

# Minnesota 4<sup>th</sup> Grade MCALI Mathematics Teacher Reflection Form

Have your students mastered these benchmarks?

## Number and Operations

Vocabulary	<b>quotient</b> , factor, operation, strategy, solve, divisor, dividend, <b>equivalent</b> , represent, <b>numerator</b> , <b>denominator</b> , improper fraction, mixed numbers, compare, <b>decimal</b>		
Exceeds Standard	Chooses correct operation in a problem solving situation; uses various strategies to solve multi-step problems and assess the reasonableness of results; develops a rule for addition and subtraction of fractions with common denominators; compares and orders decimals to the thousandths.		
Meets Standard	Knows division facts; multiplies multi-digit numbers; solves multiplication problems when all relevant information is present and the question is clearly defined; solves division problems by solving for missing factor; connects relationship between multiplication and division; solves multi-step problems involving addition and subtraction; uses fraction models to determine equivalent fractions; reads and writes decimals up to thousandths.		
Partially Meets	Knows basic multiplication facts and recognizes some division facts; knows decimal and fraction equivalents for halves and fourths; uses models to compute with fractions.		
Does Not Meet	Partial recall of basic multiplication facts; computes inefficiently (e.g., uses repeated addition instead of multiplication); uses models to represent fractions.		
Self-Reflection #1	Unit	#	Benchmark
		4.1.1.1	Demonstrate fluency with <b>multiplication</b> and <b>division facts</b> .
		4.1.1.2	Use an understanding of place value to <b>multiply</b> a number by 10, 100 and 1000.
		4.1.1.3	<b>Multiply multi-digit numbers</b> , using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.
		4.1.1.4	<b>Estimate products and quotients</b> of multi-digit whole numbers by using <b>rounding</b> , benchmarks and place value to assess the reasonableness of results.
		4.1.1.5	Solve multi-step real-world and mathematical problems requiring the <b>use of addition, subtraction and multiplication of multi-digit whole numbers</b> . Use various strategies, including the relationship between operations.
		4.1.1.6	Use <b>strategies</b> and algorithms based on knowledge of place value, equality and properties of operations to <b>divide multi-digit whole numbers</b> by one- or two-digit numbers. Strategies may include mental strategies, partial quotients, the <b>commutative, associative, and distributive properties</b> and repeated subtraction.
		4.1.2.1	<b>Represent equivalent fractions</b> using fraction models such as parts of a set, fraction circles, fraction strips, number lines and other manipulatives. Use the models to determine equivalent fractions.
		4.1.2.2	<b>Locate fractions</b> on a number line. Use models to order and compare whole numbers and fractions, including <b>mixed numbers</b> and <b>improper fractions</b> .
		4.1.2.3	Use fraction models to add and subtract fractions with like denominators in real-world and mathematical situations. Develop a rule for addition and subtraction of fractions with like <b>denominators</b> .
		4.1.2.4	Read and write <b>decimals</b> with words and symbols; use place value to describe <b>decimals</b> in terms of thousands, hundreds, tens, ones, tenths, hundredths and thousandths.
		4.1.2.5	<b>Compare and order decimals and whole numbers</b> using place value, a number line and models such as grids and base 10 blocks.
		4.1.2.6	Read and write tenths and hundredths in decimal and fraction notations using words and symbols; know the fraction and decimal equivalents for halves and fourths.
		4.1.2.7	Round decimals to the nearest tenth.

## Algebra

Vocabulary	<b>variable</b>		
Exceeds Standard	Uses multi-step rules for patterns presented in different formats; translates between real-world situations and number sentences.		
Meets Standard	Uses a verbal rule for input-output table; recognizes an algebraic rule for a one-operation pattern; represents real-world situations with a number sentence involving an unknown.		
Partially Meets	Uses a verbal rule to continue pattern; matches number sentences with an isolated unknown in situations involving only multiplication.		
Does Not Meet	Recognizes patterns in lists of numbers.		
Self-Reflection #1	Unit	#	Benchmark
		4.2.1.1	Create and use <b>input-output rules</b> involving addition, subtraction, multiplication and division to solve problems in various contexts. Record the inputs and outputs in a chart or table.
		4.2.2.1	Understand how to interpret <b>number sentences</b> involving multiplication, division and unknowns.
		4.2.2.2	Use multiplication, division and unknowns to represent a given problem situation using a number sentence. Use number sense, properties of multiplication, and the relationship between multiplication and division to find values for the unknowns that make the number sentences true.

