5th Grade 2014-2015 Mathematics Standards

Number & Operation: 15-21 Items on MCA

	Strand	Standard	No.	Benchmark	Math Expressions & Resources	Common Assessment	When taught
	Standard 5.1.1: 5-7 Items on MCA						
5	Number & Operation	Divide multi-digit numbers; solve real-world and mathematical problems using arithmetic.	5.1.1.1	Divide multi-digit numbers, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms. Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal. For example: Dividing 153 by 7 can be used to convert the improper fraction 153/7 to the mixed number 216/7.	Unit 5	Unit Test, MAP	1st and 2nd weeks in November
5	Number & Operation	Divide multi-digit numbers; solve real-world and mathematical problems using arithmetic.	5.1.1.2	Consider the context in which a problem is situated to select the most useful form of the quotient for the solution and use the context to interpret the quotient appropriately. For example: If 77 amusement ride tickets are to be distributed equally among 4 children, each child will receive 19 tickets, and there will be one left over. If $77 is to be distributed equally among 4 children, each will receive $19.25, with nothing left over.	Unit 3 & 5	Unit Test, MAP	1 & 2 weeks in November

5	Number & Operation	Divide multi-digit numbers; solve real-world and mathematical problems using arithmetic.	5.1.1.3	Estimate solutions to arithmetic problems in order to assess the reasonableness of results.	Unit 5	Unit Test, MAP	3 & 4 weeks in November
5	Number & Operation	Divide multi-digit numbers; solve real-world and mathematical problems using arithmetic.	5.1.1.4	Solve real-world and mathematical problems requiring addition, subtraction, multiplication and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results. For example: The calculation 117 ÷ 9 = 13 can be checked by multiplying 9 and 13.	Unit 3 & 5	Unit Test, MAP	3 & 4 weeks in November
Standard 5.1.2: 5-7 Items on MCA							
5	Number & Operation	Read, write, represent and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.	5.1.2.1	Read and write decimals using place value to describe decimals in terms of groups from millionths to millions. For example: Possible names for the number 0.0037 are: 37 ten thousandths 3 thousandths + 7 ten thousandths; a possible name for the number 1.5 is 15 tenths.	Unit 2	Unit Test, MAP	1st week September

5	Number & Operation	Read, write, represent and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.	5.1.2.2	Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number.	Unit 2	Unit Test, MAP	2nd week September
5	Number & Operation	Read, write, represent and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.	5.1.2.3	Order fractions and decimals, including mixed numbers and improper fractions, and locate on a number line. For example: Which is larger 1.25 or 6/5? Another example: In order to work properly, a part must fit through a 0.24 inch wide space. If a part is 1/4 inch wide, will it fit?	Unit 1 & 2	Unit Test, MAP	1 & 2 weeks in October
5	Number & Operation	Read, write, represent and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.	5.1.2.4	Recognize and generate equivalent decimals, fractions, mixed numbers and improper fractions in various contexts. For example: When comparing 1.5 and 19/12, note that 1.5 = 11/2 = 16/12 = 18/12, so 1.5 < 19/12.	Unit 1	Unit Test, MAP	1 & 2 weeks in October

5	Number & Operation	Read, write, represent and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.	5.1.2.5	Round numbers to the nearest 0.1, 0.01 and 0.001. For example: Fifth grade students used a calculator to find the mean of the monthly allowance in their class. The calculator display shows 25.80645161. Round this number to the nearest cent.	Unit 2	Unit Test, MAP	3rd week in October
	Standard 5.1.3: 5-7 Items on MCA						
5	Number & Operation	Add and subtract fractions, mixed numbers and decimals to solve real-world and mathematical problems.	5.1.3.1	Add and subtract decimals and fractions, using efficient and generalizable procedures, including standard algorithms.	Unit 1 & 2	Unit Test, MAP	3rd week in September
5	Number & Operation	Add and subtract fractions, mixed numbers and decimals to solve real-world and mathematical problems.	5.1.3.2	Model addition and subtraction of fractions and decimals using a variety of representations. 2 1 2 1 For example: Represent /3 + /4 and /3 + /4 by drawing a rectangle divided into 4 columns and 3 rows and shading the appropriate parts or by using fraction circles or bars.	Unit 1 & 2	Unit Test, MAP	4th week in September
5	Number & Operation	Add and subtract fractions, mixed numbers and decimals to solve real-world and mathematical problems.	5.1.3.3	Estimate sums and differences of decimals and fractions to assess the reasonableness of results. For example: Recognize that 122/5 – 33/4 is between 8 and 9 (since 2/5 < 3/4).	Unit 1 & 2	Unit Test, MAP	4th week in September

