

# Grade 5 Math Proficiency Scale-T1

	<b>Novice “1”</b>	<b>Approaching “2”</b>	<b>Proficient “3”</b>	<b>Advanced “4”</b>
<b>Communication MP 3 &amp; 6</b>	Participates in asking questions and sharing ideas, including the construction of arguments.	Asks questions and explains ideas, constructs viable arguments.	Asks questions and explains ideas clearly, constructs viable arguments and critiques the reasoning of others, explains the critique with clarity and use of some related academic vocabulary.	Asks questions and explains ideas clearly with details, constructs viable arguments, and critiques the reasoning of others using academic related vocabulary, explains the critique using insight and clarity.
<b>Critical Thinking MP 1, 2, 4, 5, 7, 8</b>	Participates in creating questions, gathering information, and understanding connections; and looking for structure to make sense of problems.	Creates basic questions, gathers information, and understands connections; and begins to reason abstractly and quantitatively to look for structure and make sense of problems, models with mathematics, and perseveres in finding a solution.	Creates questions, gathers information, and understands connections; and reasons abstractly and quantitatively to find structure and make sense of problems, persevere, models and solve problems with precision.	Creates questions, gathers information, and uses connections between systems, and patterns including repeated reasoning to find structure, make sense, persevere, model, and solve problems with precision; <u>and</u> reasons abstractly and quantitatively
<b>Geometry</b>			This category is not adequately assessed in this trimester.	
<b>Measurement and Data 5.MD.3 – 5.MD.5a</b>	Practices recognizing and calculating volume of a solid figure by counting the cubes it takes to fill it, with no gaps or overlaps.	Identifies volume as the amount of space in a three-dimensional object, measured in cubic units; <u>and</u> measures the volume of a solid figure by counting the cubes it takes to fill it, with no gaps or overlaps.	Calculates and understands volume as the amount of space in a three-dimensional object, measured in cubic units; <u>and</u> consistently measures the volume of a solid figure by counting the cubes it takes to fill it, with no gaps or overlaps.	Understands that volume is the amount of space in a three-dimensional object, measured in cubic units; <u>and</u> measures the volume of a solid figure by counting the cubes it takes to fill it, with no gaps or overlaps; and uses in-depth inferences and application of mathematics.

<b>Number and Operations in Base Ten</b> <b>5.NBT.6</b>	Practices using models and strategies to multiply and divide with 3-digit numbers, <u>and</u> reading, writing, comparing, and rounding 4-digit numbers.	Uses models and strategies to multiply 3-digit numbers by 2-digit numbers and divide 3-digit numbers by 2-digit numbers, using equations or labeled sketches to explain strategies.	Uses models and strategies to divide 2- and 3-digit numbers by 2-digit numbers, with and without remainders. (Students are not expected to master the division standard algorithm until sixth grade)	Uses models and strategies to divide 2- and 3-digit numbers by 2-digit numbers, with and without remainder; and uses in-depth inferences and application of mathematics.
<b>Number and Operations in Fractions</b> <b>5.NF.1 – 5.NF.2</b>	Practices comparing fractions and finding equivalent fractions using a visual model; <u>and</u> solving story problems that involve adding and subtracting fractions with like denominators; <u>and</u> writing fractions with denominators of 10 or 100 in decimal notation.	Compares fractions and finds equivalent fractions; <u>and</u> solves story problems that involve multiplying a fraction by a whole number; <u>and</u> writes fractions with denominators of 10 or 100 in decimal notation; <u>and</u> converts a fraction with a denominator of 10 to a fraction with a denominator of 100; <u>and</u> uses this to add tenths and hundredths.	Adds and subtracts fractions with unlike denominators; <u>and</u> uses models and strategies to multiply a whole number by a fraction; <u>and</u> estimates the answers to story problems, assessing the reasonableness.	Adds and subtracts fractions with unlike denominators; <u>and</u> uses models and strategies to multiply a whole number by a fraction; <u>and</u> estimates the answers to story problems, assessing the reasonableness; and uses in-depth inferences and application.
<b>Operations &amp; Algebraic Thinking</b> <b>5.OA.1 – 5.OA.2</b>	Practices multiplication facts through 100; <u>and</u> identifying and generating patterns following a basic rule; <u>and</u> solving multi-step story problems using the 4 operations; <u>and</u> using mental math, estimation, or rounding to determine if answers are reasonable.	Identifies and generates patterns of numbers or shapes in a sequence; <u>and</u> writes equations with an unknown quantity; <u>and</u> solves multi-step story problems using the 4 operations; using mental math, estimation, or rounding to determine whether answers to problems are reasonable.	Demonstrates fluency with multiplication and division facts through 100; <u>and</u> writes and evaluates numerical expressions with parentheses, indicating the order of operations; <u>and</u> writes and interprets expressions without evaluating them.	Demonstrates fluency with multiplication and division facts through 100; <u>and</u> writes and evaluates numerical expressions with parentheses, indicating the order of operations; <u>and</u> writes and interprets expressions without evaluating them; <u>and</u> uses in-depth inferences and application.