## Geometry and Measurement

Vocabulary	vertex, congruent, <b>area</b> , <b>translation</b> , <b>reflection</b> , <b>rotation</b> , <b>symmetry</b> , <b>congruent</b> , <b>transformation</b> , <b>image</b> , vertical, horizontal, clockwise, counterclockwise		
Exceeds Standard	Names and classifies polygons in a variety of contexts and orientations; conceptual understanding that polygons can be described using sides AND/OR angles; calculates area by decomposing shapes into rectangles; applies transformations to shapes; conceptual understanding of congruency (reference MN Academic Standards 4.3.3.4).		
Meets Standard	Names and describes triangles and common quadrilaterals using definitions; classifies angles in a variety of orientations; conceptual understanding of area as length times width; identifies a transformation (reference MN Academic Standards 4.3.3).		
Partially Meets	Names and describes polygons based on a familiar pictorial orientation using solely one attribute; identifies lines of symmetry; recognizes congruent shapes with the same orientation; calculates perimeter when all sides of a graphic are labeled.		
Does Not Meet	Names familiar polygons (e.g., pattern blocks); classifies angles in a familiar orientation (e.g., one ray is horizontal).		
Self-Reflection #1	Unit	#	Benchmark
		4.3.1.1	Describe, classify and sketch triangles, including <b>equilateral</b> , <b>right</b> , <b>obtuse</b> and <b>acute</b> triangles. Recognize triangles in various contexts.
		4.3.1.2	Describe, classify and draw quadrilaterals, including <b>squares</b> , <b>rectangles</b> , <b>trapezoids</b> , <b>rhombuses</b> , <b>parallelograms</b> and <b>kites</b> . Recognize quadrilaterals in various contexts.
		4.3.2.1	<b>Measure angles</b> in geometric figures and real-world objects with a protractor or angle ruler.
		4.3.2.2	Compare angles according to size. Classify angles as <b>acute</b> , <b>right</b> and <b>obtuse</b> .
		4.3.2.3	Understand that the <b>area of a two-dimensional figure</b> can be found by counting the total number of same size square units that cover a shape without gaps or overlaps. Justify why length and width are multiplied to find the area of a rectangle by breaking the rectangle into one unit by one unit squares and viewing these as grouped into rows and columns.
		4.3.2.4	Find the areas of geometric figures and real-world objects that can be divided into rectangular shapes. Use square units to label area measurements.
		4.3.3.1	Apply <b>translations (slides)</b> to figures
		4.3.3.2	Apply <b>reflections (flips)</b> to figures by reflecting over vertical or horizontal lines and relate reflections to lines of symmetry.
		4.3.3.3	Apply <b>rotations (turns)</b> of 90° clockwise or counterclockwise.
		4.3.3.4	Recognize that translations, reflections and rotations preserve <b>congruency</b> and use them to show that two figures are congruent.

## Data Analysis and Probability

Vocabulary	timeline, Venn diagram, survey		
Exceeds Standard	Conceptual understanding of solving problems involving data displays, including timelines and Venn diagrams		
Meets Standard	Collects, organizes, and displays data; solves problems in data displays involving fractions.		
Partially Meets	Translates between tables and bar graphs.		
Does Not Meet	Displays data from a table in a bar graph		
Self-Reflection #1	Unit	#	Benchmark
		4.4.1.1	Use <b>tables</b> , <b>bar graphs</b> , <b>timelines</b> and <b>Venn diagrams</b> to display data sets. The data may include fractions or decimals. Understand that spreadsheet tables and graphs can be used to display data.

### Benchmarks that will be taught by the mid-January OLPA

- Unit 1 –
- Unit 2 –
- Unit 3 –
- Unit 4 – (taught in January)

# HOW TO USE THE MCA TEACHER RELECTION FORMS

## Minnesota MCIII Mathematics Teacher Reflection Form

Have your students mastered these benchmarks? What is your evidence?