	Strand	Standard	No.	Benchmark	Math Expressions & Resources	Common Assessment	When taught
5	Number & Operation	Add and subtract fractions, mixed numbers and decimals to solve real-world and mathematical problems.	5.1.3.4	Solve real-world and mathematical problems requiring addition and subtraction of decimals, fractions and mixed numbers, including those involving measurement, geometry and data. For example: Calculate the perimeter of the soccer field when the length is 109.7 meters and the width is 73.1 meters.	Unit 1 & 2	Unit Test, MAP	4th week in October

Algebra: 9-13 Items on MCA

	Strand	Standard	No.	Benchmark	Math Expressions & Resources	Common Assessment	When taught
	Standard 5.2.1: 3-4 Items on MCA						
5	Algebra	Recognize and represent patterns of change; use patterns, tables, graphs and rules to solve real-world and mathematical problems.	5.2.1.1	Create and use rules, tables, spreadsheets and graphs to describe patterns of change and solve problems. For example: An end-of-the-year party for 5th grade costs $100 to rent the room and $4.50 for each student. Know how to use a spreadsheet to create an input- output table that records the total cost of the party for any number of students between 90 and 150.	Unit 8	Unit Test, MAP	1st week in January
5	Algebra	Recognize and represent patterns of change; use patterns, tables, graphs and rules to solve real-world and mathematical problems.	5.2.1.2	Use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system.	Unit 7	Unit Test, MAP	1 & 2 weeks in December
	Standard 5.2.2: 2-3 Items on MCA						

5	Algebra	Use properties of arithmetic to generate equivalent numerical expressions and evaluate expressions involving whole numbers.	5.2.2.1	Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers. For example: Purchase 5 pencils at 19 cents and 7 erasers at 19 cents. The numerical expression is 5 × 19 + 7 × 19 which is the same as (5 + 7) × 19.	Unit 7		Unit Test, MAP	1 & 2 weeks in January
	Standard 5.2.3: 4-6 Items on MCA						
5	Algebra	Understand and interpret equations and inequalities involving variables and whole numbers, and use them to represent and solve real-world and mathematical problems.	5.2.3.1	Determine whether an equation or inequality involving a variable is true or false for a given value of the variable. For example: Determine whether the inequality 1.5 + x < 10 is true for x = 2.8, x = 8.1, or x = 9.2.	Unit 7		Unit Test, MAP	1 & 2 weeks in January
5	Algebra	Understand and interpret equations and inequalities involving variables and whole numbers, and use them to represent and solve real-world and mathematical problems.	5.2.3.2	Represent real-world situations using equations and inequalities involving variables. Create real-world situations corresponding to equations and inequalities. For example: 250 – 27 × a = b can be used to represent the number of sheets of paper remaining from a packet of 250 sheets when each student in a class of 27 is given a certain number of sheets.	Unit 7		Unit Test, MAP	3 & 4 weeks in January