## Grade 5 Math Proficiency Scale-T2

	<b>Novice “1”</b>	<b>Approaching “2”</b>	<b>Proficient “3”</b>	<b>Advanced “4”</b>
<b>Communication MP 3 &amp; 6</b>	Participates in asking questions and sharing ideas, including the construction of arguments, and working to make sense of the mathematical thinking of others.	Asks questions and explains ideas, constructs viable arguments and work to make sense of the mathematical thinking of others.	Asks questions and explains ideas clearly, constructs viable arguments and critiques the reasoning of others, explains the critique with clarity and use of some related academic vocabulary.	Asks questions and explains ideas clearly with details, constructs viable arguments, and critiques the reasoning of others using academic related vocabulary, explains the critique using insight and clarity.
<b>Critical Thinking MP 1, 2, 4, 5, 7, 8</b>	Participates in creating questions, gathering information, and understanding connections; and looking for structure to make sense of problems.	Creates basic questions, gathers information, and understands connections; and begins to reason abstractly and quantitatively to look for structure and make sense of problems, models with mathematics, and perseveres in finding a solution.	Creates questions, gathers information, and understands connections; and reasons abstractly and quantitatively to find structure and make sense of problems, perseveres, models and solve problems with precision.	Creates questions, gathers information, and uses connections between systems, and patterns including repeated reasoning to find structure, make sense, persevere, model, and solve problems with precision; <u>and</u> reasons abstractly and quantitatively
<b>Geometry</b>			This category is not adequately assessed in this trimester.	
<b>Measurement and Data 5.MD.1 – 5.MD.2</b>	Practices calculating volume; <u>and</u> converting among different-sized measurement units within a system and solving related word problems; <u>and</u> using a line plot to show a data set of measurements in fractions of a unit.	Calculates volume; <u>and</u> converts among different-sized measurement units within a system and solves related word problems; <u>and</u> uses a line plot to show a data set of measurements in fractions of a unit.	Converts among different-sized measurement units within standard and metric systems and solves multi-step related word problems; <u>and</u> makes a line plot to show a data set of measurements in fractions of a unit.	Converts among different-sized measurement units within standard and metric systems and solves multi-step related word problems; <u>and</u> makes a line plot to show a data set of measurements in fractions of a unit; and uses in-depth inferences and application.

<p style="text-align: center;"><b>Number and Operations in Base Ten</b> 5.NBT.1 – 5.NBT.4; 5.NBT.5</p>	<p>Practices using models and strategies to multiply and divide with 3-digit numbers, <u>and</u> reading, writing, comparing, and rounding 4-digit numbers; <u>and</u> reading and writing decimals to hundredths using numbers, words, and expanded notation; <u>and</u> recognizing some patterns, comparing decimal numbers, and rounding decimals to the nearest ones, and tenths.</p>	<p>Uses strategies and/or the standard algorithm to multiply multi-digit whole numbers; <u>and</u> reads and writes decimals to hundredths using numbers, words, and expanded notation; <u>and</u> explains some patterns, compares decimal numbers, and rounds decimals to the nearest ones, and tenths; <u>and</u> uses models to compute with decimals.</p>	<p>Uses the standard algorithm to multiply multi-digit whole numbers; <u>and</u> reads and writes decimals to thousandths using numbers, words, and expanded notation; <u>and</u> explains patterns (including powers of 10 &amp; the placement of the decimal), compares decimal numbers, and rounds decimals to the nearest ones, tenths, and hundredths; and uses models and strategies to compute with decimals.</p>	<p>Uses the standard algorithm to multiply multi-digit whole numbers; <u>and</u> reads and writes decimals to thousandths using numbers, words, and expanded notation; <u>and</u> explains patterns, compares decimal numbers, and rounds decimals to the nearest hundredth; and uses models and strategies to compute with decimals.; using in-depth inferences and application of mathematics.</p>
<p style="text-align: center;"><b>Number and Operations in Fractions</b> 5.NF.4 – 5.NF.5</p>	<p>Practices adding and subtracting fractions with unlike denominators; <u>and</u> using models and strategies to multiply a whole number by a fraction; <u>and</u> multiplying to find area; and recognizing the size of a product is a result of the two factors.</p>	<p>Adds and subtracts fractions with unlike denominators; <u>and</u> uses models and strategies to multiply a whole number by a fraction; <u>and</u> multiplies to find area; and recognizes the size of a product is a result of the two factors.</p>	<p>Uses models and strategies to multiply fractions; and multiplies fractional side lengths to find area; <u>and</u> explains why a number multiplied by a fraction less than 1 results in a product smaller than the given number, and why a number multiplied by a fraction greater than 1 results in a product greater than the given number.</p>	<p>Uses models and strategies to multiply fractions; and multiplies fractional side lengths to find area; <u>and</u> interpret multiplication as scaling (5.NF.5); and uses in-depth inferences and application of mathematics.</p>

