
Standard: 6.OAT.1 <u>Apply basic operations to algebraic expressions; solve and explain one-variable equations and inequalities; identify parts of an expression using mathematical terms</u> (6.EE.1,2,3,4)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Evaluate expressions at specific values of their variables including whole-number exponents, using Order of Operations (<i>e.g., use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$</i>) DOK 3 I can evaluate expressions when given the specific value of a variable.Generate equivalent expressions using the properties of operations (<i>e.g., apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$</i>) DOK 3 I can create equivalent expressions using the properties of operations.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Coefficient, distributive, equivalent, exponent, expression, factor, generate, mathematical, number, operation, order of operations, part, product, property, quotient, term, value, variable, whole number</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Write expressions involving exponents, numbers, and letters standing for numbers (<i>e.g., express the calculation “subtract y from 5” as $5 - y$</i>)Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient) (<i>e.g., describe the expression $2(8 + 7)$ as a product of two factors</i>)View one or more parts of an expression as a single entity (<i>e.g., view $(8 + 7)$ as both a single entity and a sum of two terms</i>)Define Order of Operations (<i>e.g., perform operations in the conventional order when there are no parentheses to specify a particular order</i>)Identify when two expressions are equivalent (<i>e.g., the expressions $y + y + y$</i>)		

	<i>and 3y are equivalent because they name the same number regardless of which number y stands for)</i>	
Re	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Math		Domain: Operations and Algebraic Thinking Strand: Expressions and Equations	Grade: 6
Standard: 6.OAT.1 Apply basic operations to algebraic expressions; <u>solve and explain one-variable equations, and inequalities</u> ; identify parts of an expression using mathematical terms (6.EE.5,6,7,8)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Solve real-world and mathematical equations of the form $x + p = q$ and $px = q$ when all variables are nonnegative rational numbers (e.g., <i>Daniel went to visit his grandmother, who gave him \$5.50. Then he bought a book costing \$9.20 and had \$2.30 left. Write and solve an equation to find out how much money he had before visiting his grandmother.</i>) DOK 3 I can solve problems by writing and solving equations of the form $x + p = q$ and $px = q$.Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem (e.g., <i>You are hiking on a mountain which has a summit of 9,382 feet. Write an inequality for the altitude, a, you must be at.</i>) DOK 3 I can write an inequality of the form $x > c$ or $x < c$ to represent a problem.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Condition, constraint, diagram, equation, expression, inequality, infinitely, mathematical, negative, number, number line, rational number, real world, represent, set, solution, substitution, true, variable</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Explain that solving an equation or inequality is a process of answering a question: Which values from a specified set, if any, make the equation or inequality true?Use substitution to determine whether a given number makes an equation or inequality true (e.g., <i>determine if $x = 3$ is a solution for $4x + 2 < 10$</i>)Use variables to represent numbers and write expressions when solving a real-world or mathematical problem (e.g., <i>Scott bought new volleyballs (v) from Thailand. He gave 56 balls to his friend. Write the expression that shows how many balls Scott has now.</i>)		

	<ul style="list-style-type: none"> • Explain that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set • Explain that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions • Represent solutions of inequalities on number lines (e.g., <i>represent the inequality $x \leq 2\frac{1}{2}$ on a number line</i>) 	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**Domain: **Operations and Algebraic Thinking**
Strand: **Expressions and Equations**Grade: **6****Standard:** 6.OAT.2 Represent, graph, and analyze quantitative relationships between dependent and independent variables (6.EE.9)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the corresponding equation (e.g., <i>in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time</i>) DOK 3 <p>I can use graphs and tables to show the relationship between dependent and independent variables.</p>	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Analyze, dependent, equation, graph, independent, quantity, real world, relationship, table, variable</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Define the relationship between independent and dependent variables (e.g., <i>the value of the dependent variable is determined by the value of the independent variable</i>)Use variables to represent two quantities in a real-world problem that change in relationship to one another (e.g., <i>when given the distance that a truck driver travels over different amounts of time at the constant speed of 65 miles per hour, identify the independent variable as time and the dependent variable as distance</i>)Write an equation to express one quantity (dependent variable) in terms of the other quantity (independent variable) (e.g., <i>when given the distance that a truck driver travels over different amounts of time at the constant speed of 65 miles per hour, write the equation $d = 65t$ to describe the relationship between the independent variable time and the dependent variable distance</i>)	

