

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 *Student performance indicates the ability to...*

Claim 1	Below Proficient	Approaching Proficient	Proficient	Above Proficient
4.0A.1	Recognize that some multiplication equations can be considered comparisons.	Recognize multiplicative comparisons as multiplication equations.	Interpret multiplicative comparisons as multiplication equations.	Interpret and explain multiplicative comparisons as multiplication equations.
4.0A.2	Recognize multiplicative comparison word problems that require multiplication or division.	Identify multiplicative comparison word problems that require multiplication or division.	Identify and solve multiplicative comparison word problems that require multiplication or division.	Identify and solve multiplicative comparison multi-step word problems that require multiplication or division.
4.0A.3	<p>Solve word problems with whole numbers using two of the four operations.</p> <p>Recognize that remainders occur with division.</p> <p>Recognize that letters can represent unknown values in an equation.</p> <p>Assess the reasonableness of their solution but without a strategy.</p>	<p>Solve word problems with whole numbers using all four operations.</p> <p>Identify remainders in the context of problems.</p> <p>Recognize that letters can represent unknown values in a word problem.</p> <p>Assess the reasonableness of their solution using estimation or mental computation strategies.</p>	<p>Solve multistep word problems with whole numbers using all four operations.</p> <p>Interpret remainders in the context of problems.</p> <p>Represent word problems with equations that include letters for unknowns.</p> <p>Assess the reasonableness of their solution using estimation and mental computation strategies.</p>	<p>Solve and explain multistep word problems with whole numbers using all four operations.</p> <p>Interpret and explain remainders in the context of problems.</p> <p>Represent word problems with equations that include letters for unknowns and solve equations.</p> <p>Assess and explain the reasonableness of a solution using estimation and mental computation strategies.</p>

Claim 1	Below Proficient	Approaching Proficient	Proficient	Above Proficient
4.OA.3	List multiples of numbers from 1-100.	Identify factor pairs for whole numbers between 1 and 100.	Write factor pairs for whole numbers between 1 and 100.	Use factor pairs within the range of 1-100, multiples, and prime and composite distinctions to solve and explain real-world and contextual problems.
4.OA.4	State that whole numbers are a multiple of a one-digit number. Recognize if given whole numbers in the range 1-50 as either prime or composite.	Recognize that a given whole number is a multiple of a one-digit number. Recognize whole numbers in the range 1-100 as either prime or composite.	Recognize and determine whether a given whole number is a multiple of a one-digit number.	Explain how a whole number can be a multiple of another number.
4.OA.5	Recognize that number and shape patterns can follow a given rule. Recognize that repetitions within a number or shape pattern can occur that are not explicitly mentioned in the rule.	Describe a number or shape pattern that follows given rules. Identify repetition within a basic number or shape pattern that is not explicitly mentioned in the rule.	Generate number and shape patterns following given rules. Identify repetition within number and shape patterns that are not explicitly mentioned in the rule.	Generate and explain how number and shape patterns follow a given rule. Describe repetitions within number and shape patterns that are not explicitly mentioned in the rule.

