

Theory of Action: Academic standards represent a collective commitment around what students should learn each year. The state assessment asks students to demonstrate their knowledge, skills, and understanding related to these standards using a common measure. The resulting data allows us to see patterns in performance that should guide school and district improvement, helping identify areas of strength and opportunity.

Role of Performance Level Descriptors in Defining Proficiency: Performance level descriptors bridge the state assessment to classroom instruction and the systems of formative assessments that guide local instruction and choices about individual students. **Academic proficiency represents a range of observable student performance characteristics.** There are multiple pathways to proficiency, and students rely upon their strengths differently within that range of performance.

Proficiency and Difficulty: A student’s ability to demonstrate proficiency is influenced by the complexity of the texts or stimuli presented, tasks they’re asked to complete, and the contexts in which they are engaged. As student performance improves, students are typically able to handle more challenging texts/stimuli, tasks, and contexts, and are able to demonstrate their skills and knowledge more accurately and consistently.

Operations and Algebraic Thinking <i>Student performance indicates the ability to...</i>				
Claim 1	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.0A.1	Recognize operations inside grouping symbols must be calculated first.	Evaluate numerical expressions involving a single set of grouping symbols.	Evaluate numerical expressions with multiple grouping symbols.	Write an expression using grouping symbols that reflects a given situation and then use the expression to solve a problem.
5.0A.2	Write a simple numerical expression composed of operations that record calculations with numbers.	Translate verbal descriptions of up to three numerical operations to symbolic expressions, including expressions involving parentheses.	Write and interpret expressions involving parentheses.	Write and evaluate expressions involving multiple sets of parentheses, including from a real-world problem.
5.0A.3	Use a partially completed numerical pattern based on a given rule and determine the next term of the pattern.	Generate one numerical pattern using a given rule.	Generate two numerical patterns using two given rules.	Generate two numerical patterns using two given rules and predict apparent patterns prior to graphing the given rules on the coordinate plane.

Numbers and Operations in Base 10 *Student performance indicates the ability to...*

Claim 2	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.NBT.1	Recognize that the value of a digit in a multi-digit number depends on its position within the number.	Recognize that in a multi-digit number, a digit in one place is more than what it represents in the place to its right and less than what it represents in the place to its left.	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	Explain that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
5.NBT.2	Identify an increase in the number of zeros of the product when multiplying a number by powers of 10.	Identify patterns in the number of zeros of the product when multiplying a number by powers of 10.	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10.	Analyze and describe the relationship between the patterns in the number of zeros of the product / quotient when multiplying or dividing a number by powers of 10.
	Recognize that the placement of the decimal point changes when a decimal is multiplied or divided by a power of 10. Identify the base and exponent of a whole-number exponent.	Identify patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Identify whole-number exponents to represent powers of 10.	Explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10.	Analyze patterns to predict the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Apply and explain the use of whole-number exponents to denote powers of 10 in multi-step problems.
5.NBT.3a	Identify decimals to tenths using base-10 numerals and number names.	Identify decimals to hundredths using base-10 numerals, number names, and expanded form.	Read and write decimals to thousandths using base-10 numerals, number names, and expanded form.	Describe, compare, and write multiple decimals to thousandths using base-10 numerals, number names, and expanded form.
5.NBT.3b	Compare two decimals to tenths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	Compare two decimals to hundredths based on meanings of the digits in each place using $>$, $=$, and $<$ symbols to record the results of comparisons.	Compare two decimals to thousandths based on meanings of the digits in each place using $>$, $=$, and $<$ symbols to record the results of comparisons Example: thirty-eight tenths $>$ 3.78.	Analyze and justify the comparison of two or more decimals to the thousandths place by interpreting the value of digits in each place. Evaluate and explain the reasoning behind the use of $>$, $=$, and $<$ symbols to record and communicate the results of comparisons.
5.NBT.4	Use the place value system to round decimals to the nearest whole number.	Use the place value system to round decimals to the tenths place.	Use the place value system to round decimals to any place.	Apply the place value system to round decimals to any place with precision, justifying the rounding process based on the value of digits in each place and explaining the impact of rounding in real-world contexts.

Claim 2	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.NBT.5	Identify the product of two multi-digit whole numbers.	Calculate the product of two multi-digit whole numbers.	Accurately multiply multi-digit whole numbers using the standard algorithm.	Demonstrate and justify the process of accurately multiplying multi-digit whole numbers using the standard algorithm.
5.NBT.6	Calculate whole-number quotients of whole numbers with up to two-digit dividends and one-digit divisors.	Calculate whole-number quotients of whole numbers with up to three-digit dividends and two-digit divisors.	Calculate whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.	Analyze and apply strategies to find whole-number quotients of up to four-digit dividends and two-digit divisors. Justify the process through equations, models, and visual representations, and assess the efficiency of different methods.
5.NBT.7	Add, subtract, multiply, and divide decimals of whole numbers up to four digits.	Add, subtract, multiply, and divide decimals to tenths.	Add, subtract, multiply, and divide decimals to hundredths.	Compare and contrast different methods for adding, subtracting, and dividing decimals to hundredths. Explain why one approach may be more efficient than another in a given context.