	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	

Subject: **Math**Domain: **Measurement**
Strand: **Elapsed Time**Grade: **6****Standard:** 6.M.1 Calculate elapsed time

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: <ul style="list-style-type: none">Calculate elapsed time (<i>e.g., given a table with start time at one column and end time at another column, find the elapsed time to complete the table</i>) DOK 2 I can calculate elapsed time.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Calculate, elapsed, time</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Explain elapsed time (<i>e.g., amount of time that passes from the start of an event to its finish</i>)	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Math		Domain: Geometry	Grade: 6
		Strand: Area/Volume	
Standard: 6.GEO.1 <u>Solve real-world and mathematical problems involving area</u> , surface area, and volume (6.G.1)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Solve real-world or mathematical problems involving the area of polygons (e.g., <i>when given the dimensions of a playground, decompose the shape into a compilation of rectangles and triangles and calculate the area of the playground</i>) DOK 3 I can find the area of a polygon by decomposing the shape into rectangles and triangles.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Area, calculate, compilation, compose, decompose, irregular polygon, mathematical, model, polygon, real world, rectangle, right triangle, shape, special quadrilateral, triangle</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Explain the area of a triangle as it relates to a rectangle using models (e.g., <i>the area of each triangle is one-half the area of the rectangle</i>)Explain the area of a special quadrilateral as it relates to a rectangle using models (e.g., <i>the area of a special quadrilateral and a rectangle are the same</i>)Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes (e.g., <i>when given an irregular polygon, decompose the polygon into a compilation of rectangles and triangles and calculate the area of the polygon</i>)		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		

	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Math		Domain: Geometry	Grade: 6
		Strand: Area/Volume	
Standard: 6.GEO.1 <u>Solve real-world and mathematical problems involving area, surface area, and volume</u> (6.G.2)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Apply the formulas $V = l w h$ and $V = b h$ to find the volume of a right rectangular prism with fractional edge lengths in the context of solving real-world and mathematical problems (e.g., when given a right rectangular prism with edge lengths of $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{1}{4}$, calculate the volume of the prism by using the formulas $V = l w h$ and $V = b h$) DOK 2 I can find the volume of a right rectangular prism by applying the appropriate formula.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none">Calculate, edge, formula, fractional, length, mathematical, product, real world, right rectangular prism, unit cube, volume The student will perform basic processes, such as: <ul style="list-style-type: none">Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths (e.g., when given a right rectangular prism with edge lengths of $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{1}{4}$, calculate the volume of the prism by packing it with unit cubes that have edge lengths of $\frac{1}{12}$, then show that the volume is equal to the product of the edge lengths of the prism)		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	

Score 0.0	Even with help, no success
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Subject: Math		Domain: Geometry	Grade: 6
		Strand: Area/Volume	
Standard: 6.GEO.1 Solve real-world and mathematical problems involving area, surface area, and volume (6.G.3)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	The student will: <ul style="list-style-type: none">Use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate in the context of solving real-world and mathematical problems (e.g., when given a coordinate plane with points, find the distance between (4,-2) and (4,3)) DOK 2 I can use coordinates to find the length of a side of a polygon with the same first coordinate or the same second coordinate.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none">Coordinate, coordinate plane, mathematical, point, polygon, real world, side, vertex The student will perform basic processes, such as: <ul style="list-style-type: none">Draw polygons in the coordinate plane given coordinates for the vertices (e.g., draw a polygon in the coordinate plane with these vertices—(-7,4) (-8,5) (-8,6) (-7,7) (-5,7) (-5,5) (-7,4))		
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content	
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content		
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content	
Score 0.0	Even with help, no success		