**Directions:** Take 20 minutes 2-5 times a year to reflect on your student's mastery of grade level standards. All staff are highly encouraged to reflect one week prior to and within one week after all MCA testing dates (including OLPA). The questions on this sheet written in red are questions you can ask yourself as you use the reflection form.

Strand (Number and Operations, Algebra, Geometry and Measurement, Data Analysis or Probability)				
Achievement Level Descriptors How are you teaching the standards?	Vocabulary	Exceeds Standard	Meets Standard	Partially Meets
	<p>This section represents the vocabulary highlighted in the Test Specifications. All of these terms may show up on student assessments. In addition, terms from prior grades will be on the assessment. <b>What specific best practices for teaching vocabulary have you used to teach all these terms? What evidence do you have that students have mastered these terms? Are all students using these terms orally and in writing?</b> Tip: ELL and Sp Ed staffs have great ideas for teaching academic vocabulary to students. Words highlighted are terms that appear in the test specifications more than once. If a term appears in slightly larger font, this term appears multiple times.</p>			
	<p>This is the gold standard level for all students. All students should receive instruction that allows them to master this level. This level often expects students to have <b>conceptual understanding</b> of the standards in this section. It requires students to make connections. If students only receive teaching at the lower levels, most will not meet or exceed the state standards.</p> <p><b>What specific classroom experiences have given your students a chance to master conceptual understanding of grade level standards?</b></p>			
	<p>Students who "Meet" grade level standards have are considered 'proficient' by the state.</p>			
	<p>Students who score as "Partially Meets" on the MCA's have likely mastered the skills in the 'does not meet' section below as well as the skills listed in this section. Ask yourself: <b>"What is the difference between the words in the 'partially meets' and 'does not meet' sections? What did this look like in my classroom?"</b></p>			
	<p>Students who score as "Does Not Meet" on the MCA's can only do items described in this section. This level often represents teaching skills vs. teaching concepts. <b>What percent of my teaching is represented by the description in this level?</b> It is recommended that teachers spend at most 25% of their time teaching at this level.</p>			
Self-Reflection #1	Unit	#	Benchmark	Self-Reflection #2
<p>It is important for all teachers to personally reflect on each benchmark. How one reflects can take many forms. Here are 2 options, but feel free to reflect in your own way.</p> <p><b>Option 1:</b> How well do you predict your students will do on each benchmark? Rank each benchmark as High OR Medium OR Low</p> <p><b>Option 2 - Use this rubric</b></p> <ul style="list-style-type: none"><li>1: I have not taught this benchmark</li><li>2: I have taught this benchmark</li><li>3: I have assessed this benchmark</li><li>4: I have evidence that 85% or more of students have mastered the entire benchmark.</li><li>5: 85% or more of students have mastered the benchmark and consistently use appropriate notation and mathematical vocabulary both written and orally.</li></ul>	<p>COMING SUMMER 2013</p> <p>The numbers in this section represent the units listed on the MPS Focused Instruction curriculum guide Year-at-a-glance (YAG)</p>	<p>The number in this section represents the numbers the state uses to identify each benchmark in the standards.</p> <p>1<sup>st</sup> #: Grade Level 2<sup>nd</sup> #: Strand 3<sup>rd</sup> #: Standard 4<sup>th</sup> #: Benchmark</p>	<p>This section is the exact benchmark language from the Minnesota 2007 MCIII state standards. These are the benchmarks all students in grades 3-8<sup>th</sup> and 11<sup>th</sup> grade will be assessed on each May. Sites that choose to participate in the OLPA (Optional Local Purpose Assessment) will be assessed on these benchmarks as well.</p>	<p>This column can also be completed using one of the reflection options from the first column.</p> <p>Note: This same form can be used by students, particularly at the secondary level, to personally reflect on their progress towards meeting grade level standards.</p>

### Benchmarks that will be taught by the mid-January OLPA:

COMING SUMMER 2013

This is a list of benchmarks from the Focused Instruction Curriculum Guides that students should have mastered by the end of Semester 1.