Fractions

Claim 3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.NF.1	Identify the sum and/or difference of up to three fractions with unlike denominators.	Identify the sum and/or difference of up to three fractions with unlike denominators that may include mixed numbers by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators (e.g., $2/3 + 5/4 = 8/12 + 15/12 = 23/12$). Answers may include mixed numbers.	Add and/or subtract up to three fractions with unlike denominators that may include mixed numbers by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators (e.g., $2/3 + 5/4 = 8/12 + 15/12 = 23/12$). Answers may include mixed numbers.	Explain how to find sum and/or difference of up to three fractions with unlike denominators that may include mixed numbers by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators (e.g., $2/3 + 5/4 = 8/12 + 15/12 = 23/12$). Answers may include mixed numbers.

Claim 3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.NF.2	Identify the solution to word problems involving addition and subtraction of fractions referring to the same whole by using visual models to represent the problem. Use benchmark fractions and number sense of fractions to identify an estimate.	Identify the solution to word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by using a variety of representations, equations, and visual models to represent the problem. Use benchmark fractions and number sense of fractions to identify an estimate and assess the reasonableness of answers.	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by using a variety of representations, equations, and visual models to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers (e.g., recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$).	Explain how to solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by using a variety of representations, equations, and visual models to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
5.NF.3	Identify a fraction that results from dividing the whole number numerator by the whole number denominator.	Identify the fraction that results from dividing the whole number numerator by the whole number denominator. Identify the solution to word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.	Interpret a fraction as the number that results from dividing the whole number numerator by the whole number denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.	Explain the meaning of a fraction as the number that results from dividing the whole number numerator by the whole number denominator, and why multiplying a fraction by the denominator results in the numerator. Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.
5.NF.4	Multiply a fraction by a fraction.	Multiply a fraction by a whole number or multiply a fraction by a fraction.	Multiply a fraction by a whole number and multiply a fraction by a fraction.	Multiply a mixed number by a whole number and multiply a mixed number by a fraction.
5.NF.4a	Identify the product $(a/b) \times q$ as a part of a partition of q into b equal parts using a visual fraction model.	Identify the product $(a/b) \times q$ as a part of a partition of q into b equal parts.	Interpret the product $(a/b) \times q$ as a part of a partition of q into b equal parts. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation.	Explain why the product $(a/b) \times q$ is a part of a partition of q into b equal parts and create a word problem for an equation given in the form $(a/b) \times q$.

Claim 3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.NF.4b	Identify the area of a rectangle with fractional side lengths that has been tiled with unit squares of the appropriate unit fraction side lengths. Identify the product of fractional side lengths to find areas of rectangles.	Calculate the area of a rectangle with fractional side lengths that has been tiled with unit squares of the appropriate unit fraction side lengths. Identify the product of fractional side lengths, using a visual model, to find areas of rectangles. Recognize that fraction products are rectangular areas.	Calculate the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles and represent fraction products as rectangular areas.	Given a rectangle with fractional side lengths, explain how tiling the rectangle with unit squares of the appropriate fractional side lengths and calculating the sum of area of those tiles is the same as multiplying the side lengths of the rectangle. Explain the connection between the product of two fractions and the area of a rectangle with side lengths equal to those fractions.
5.NF.5a	Recognize when a product will be either larger or smaller when multiplying two factors.	Interpret multiplication as scaling. Compare the size of the product to one factor based on the size of the other factor, without actually multiplying given a visual model.	Interpret multiplication as scaling. Compare the size of the product to one factor based on the size of the other factor, without actually multiplying (e.g., $1345 < 45$).	Interpret multiplication as scaling (resizing), by explaining how the size of a product compares to the size of one factor on the basis of the size of the other factor.
5.NF.6	Identify the solutions to problems in real-world contexts involving multiplication of fractions by using visual models.	Identify the solutions to problems in real-world contexts involving multiplication of fractions by using a variety of representations including equations and models.	Solve problems in real-world contexts involving multiplication of fractions, including mixed numbers, by using a variety of representations that include equations and models.	Create problems in real-world contexts involving multiplication of fractions, including mixed numbers, given a representation such as an equation or a model.
5.NF.7	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
5.NF.7a	Identify the quotient of a unit fraction by a non-zero whole number.	Compute the quotient of a unit fraction by a non-zero whole number.	Interpret division of a unit fraction by a non-zero whole number and compute such quotients. Use the relationship between multiplication and division to justify conclusions.	Use the relationship between multiplication and division to explain how to divide a unit fraction by a non-zero whole number.
5.NF.7b	Identify the quotient of a whole number by a unit fraction.	Compute the quotient of a whole number by a unit fraction.	Interpret division of a whole number by a unit fraction and compute such quotients. Use the relationship between multiplication and division to justify conclusions.	Use the relationship between multiplication and division to explain how to divide a whole number by a unit fraction.