Subject: **Math**Domain: **Geometry**
Strand: **Area/Volume**Grade: **6****Standard:** 6.GEO.1 Solve real-world and mathematical problems involving area, surface area, and volume (6.G.4)

Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught	
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content
Score 3.0	The student will: <ul style="list-style-type: none">Use nets made up of rectangles and triangles to find the surface area of three-dimensional figures in the context of solving real-world and mathematical problems (<i>e.g., when given a three-dimensional figure, decompose the surface into a net of rectangles and triangles and calculate the surface area</i>) DOK 3 I can find the surface area of a three-dimensional figure with the use of a net.	
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content
Score 2.0	The student will recognize or recall vocabulary such as: <ul style="list-style-type: none"><i>Area, calculate, composite, decompose, face, figure, mathematical, net, real world, rectangle, shape, surface, surface area, three dimensional, triangle, two dimensional</i> The student will perform basic processes, such as: <ul style="list-style-type: none">Explain that the surface area of a three-dimensional figure is made up of the sums of the areas of its facesExplain that a net is a composite two-dimensional shape of a three-dimensional object used to find the surface areaRepresent three-dimensional figures using nets made up of rectangles and triangles (<i>e.g., when given a three-dimensional figure, decompose the surface into a net of rectangles and triangles</i>)	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	

	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	



Subject: Math		Domain: Data Analysis, Statistics, and Probability	Grade: 6
		Strand: Statistics and Probability	
Standards: 6.DSP.1 Develop understanding of statistical variability (6.SP.1,2,3) 6.DSP.2 Summarize and describe distributions (6.SP.4,5)			
Score 4.0	In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught		
	Score 3.5	In addition to score 3.0 performance, partial success at score 4.0 content	
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none">Calculate quantitative measures of center (mean and/or median) and spread/variability (interquartile range and/or mean absolute deviation) of a data set (<i>e.g., when given a set of numbers, calculate measures of center and variability; describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered</i>) DOK 3 I can describe the distribution of a set of data by center, spread, and overall shape.Choose the appropriate measures of center and variability based on the shape of the data distribution and the context in which the data were gathered (<i>e.g., when given a set of numbers representing the average monthly precipitation in inches for Dallas, TX from January to December, relate the properties of the data and the overall shape of the distribution to the context, and select the best measures of center and variability to represent the data set</i>) DOK 3 I can choose appropriate measures of center and variability to describe a data set gathered to answer a statistical question.		
	Score 2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0 content	
Score 2.0	<p>The student will recognize or recall vocabulary such as:</p> <ul style="list-style-type: none"><i>Attribute, box plot, calculate, center, context, data, data set, deviation, distribution, dot plot, histogram, interquartile range, mean, mean absolute deviation, measure, measure of center, measure of variability, measured, measurement, median, number line, numerical, observation, pattern, plot, property, quantitative, represent, shape, spread, surface feature, statistical question, unit, value, variability, variation</i> <p>The student will perform basic processes, such as:</p> <ul style="list-style-type: none">Explain that a statistical question is one that anticipates variability in the data related to the question and accounts for it in the answers (<i>e.g., “How old am I?”</i>)		

	<p><i>is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages)</i></p> <ul style="list-style-type: none"> • Explain that a set of data collected to answer a statistical question has a distribution which can be described by its center (mean and/or median), spread/variability (interquartile range and/or mean absolute deviation), and overall shape • Explain that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number • Display numerical data in plots on a number line, including dot plots, histograms, and box plots (<i>e.g., when given the birthdates of students in a class, group the dates by month and represent them using a histogram</i>) • Describe surface features of numerical data sets (<i>e.g., number of observations, how the attribute was measured, units of measurement</i>) 	
	Score 1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
Score 1.0	With help, partial success at score 2.0 content and score 3.0 content	
	Score 0.5	With help, partial success at score 2.0 content but not at score 3.0 content
Score 0.0	Even with help, no success	