	Strand	Standard	No.	Benchmark	Math Expressions & Resources	Common Assessment	When taught
5	Algebra	Understand and interpret equations and inequalities involving variables and whole numbers, and use them to represent and solve real-world and mathematical problems.	5.2.3.3	Evaluate expressions and solve equations involving variables when values for the variables are given. For example: Using the formula, A= lw, determine the area when the length is 5, and the width 6, and find the length when the area is 24 and the width is 4.	Unit 7	Unit Test, MAP	3 & 4 weeks in January

Geometry & Measurement: 9-13 Items on MCA

	Strand	Standard	No.	Benchmark	Math Expressions & Resources	Common Assessment	When taught
	Standard 5.3.1: 3-4 Items on MCA						
5	Geometry & Measurement	Describe, classify, and draw representations of three-dimensional figures.	5.3.1.1	Describe and classify three-dimensional figures including cubes, prisms and pyramids by the number of edges, faces or vertices as well as the types of faces.	Unit 8	Unit Test, MAP	3rd week in February
5	Geometry & Measurement	Describe, classify, and draw representations of three-dimensional figures.	5.3.1.2	Recognize and draw a net for a three-dimensional figure.	Unit 8	Unit Test, MAP	3rd week in February
	Standard 5.3.2: 5-6 Items on MCA						
5	Geometry & Measurement	Determine the area of triangles and quadrilaterals; determine the surface area and volume of rectangular prisms in various contexts.	5.3.2.1	Develop and use formulas to determine the area of triangles, parallelograms and figures that can be decomposed into triangles.	Unit 8	Unit Test, MAP	1 & 2 weeks in February

5	Geometry & Measurement	Determine the area of triangles and quadrilaterals; determine the surface area and volume of rectangular prisms in various contexts.	5.3.2.2	Use various tools and strategies to measure the volume and surface area of objects that are shaped like rectangular prisms. For example: Use a net or decompose the surface into rectangles. Another example: Measure the volume of a cereal box by using a ruler to measure its height, width and length, or by filling it with cereal and then emptying the cereal into containers of known volume.	Unit 8	Unit Test, MAP	1 & 2 weeks in February
5	Geometry & Measurement	Determine the area of triangles and quadrilaterals; determine the surface area and volume of rectangular prisms in various contexts.	5.3.2.3	Understand that the volume of a three-dimensional figure can be found by counting the total number of same-sized cubic units that fill a shape without gaps or overlaps. Use cubic units to label volume measurements. For example: Use cubes to find the volume of a small box.	Unit 8	Unit Test, MAP	4th week in February & 1st week in March
5	Geometry & Measurement	Determine the area of triangles and quadrilaterals; determine the surface area and volume of rectangular prisms in various contexts.	5.3.2.4	Develop and use the formulas $V = lwh$ and $V = Bh$ to determine the volume of rectangular prisms. Justify why base area B and height h are multiplied to find the volume of a rectangular prism by breaking the prism into layers of unit cubes.	Unit 8	Unit Test, MAP	4th week in February & 1st week in March

Data Analysis: 6-7 Items on MCA

	Strand	Standard	No.	Benchmark	Math Expressions & Resources	Common Assessment	When taught
	Standard 5.4.1: 6-7 Items on MCA						

5	Data Analysis	Display and interpret data; determine mean, median and range.	5.4.1.1	Know and use the definitions of the mean, median and range of a set of data. Know how to use a spreadsheet to find the mean, median and range of a data set. Understand that the mean is a "leveling out" of data. For example: The set of numbers 1, 1, 4, 6 has mean 3. It can be leveled by taking one unit from the 4 and three units from the 6 and adding them to the 1s, making four 3s.	Units 6 & 12 in Everyday Math *Not included in HM series	Unit Test, MAP	2 & 3 week in March
5	Data Analysis	Display and interpret data; determine mean, median and range	5.4.1.2	Create and analyze double-bar graphs and line graphs by applying understanding of whole numbers, fractions and decimals. Know how to create spreadsheet tables and graphs to display data.	Units 6 & 12 in Everyday Math *Not included in HM series	Unit Test, MAP	2 & 3 week in March