

## Year-at-a-Glance (YAG) --- Grade 3 --- Mathematics

The **Year at a Glance (YAG)** lays out all of the long term learning targets a student is expected master by the end of the year by bundling and sequencing them into the right units. On this YAG you will also see the Minnesota Standards and Benchmarks that align to the learning targets.

**Learning Targets:** Learning Targets are “student friendly” versions of the benchmarks. The Learning Targets should be posted in the classroom and used with students to describe the learning of the day. **Please note:** Because the language of the learning targets has been modified to be more accessible to students they do not fully reflect the depth and rigor of the benchmarks. For this reason it is important to consult the standards and benchmarks when planning instruction.

**Standards:** Standards and benchmarks set the expectations for achievement in mathematics for K-12 students in Minnesota. The standards represent a connected body of mathematical knowledge students learn through the processes of problem solving, reasoning, communication, making connections, and representation. The standards are grouped by strands: 1) Number and Operation; 2) Algebra; 3) Geometry and Measurement; 4) Data Analysis and Probability.

**Benchmarks:** The benchmarks provide specific details about the mathematical understanding and skills that students must meet to satisfy the standards. They are designed to inform and guide schools and teachers in developing curriculum and instruction.

**Achievement Level Descriptors:** The Achievement Level Descriptors provide a description of grade-level student performance for each of the achievement levels on the MCA.

The achievement levels for the MCAs are:

- *Exceeds the Achievement Standards*
- *Meets the Achievement Standards*
- *Partially Meets the Achievement Standards*
- *Does Not Meet the Achievement Standards*

Teachers and schools should use the [Achievement Level Descriptors](#) as a way to measure the rigor of classroom instruction. While it is important for students to be able to perform the tasks described in the *Does Not Meet* and *Partially Meets* categories, students need access and exposure to the tasks in the *Meets* and *Exceeds* categories in order to meet grade level expectations on the MCA.

First Semester	Second Semester
<p><b><u><a href="#">Unit 1: Graphing</a></u></b> 4 weeks, Approximate Dates: August 29 –September 23, 2016</p> <p><b><u><a href="#">Unit 2: Numbers to 1,000</a></u></b> 6 weeks, Approximate Dates: September 26– November 11, 2016</p> <p><b><u><a href="#">Unit 3: Equal groups</a></u></b> 6 weeks, Approximate Dates: November 14, 2016 – January 18, 2017</p> <p><b><u><a href="#">Unit 4: Pieces and parts</a></u></b> 3 ½ weeks , Approximate Dates: January 23 – February 16, 2017</p>	<p><b><u><a href="#">Unit 5: Polygons and Measurement</a></u></b> 3 weeks, Approximate Dates: February 21 – March 10, 2017</p> <p><b><u><a href="#">Unit 6: Algebra</a></u></b> 1 ½ weeks , Approximate Dates: March 13 – March 22, 2017</p> <p><b><u><a href="#">Unit 7: Numbers to 100,000</a></u></b> 3 weeks, Approximate Dates: March 27 – April 21, 2017</p> <p><i>MCA Testing: Units 1-7 must be taught before MCA Testing, Suggested Dates: May 2<sup>nd</sup> &amp; 3<sup>rd</sup>, 2017</i></p> <p><b><u><a href="#">Unit 8: More equal groups</a></u></b> 5 weeks , Approximate Dates: May 4 – June 9, 2017</p>

First Semester			
Unit 1: Graphing ( 4 weeks)			
<i>Approximate Dates: August 29 - September 23, 2016</i>			
Learning Targets	Standards		
<u>Unit Long Learning Targets</u>	Strand / Standard	No.	Benchmark
<p><b>1.1</b> I can name and describe parts of a graph and the type of data it represents. (3.4.1.1)</p> <p><b>1.2</b> I can use graphs to compare data and solve problems. (3.4.1.1)</p> <p><b>1.3</b> I can collect, organize, display and interpret data for solving real-world problems. (3.4.1.1)</p> <p><b>1.4</b> I can interpret data having a variety of scales and justify my thinking. (3.4.1.1)</p> <p><b>1.5</b> I can use tools to measure temperature. (3.3.3.4)</p>	<b>Data Analysis</b>	Collect, organize, display, and interpret data. Use labels and a variety of scales and units in displays.	<b>3.4.1.1</b> Collect, display and interpret data using frequency tables, bar graphs, picture graphs and number line plots having a variety of scales. Use appropriate titles, labels and units.
		Use time, money and temperature to solve real-world and mathematical problems.	<b>3.3.3.4</b> Use an analog thermometer to determine temperature to the nearest degree in Fahrenheit and Celsius.