Claim 3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.NF.7c	Identify the solutions to problems in real-world context involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions using visual models.	Identify the solutions to problems in real-world context involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions using a variety of representations.	Solve problems in real-world context involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions using a variety of representations.	Explain how to solve problems in real-world context involving division of unit fractions by nonzero whole numbers and division of whole numbers by unit fractions.

Measurement and Data <i>Student performance indicates the ability to...</i>				
Claim 4	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.MD.1	Identify the relative sizes of measurement units within one system of units which could include km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec, using a model.	Identify the relative sizes of measurement units within one system of units which could include km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.	Identify relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.	Identify and explain how different sizes of measurement units within one system of units relate to each other.
		Solve one- to two-step real-world problems requiring conversion among different-sized standard measurement units within a given measurement system.	Solve multi-step real-world problems requiring conversion among different-sized standard measurement units within a given measurement system.	Analyze multi-step real-world problems requiring conversion among different-sized standard measurement units within a given measurement system.
5.MD.2	Solve problems involving information in line plots that include comparing fractions.	Solve problems involving information in line plots that include adding or subtracting fractions.	Solve problems involving information in line plots that include fractions.	Interpret the data in line plots and solve multi-step real-world problems that include fractions.
5.MD.3	Identify the length, width, <u>or</u> height of a rectangular prism using unit cubes.	Identify the length, width, <u>and</u> height of a rectangular prism using unit cubes.	Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	Use unit cubes to identify and explain how to find the volume of a rectangular prism.
5.MD.4	Identify the length, width, or height of a rectangular prism by counting unit cubes using cubic cm, cubic inches, cubic feet, and improvised units.	Identify the length, width, and height of a rectangular prism by counting unit cubes using cubic cm, cubic inches, cubic feet, and improvised units.	Identify concepts of volume and relate volume to multiplication and to addition. Measure volumes by counting unit cubes, using cubic cm, cubic inches, cubic feet, and improvised units.	Use unit cubes to identify and explain how to find the volume using cubic cm, cubic inches, cubic feet, and improvised units of a rectangular prism.

Claim 4	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.MD.5a	Find the volume of a layer of a rectangular prism by counting the total number of unit cubes in one layer ($l \times w$).	Find the volume of a right rectangular prism by packing it with unit cubes.	<p>Identify concepts of volume and relate volume to multiplication and to addition.</p> <p>Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.</p> <p>Find the volume of a right rectangular prism by packing it with unit cubes and show that the volume is the same as would be found by multiplying the length, width, and height.</p>	Compare and contrast the methods of finding the volume using unit cubes and finding the volume using the equation $l \times w \times h$.
5.MD.5b	Apply the formulas $V = l(w)(h)$ or $V = (b)(h)$ for rectangular prisms to find volumes of right rectangular prisms with whole numbers.	Apply the formulas $V = l(w)(h)$ or $V = (b)(h)$ for rectangular prisms to find volumes of right rectangular prisms with whole numbers in mathematical problems.	Apply the formulas $V = l(w)(h)$ and $V = (b)(h)$ for rectangular prisms to find volumes of right rectangular prisms with whole numbers in the context of solving real-world and mathematical problems.	Justify how the manipulation of the length, width, or height impacts the overall volume of a rectangular prism.

Geometry *Student performance indicates the ability to...*

Claim 5	Below Proficient	Approaching Proficient	Proficient	Above Proficient
5.G.1	Identify the axes and the origin (0, 0) of a coordinate system. Identify the x - and y - coordinates of an ordered pair.	Describe a coordinate system as having two axes that intersect at the origin (0, 0). Identify an ordered pair and the x - and y -coordinates of an ordered pair.	Describe a coordinate system as perpendicular number lines, called axes, that intersect at the origin (0, 0). Identify a given point in the first quadrant of the coordinate plane using an ordered pair of numbers, called coordinates. Understand that the first number (x) indicates the distance traveled on the horizontal axis, and the second number (y) indicates the distance traveled on the vertical axis.	Describe a coordinate system. Identify points in the coordinate plane using coordinates. Explain that the x - coordinate indicates the distance traveled on the horizontal axis, and the y -coordinate indicates the distance traveled on the vertical axis.
5.G.2	Identify points graphed in the first quadrant of the coordinate plane.	Graph points in the first quadrant of the coordinate plane and identify the coordinate values of points in the context of the situation.	Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane and interpret coordinate values of points in the context of the situation.	Create real-world and mathematical problems that can be solved by graphing points in the first quadrant of the coordinate plane. Explain the meaning of the coordinate values of points in the context of the situation.
5.G.3	Identify attributes belonging to a category of two-dimensional figures.	Identify attributes belonging to a category of two-dimensional figures also belong to a subcategory of that category.	Recognize that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.	Explain why attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.
5.G.4	Identify two-dimensional figures based on properties limited to sides and angles.	Classify two-dimensional figures based on properties limited to sides and angles.	Classify two-dimensional figures in a hierarchy based on properties.	Draw or construct two-dimensional figures based on properties or classifications.