<p style="text-align: center;"><b>Operations &amp; Algebraic Thinking</b> 5.OA.1 – 5.OA.2</p>	<p>Practices multiplication facts through 100; <u>and</u> writing and evaluating numerical expressions with parentheses, recognizing the use of order of operations.</p>	<p>Demonstrates fluency with some multiplication and division facts through 100; <u>and</u> writes and evaluates numerical expressions with parentheses, indicating the order of operations.</p>	<p>Demonstrates fluency with multiplication and division facts through 100; <u>and</u> writes and evaluates numerical expressions with parentheses, indicating the order of operations; <u>and</u> writes and interprets expressions without evaluating them.</p>	<p>Demonstrates fluency with multiplication and division facts through 100; <u>and</u> writes and evaluates numerical expressions with parentheses, indicating the order of operations; <u>and</u> writes and interprets expressions without evaluating them; using in-depth inferences and application.</p>
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# Grade 5 Math Proficiency Scale-T3

	<b>Novice “1”</b>	<b>Approaching “2”</b>	<b>Proficient “3”</b>	<b>Advanced “4”</b>
<b>Communication MP 3 &amp; 6</b>	Participates in asking questions and sharing ideas, including the construction of arguments, and working to make sense of the mathematical thinking of others.	Asks questions and explains ideas, constructs viable arguments, and work to make sense of the mathematical thinking of others.	Asks questions and explains ideas clearly, constructs viable arguments and critiques the reasoning of others, explains the critique with clarity and use of some related academic vocabulary.	Asks questions and explains ideas clearly with details, constructs viable arguments, and critiques the reasoning of others using academic related vocabulary, explains the critique using insight and clarity.
<b>Critical Thinking MP 1, 2, 4, 5, 7, 8</b>	Participates in creating questions, gathering information, and understanding connections; and looking for structure to make sense of problems.	Creates basic questions, gathers information, and understands connections; and begins to reason abstractly and quantitatively to look for structure and make sense of problems, models with mathematics, and perseveres in finding a solution.	Creates questions, gathers information, and understands connections; and reasons abstractly and quantitatively to find structure and make sense of problems, persevere, models and solve problems with precision.	Creates questions, gathers information, and uses connections between systems, and patterns including repeated reasoning to find structure, make sense, persevere, model, and solve problems with precision; <u>and</u> reasons abstractly and quantitatively
<b>Geometry 5.G.1 – 5.G.4</b>	Practices identifying the x and y coordinates of a given point in a coordinate plane; <u>and</u> graphing points in the first quadrant of the coordinate plane; <u>and</u> classifying two-dimensional shapes.	Identifies the x and y coordinates of a given point in a coordinate plane; <u>and</u> classifies two-dimensional shapes and understands that the attributes of a category belong to all the subcategories.	Identifies the x and y coordinates of a given point in a coordinate plane; <u>and</u> graphs points in the first quadrant of the coordinate plane, describes the meaning of the values of coordinate points based on the context of a problem; <u>and</u> classifies two-dimensional shapes and understands that the attributes of a category belong to all the subcategories.	Identifies the x and y coordinates in a coordinate plane; <u>and</u> graphs points in the first quadrant, and uses context of the problem to interpret the meaning of the values of coordinate points; <u>and</u> classifies two-dimensional shapes in a hierarchy based on properties; and uses in-depth inferences and application of mathematics.