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

Claim 2	Below Proficient	Approaching Proficient	Proficient	Above Proficient
4.NBT.1	Recognize that the value of a digit in a multi-digit whole number depends on its position within the number.	Recognize that in a multi-digit whole number, a digit in one place represents more than what it represents in the place to its right for whole numbers less than 1,000,000.	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right for whole numbers less than 1,000,000.	Explain that in a multi-digit whole number, a digit in one place represents a value x times what it represents in another place for whole numbers less than 1,000,000.
4.NBT.2	Identify three-digit whole numbers using base-ten numerals and number names. Compare two three-digit numbers based on meanings of the digits in each place.	Identify multi-digit whole numbers using base-10 numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place.	Read and write multi-digit whole numbers using base-10 numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	Read, write, and order multi-digit whole numbers using base-10 numerals, number names, and expanded form. Compare more than two multi digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Claim 2	Below Proficient	Approaching Proficient	Proficient	Above Proficient
4.NBT.3	Round multi-digit whole numbers up to the hundreds place.	Round multi-digit whole numbers up to the hundred thousands place.	Use place value to round multi-digit whole numbers to any place limited to whole numbers less than or equal to 1,000,000.	Explain how place value is used to round multi-digit whole numbers to any place limited to whole numbers less than or equal to 1,000,000.
4.NBT.4	Fluently add and subtract multi-digit whole numbers using strategies and algorithms based on the relationship between addition and subtraction of numbers less than or equal to 1,000,000.	Fluently add and subtract multi-digit whole numbers using strategies and algorithms based on place value and/or the relationship between addition and subtraction of numbers less than or equal to 1,000,000.	Accurately and fluently add and subtract multi-digit whole numbers using the standard algorithm for numbers less than or equal to 1,000,000.	Explain and justify the use of the standard algorithm to fluently add and subtract multi-digit whole numbers less than or equal to 1,000,000.
4.NBT.5	Multiply a one-digit whole number by a one-digit whole number (0-9).	Multiply a whole number of up to three digits (0 - 999) by a one-digit whole number. Multiply one-digit by two-digit numbers (10 - 99). Illustrate the calculation by using equations, rectangular arrays, and/or area models.	Multiply a whole number of up to four digits (0 - 9,999) by a one-digit whole number. Multiply two two-digit numbers (10 - 99). Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Compare and contrast strategies used when multiplying a whole number up to four digits (0 - 9,999) by a one-digit whole number. Compare and contrast strategies used when multiplying two two-digit numbers (10 - 99). Justify the use of equations by using rectangular arrays and/or area models.
4.NBT.6	Calculate whole number quotients and remainders with up to two-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division given a model. Illustrate the calculation by using either equations, rectangular arrays, or area models.	Calculate whole number quotients and remainders with up to three-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using either equations, rectangular arrays, or area models.	Calculate whole number quotients and remainders with up to three- and four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Explain and justify the strategy used to find whole number quotients and remainders with up to four-digit dividends and one-digit divisors. Analyze and compare the effectiveness of different strategies in solving multi-step problems.

Fractions

Claim 3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
4.NF.1	Identify equivalent fractions, limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Generate equivalent fractions, limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Identify and generate equivalent fractions by multiplying numerator and denominator by the same number using visual models and denominators from the given set limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Construct and justify equivalent fractions in complex contexts using visual models and explaining relationships for all denominators in the set.
4.NF.2	<p>Given a visual model, compare two fractions with different numerators and same denominators (e.g., by creating common denominators or numerators and by comparing to a benchmark fraction).</p> <p>a. Model that comparisons are valid only when the two fractions refer to the same size whole.</p> <p>b. Limited to fractions with a denominator of 2, 4, 8, and 100.</p>	<p>Given a visual model, compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators and by comparing to a benchmark fraction).</p> <p>a. Model that comparisons are valid only when the two fractions refer to the same size whole.</p> <p>b. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.</p>	<p>Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators and by comparing to a benchmark fraction).</p> <p>a. Recognize that comparisons are valid only when the two fractions refer to the same size whole.</p> <p>a. b. Record the results of comparisons with symbols >, =, or <, limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.</p>	<p>Justify the comparison of two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators and by comparing to a benchmark fraction).</p> <p>a. Demonstrate that comparisons are valid only when the two fractions refer to the same size whole.</p> <p>b. Record the results of comparisons with symbols >, =, or < with any denominator.</p>
4.NF.3a	Add fractions with common denominators.	Add and subtract fractions with common denominators using a model or visual.	Add and subtract fractions with common denominators.	Add and subtract fractions with different denominators.
4.NF.3b	Identify a correct decomposition of a fraction into a sum of fractions with the same denominator in one way (e.g., $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$).	Identify a correct decomposition of a fraction into a sum of fractions with the same denominator in more than one way (e.g., $\frac{3}{8} = \frac{2}{8} + \frac{1}{8}$ or $2\frac{1}{8} = 1 + 1 + \frac{1}{8}$).	Decompose a fraction into a sum of fractions with the same denominator in more than one way (e.g., $2\frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$).	Explain how to decompose a fraction into a sum of fractions with the same denominator in more than one way
4.NF.3c	Add mixed numbers with like denominators where regrouping is not necessary.	Add and subtract mixed numbers with common denominators where regrouping is not necessary.	Add and subtract mixed numbers with like denominators.	Explain how to add and subtract mixed numbers with common denominators.
4.NF.3d	Solve word problems involving addition of fractions, without regrouping, referring to the same whole and having like denominators.	Solve word problems involving addition and subtraction of fractions, without regrouping, referring to the same whole and having like denominators.	Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	Solve word problems involving addition and subtraction of fractions referring to the same whole but having different denominators.

