Grade 5 Mathematics Mastery Assessment

Approaching Expectations (0-30)	**Fifth-grade students performing at the ***Approaching Expectations*** level should show a basic understanding of the mathematical concepts and procedures.** Fifth-graders performing at the ***Approaching Expectations*** level should be able to: **MSGE.OA** • Interpret and solve single-step word problems by multiplying and dividing with whole-number factors, products, dividends, divisors, and quotients • Find an unknown in a multiplication equation, and extend the terms of an arithmetic pattern • Write simple numerical expressions; use a set of grouping symbols, and identify a pattern based on a rule **MSGE.NBT** • Add, subtract and multiply multi-digit numbers and decimals; and read, write, and compare decimals to tenths • Multiply and divide by powers of ten • Find two digit dividends or divisors • Use place value to compare numbers and recognize increasing and decreasing place value • Read and write numbers and use expanded form **MSGE.NF** • Understand a unit fraction as an equal part of one whole and represent unit fractions on a number line • Compare fractions with like numerators or like denominators • Identify unit fractions • Identify tenths and hundredths, both as fractions and as decimals, using visual models and a number line • Add or subtract fractions with like and unlike denominators and solve single-step word problems • Multiply fractions by whole numbers **MSGE.MD** • Convert units of measurement from larger to smaller units using multiplication • Find the area of rectangles • Identify volume as an attribute of three-dimensional objects by counting cubes or using the volume formula **MSGE.G** • Recognize that shapes fit into different categories and partition regular polygons into regions of equal areas • Identify ordered pairs on the coordinate plane

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Meets Expectations (31-39)	**Fifth-grade students performing at the *Meets Expectations* level should consistently apply integrated procedural knowledge and conceptual understanding to problem solving.** Fifth-graders performing at the ***Meets Expectations*** level should be able to : **MSGE.OA** • Interpret whole-number products, quotients, expressions and equations • Solve multi-step word problems using all four operations • Find factor pairs • Write, evaluate, and interpret numerical expressions using parentheses, brackets, or braces • Generate two numerical patterns from a rule and identify the corresponding terms, using an input/output table • Graph ordered pairs on a coordinate plane • Use strategies to assess the reasonableness of answers including rounding **MSGE.NBT** • Add, subtract, and multiply up to a three digit number and decimals to the hundredths • Find whole-number dividends up to four digits • Represent numbers in expanded form • Recognize and use whole-number exponents and patterns to denote powers of ten • Use and recognize the directional characteristics of place value; read, write, and compare decimals to thousandths **MSGE.NF** • Understand and use fraction equivalence; recognize fractional equivalence using a visual model; identify unit fractions that compose fractions with numerators and find equivalent fractions using tenths and hundredths and compare two decimals • Add, subtract and multiply fractions and mixed numbers; represent division of fractions by dividing unit fractions by whole numbers and dividing whole numbers by unit fractions • Solve word problems with addition, subtraction, multiplication and division of fractions; solve problems with areas of rectangles with fractional side lengths

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Meets Expectations (31-39)	**MSGE.MD** • Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit • Apply the area and perimeter formulas for rectangles in real world and mathematical problems • Recognize volume as an attribute of solid figures and understand concepts and calculate volume measurement **MSGE.G** • Partition shapes into parts with equal areas; express the area of each part as a unit fraction of the whole • 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 • Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines; identify these in two-dimensional figures

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Beyond Expectations (40-45)	**Fifth-grade students performing at the ***Beyond Expectations*** level should apply integrated procedural knowledge and conceptual understanding to complex and non-routine real-world problems.** Fifth-graders performing at the ***Beyond Expectations*** level should be able to: **MSGE.OA** • Interpret products, quotients and equations • Solve multi-step word problems using all four operations, apply multiple properties of operations to multiply and divide, find unknowns in equations, represent division in terms of unknown factors • Predict number and shape patterns that follow a given rule • Solve multistep word problems by writing, evaluating, and interpreting numerical expressions with two or more sets of grouping symbols • Generate patterns and explain the corresponding relationships on an input/output table • Graph ordered pairs on a coordinate grid and explain data displayed on a coordinate grid **MSGE.NBT** • Recognize that each place value, left to right, is ten times the one before it, and recognize the ascending and descending characteristics of place value • Round to specific whole-number place values and decimals; use place value to symbolically order and compare numbers; round to specified place values; and explain whole number patterns • Read, write, and compare decimals, including expanded form; and compare three or more decimals to the thousandths • Add, subtract, multiply, and divide multi-digit numbers and decimals fluently; multiply multiples of ten by each other **MSGE.NF** • Understand and represent fraction equivalence and comparisons; order fractions symbolically, represent and decompose fractions as a sum of unit fractions • Represent and explain multiplication of fractions by whole numbers, and order three or more decimals from least to greatest or greatest to least • Add, subtract, multiply and divide fractions and mixed numbers and solve multi-step word problems • Solve multistep problems with areas of rectangles with fractional side lengths; understand, interpret, and represent multiplication as scaling with respect to fractions > 1 and < 1

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Beyond Expectations (40-45)	**MSGE.MD** • Use the four operations to solve word problems involving distances, intervals of time, money, liquid volumes, masses of objects, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit • Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale • Apply the area, perimeter and volume formulas for rectangles in real world and mathematical problems **MSGE.G** • Partition shapes into parts with equal areas; express the area of each part as a unit fraction of the whole • 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 • Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts • Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category