<p style="text-align: center;"><b>Measurement and Data</b> 5.MD.3 – 5.MD.5</p>	<p>Practices using the formulas for calculating volume to find the volume of rectangular prisms;</p>	<p>Uses the volume formulas to find the volume of some rectangular prisms; <u>and</u> finds the volume of a simple solid figure composed of two or more non-overlapping rectangular prisms.</p>	<p>Uses the volume formulas for to find the volume of rectangular prisms; <u>and</u> finds the volume of a solid figure composed of two or more non-overlapping rectangular prisms.</p>	<p>Uses volume formulas to find the volume of rectangular prisms; <u>and</u> recognizes volume as additive: <u>and</u> uses in-depth inferences and application of mathematics.</p>
<p style="text-align: center;"><b>Number and Operations in Base Ten</b> 5.NBT.1 - 5.NBT.4; 5.NBT.5- 5.NBT.7</p>	<p>Practices using the standard algorithm to multiply whole numbers; <u>and</u> using strategies to find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors; <u>and</u> reading and writing decimals to hundredths and some to the thousandths using numbers, words, and expanded notation; <u>and</u> recognizing patterns, comparing decimal numbers, and uses models and strategies to compute with decimals</p>	<p>Uses the standard algorithm to multiply some multi-digit whole numbers; <u>and</u> uses strategies to find whole-number quotients of whole numbers with up to four-digit dividends and one-digit divisors; <u>and</u> reads and writes decimals to hundredths and some to the thousandths using numbers, words, and expanded notation; <u>and</u> explains patterns, compares some decimal numbers, and rounds decimals to the nearest hundredth; and uses models and strategies to compute with decimals and recognizes 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 to its left.</p>	<p>Uses the standard algorithm to multiply multi-digit whole numbers; <u>and</u> uses strategies to find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors; <u>and</u> reads and writes decimals to thousandths using numbers, words, and expanded notation; <u>and</u> explains patterns, compares decimal numbers, and rounds decimals to the nearest hundredth; and uses models and strategies to compute with decimals and 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 to its left.</p>	<p>Uses the standard algorithm to multiply multi-digit whole numbers; <u>and</u> uses strategies to find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors; <u>and</u> reads and writes decimals to thousandths using numbers, words, and expanded notation; <u>and</u> explains patterns, compares decimal numbers, and rounds decimals to the nearest hundredth; <u>and</u> uses models and strategies to compute with decimals; and uses in-depth inferences and application of mathematics.</p>

<p style="text-align: center;"><b>Number and Operations in Fractions</b> 5.NF.2 – 5.NF.7</p>	<p>Practices using models and strategies to multiply fractions; and multiplying fractional side lengths to find area; <u>and</u> solving basic story problems involving multiplication of fractions and mixed numbers.</p>	<p>Uses models and strategies to multiply fractions; <u>and</u> solves basic story problems involving multiplication of fractions and mixed numbers; <u>and</u> multiplies fractional side lengths to find area; <u>and</u> uses models and strategies to divide fractions; <u>and</u> solves some story problems that involve dividing a unit fraction by a whole number and vice versa.</p>	<p>Solves story problems involving multiplication of fractions and mixed numbers; <u>and</u> uses models and strategies to divide fractions; <u>and</u> solves story problems that involve dividing a unit fraction by a whole number and vice versa.</p>	<p>Solves story problems involving multiplication of fractions and mixed numbers; <u>and</u> uses models and strategies to divide fractions; <u>and</u> solves story problems that involve dividing a unit fraction by a whole number and vice versa; <u>and</u> uses in-depth inferences and application of mathematics.</p>
<p style="text-align: center;"><b>Operations &amp; Algebraic Thinking</b> 5.OA.1 – 5.OA.3</p>	<p>Solves multiplication and division facts through 100 with strategies; <u>and</u> practices generating two number patterns given two different rules and graphing both; <u>and</u> writing and evaluating numerical expressions with parentheses.</p>	<p>Demonstrates fluency with some multiplication and division facts through 100 and uses efficient strategies for the others; <u>and</u> generates two number patterns given two different rules, and graphs both; <u>and</u> writes and evaluates some numerical expressions with parentheses, indicating the order of operations.</p>	<p>Generates two number patterns given two different rules, and graphs both; <u>and</u> demonstrates fluency with multiplication and division facts through 100; <u>and</u> writes and evaluates numerical expressions with parentheses, indicating the order of operations.</p>	<p>Generates two number patterns given two different rules, and graphs both; <u>and</u> applies fluency of multiplication and division to related problems; <u>and</u> applies order of operations when writing and evaluating numerical expressions with parentheses; <u>and</u> uses in-depth inferences and application.</p>