Claim 3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
4.NF.4a	Identify the product when a whole number is multiplied by a unit fraction. In general, $a/b = a \times 1/b$. Limited to fractions with a denominator of 2, 3, 4, 5, 10, and 100, or where neither numerator nor denominator is correct.	Determine the product when a whole number is multiplied by a unit fraction. In general, $a/b = a \times 1/b$. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Identify a fraction a/b as a multiple of a unit fraction $1/b$. In general, $a/b = a \times 1/b$. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Explain why a fraction a/b is a multiple of a unit fraction $1/b$. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.
4.NF.4b	Identify the product when a whole number is multiplied by a fraction. In general, $n \times a/b = (n \times a)/b$. Limited to fractions with a denominator of 2, 3, 4, 5, 10, and 100, or where neither numerator nor denominator is correct.	Determine the product of the numerator or the denominator, when a whole number is multiplied by a fraction. In general, $n \times a/b = (n \times a)/b$. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Identify a multiple of a/b as a multiple of a unit fraction $1/b$ and use this understanding to multiply a whole number by a fraction. In general, $n \times a/b = (n \times a)/b$. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Justify a multiple of a/b as a multiple of a unit fraction $1/b$ and use this understanding to multiply a whole number by a fraction. In general, $n \times a/b = (n \times a)/b$. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.
4.NF.4c	Identify the solution to word problems involving multiplication of a whole number by a fraction. Limited to fractions with a denominator of 2, 3, 4, 5, 10, and 100, or where neither numerator nor denominator is correct.	Determine the solution to word problems involving multiplication of a whole number by a fraction. Limited to fractions with a denominator of 2, 3, 4, 5, 10, and 100, or where either the numerator or denominator is correct, but not both.	Solve word problems involving multiplication of a whole number by a fraction. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Create word problems involving multiplication of a whole number by a fraction. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.
4.NF.5	Identify equivalent fractions, one with denominator 10 and one with denominator 100. For example, identify $3/10$ as equivalent to $30/100$. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Identify equivalent fractions, one with denominator 10 and one with denominator 100. Identify the sum of two fractions with respective denominators 10 (tenths) and 100 (hundredths). For example, identify $3/10$ as equivalent to $30/100$, and identify that $3/10 + 4/100 = 34/100$. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Express a fraction with denominator 10 as an equivalent fraction with denominator 100 and use this technique to add two fractions with respective denominators 10 (tenths) and 100 (hundredths). For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$. Limited to fractions with a denominator of 2, 3, 4, 5, 6, 8, 10, 12, and 100.	Express a fraction with denominator 10 as an equivalent fraction with denominator a multiple of 10 and use this technique to add two fractions with the respective denominators. For example, express $3/10$ as $300/1000$, and add $3/10 + 40/1000 = 340/1000$.
4.NF.6	Identify decimal notation for fractions with denominators 10 (tenths) or 100 (hundredths).	Identify decimal notation for fractions with denominators 10 (tenths) or 100 (hundredths) and locate these decimals on a number line.	Use decimal notation for fractions with denominators 10 (tenths) or 100 (hundredths) and locate these decimals on a number line.	Use decimal notation for fractions and mixed numbers with denominators a multiple of 10. Explain the location of these decimals on a number line.

Claim 3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
4.NF.7	Compare two decimals, referring to the same whole, to hundredths.	Compare two decimals, referring to the same whole, to hundredths. Record the results of comparisons with the symbols $>$, $=$, or $<$.	Compare two decimals to hundredths by reasoning about their size. Understand that comparisons are valid only when the two decimals refer to the same whole. Record results of comparisons with symbols $>$, $=$, or $<$.	Compare two decimals to hundredths by reasoning about their size. Explain why comparisons are valid only when the two decimals refer to the same whole. Record results of comparisons with symbols $>$, $=$, or $<$.

Measurement and Data *Student performance indicates the ability to...*

Claim 4	Below Proficient	Approaching Proficient	Proficient	Above Proficient
4.MD.1	<p>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.</p> <p>Within a single system of measurement, identify measurements in a larger unit in terms of a smaller unit given a model.</p>	<p>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.</p> <p>Within a single system of measurement, identify measurements in a larger unit in terms of a smaller unit.</p>	<p>Identify relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.</p> <p>Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.</p>	<p>Identify and explain how different sizes of measurement units within one system of units relate to each other.</p> <p>Within a single system of measurement, explain how to convert measurements from a larger unit to a smaller unit.</p> <p>Generate a conversion table for measurements within one system of units.</p>
4.MD.2	Use the four operations to identify solutions to word problems and problems in real-world context involving distances, intervals of time (hr, min, sec), liquid volumes, masses of objects, and money, including decimals.	Use the four operations to identify solutions to word problems and problems in real-world context involving distances, intervals of time (hr, min, sec), liquid volumes, masses of objects, and money, including decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	Use the four operations to solve word problems and problems in real-world context involving distances, intervals of time (hr, min, sec), liquid volumes, masses of objects, and money, including decimals and problems involving fractions with like denominators, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	Explain how to use the four operations to solve word problems and problems in real-world context involving distances, intervals of time (hr, min, sec), liquid volumes, masses of objects, and money, including decimals and problems involving fractions with like denominators, and problems that require expressing measurements given in a smaller unit in terms of a larger unit.
Claim 4	Below Proficient	Approaching Proficient	Proficient	Above Proficient

4.MD.2	Represent measurement quantities using number lines that feature a measurement scale.	Represent measurement quantities using a variety of representations, including number lines that feature a measurement scale.	Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	Represent measurement quantities using a variety of representations, including number lines that feature a measurement scale.
4.MD.3	Identify the area and perimeter for rectangles in mathematical problems.	Identify the area and perimeter for rectangles in mathematical problems and problems in real-world contexts.	Apply the area and perimeter formulas for rectangles in mathematical problems and problems in real-world contexts including problems with unknown side lengths.	Explain the difference between the area and perimeter formulas for rectangles. Use the area and perimeter formulas to determine unknown side lengths of a rectangle.
4.MD.4	Identify a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$ & $\frac{1}{4}$). Solve problems involving addition of fractions by using information presented in line plots ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$).	Identify a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$).	Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	Make a line plot to display a data set of measurements in fractions of a unit including mixed numbers. Create problems involving addition and subtraction of fractions by using information presented in line plots.
4.MD.5	Recognize that a “one-degree angle” turns through $\frac{1}{360}$ of a circle. Recognize that an “n degree angle” turns through $n / 360$ of a circle.	Identify a one-degree angle, with its common endpoint at the center of a circle, as being $\frac{1}{360}$ of the circle. Identify an “n degree angle,” with its common endpoint at the center of a circle, as being $n / 360$ of the circle.	Recognize angles as geometric shapes formed when two rays share a common endpoint and understand concepts of angle measurement. Identify an angle is measured with reference to a circle with its center at the common endpoint of the rays by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle” and can be used to measure angles. Identify an angle that turns through n one-degree angles is said to have an angle measure of n degrees.	Explain how an angle is measured with reference to a circle with its center at the common endpoint of the rays and how the angle measure is the same as the fraction of the circular arc between the points where the two rays intersect the circle. Explain why an angle that turns through n one-degree angles is said to have an angle measure of n degrees.
4.MD.6	Identify angle measures in whole number degrees using a protractor, when one of the rays is horizontal.	Identify angle measures in whole number degrees using a protractor. Add a second ray to sketch angles of specified measure when given a horizontal ray.	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	Measure angles in whole-number degrees using a protractor, including when the angle does not have a horizontal ray. Sketch angles of specified measure.

Claim 4	Below Proficient	Approaching Proficient	Proficient	Above Proficient
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4.MD.7	Solve addition problems to find unknown angles on a diagram within mathematical problems as well as problems in real-world contexts.	Solve addition and subtraction problems to find unknown angles on a diagram within mathematical problems as well as problems in real-world contexts.	Recognize angle measures as additive. (When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts.) Solve addition and subtraction problems to find unknown angles on a diagram within mathematical problems as well as problems in real-world contexts.	Create addition and subtraction problems, mathematical problems as well as problems in real-world contexts, for angles represented on a diagram.
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Geometry *Student performance indicates the ability to...*

Claim 5	Below Proficient	Approaching Proficient	Proficient	Above Proficient
4.G.1	Identify points, lines, line segments, rays, angles, and lines in two-dimensional figures.	Identify and draw points, lines, line segments, rays, angles, and perpendicular and parallel lines in two-dimensional figures.	Draw points, line segments, rays, perpendicular, and parallel lines. Draw angles (right, acute, obtuse). Identify points, line segments, rays, angles, perpendicular and parallel lines in two-dimensional figures.	Explain characteristics that define points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.
4.G.2	Identify two-dimensional figures based on the presence or absence of parallel or perpendicular lines.	Identify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.	Classify two-dimensional figures into more than one category based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.
4.G.3	Identify a line of symmetry for a two-dimensional figure.	Identify line-symmetric figures and draw lines of symmetry.	Recognize and draw a line of symmetry for a two-dimension figure as a line across the figure such that the figure can be folded along the line into matching parts.	Explain that a line of symmetry for a two-dimensional figure is a line across the figure such that the figure can be folded along the line into matching parts. Draw line-symmetric figures.