*\*Highlighted benchmarks indicate areas where data shows that students in MPS struggle.*

First Semester			
<b>Unit 2: Numbers to 1,000 (6 weeks)</b> <i>Approximate Dates: September 26 – November 11, 2016</i>			
Learning Targets	Standards		
<u>Unit Long Learning Targets</u>	Strand / Standard	No.	Benchmark
<p><b>2.1</b> I can represent and compare whole numbers up to 1000 in multiple ways. (3.1.1.1, 3.1.1.5)</p> <p><b>2.2</b> I can solve real-world problems with numbers up to 1,000 using addition and subtraction and justify my solution. (3.1.2.1, 3.1.2.2)</p> <p><b>2.3</b> I can use rounding strategies to the nearest 10, 100 or 1000 to estimate solutions to problems. (3.1.1.4)</p> <p><b>2.4</b> I can make change for a dollar in multiple ways, including with as few coins as possible. (3.3.3.3)</p>	<b>Number &amp; Operations</b>	Compare and represent whole numbers up to 100,000 with an emphasis on place value and equality.	3.1.1.1 Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.
			3.1.1.4 Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.
			3.1.1.5 Compare and order whole numbers up to 100,000.
		Add and subtract multi-digit whole numbers; represent multiplication and division in various ways; solve real-world and mathematical problems using arithmetic.	3.1.2.1 Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.
			3.1.2.2 Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.
	<b>Geometry &amp; Measurement</b>	Use time, money and temperature to solve real-world and mathematical problems.	3.3.3.3 Make change up to one dollar in several different ways, including with as few coins as possible.

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**First Semester**
**Unit 3: Equal groups (6 weeks)**
*Approximate Dates: November 14, 2016 – January 18, 2017*

Learning Targets	Standards		
<u>Unit Long Learning Targets</u>	Strand / Standard	No.	Benchmark
<p><b>3.1</b> I can represent multiplication and division in a variety of ways and explain the representation. (3.1.2.3)</p> <p><b>3.2</b> I can multiply a three or two-digit number by a one-digit number and explain how I found the product using place value language or the ideas of the distributive, associative and commutative properties. (3.1.2.5)</p> <p><b>3.3</b> I can create a story to represent a multiplication or division number sentence or write a multiplication or division number sentence to represent a story and can use basic facts to find the missing value in the number sentence. (3.2.2.1, 3.2.2.2)</p>	<b>Number &amp; Operation</b>	Add and subtract multi-digit whole numbers; represent multiplication and division in various ways; solve real-world and mathematical problems using arithmetic.	<p>3.1.2.3 Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.</p> <p>3.1.2.4 Solve real-world and mathematical problems involving multiplication and division, including both "how many in each group" and "how many groups" division problems.</p> <p>3.1.2.5 Use strategies and algorithms based on knowledge of place value, equality and properties of addition and multiplication to multiply a two- or three-digit number by a one-digit number. Strategies may include mental strategies, partial products, the standard algorithm, and the commutative, associative, and distributive properties.</p>
<p><b>3.4</b> I can solve real-world multiplication and division problems and identify when the answer to a division problem tells me "how many in a group" or "how many groups." (3.1.2.4)</p> <p><b>3.5</b> I can use tools to measure and solve problems involving time. (3.3.3.1, 3.3.3.2)</p>	<b>Algebra</b>	Use number sentences involving multiplication and division basic facts and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences	<p>3.2.2.1 Understand how to interpret number sentences involving multiplication and division basic facts and unknowns. Create real-world situations to represent number sentences.</p> <p>3.2.2.2 Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.</p>
	<b>Geometry &amp; Measurement</b>	Use time, money and temperature to solve real-world and mathematical problems.	<p>3.3.3.1 Tell time to the minute, using digital and analog clocks. Determine elapsed time to the minute.</p> <p>3.3.3.2 Know relationships among units of time.</p>

First Semester			
Unit 4: Pieces and parts (3 ½ weeks) <i>Approximate Dates: January 23 - February 16, 2017</i>			
Learning Targets	Standards		
<u>Unit Long Learning Targets</u>	Strand / Standard	No.	Benchmark
<p><b>4.1</b> I can recognize and represent fractions in a variety of ways. (3.1.3.1)</p> <p><b>4.2</b> I can order and compare fractions and justify my thinking. (3.1.3.3)</p> <p><b>4.3</b> I can explain why the size of a fraction depends on the size of the whole. (3.1.3.2)</p>	<b>Number &amp; Operation</b>	Understand meanings and uses of fractions in real-world and mathematical situations.	<p>3.1.3.1 Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.</p> <p>3.1.3.2 Understand that the size of a fractional part is relative to the size of the whole.</p> <p>3.1.3.3 Order and compare unit fractions and fractions with like denominators by using models and an understanding of the concept of numerator and denominator.</p>

Second Semester				
Unit 5: Polygons and Measurement (3 weeks)				
Approximate Dates: February 21 - March 10, 2017				
Learning Targets	Standards			
Unit Long Learning Targets	Strand / Standard	No.	Benchmark	
<p><b>5.1</b> I can use geometric attributes to describe, classify, and create shapes. (3.3.1.1, 3.3.1.2)</p> <p><b>5.2</b> I can use tools to measure and solve problems involving perimeter. (3.3.2.1, 3.3.2.2, 3.3.2.3)</p>	<b>Geometry &amp; Measurement</b>	<p>3.3.1.1</p>	<p>Identify parallel and perpendicular lines in various contexts, and use them to describe and create geometric shapes, such as right triangles, rectangles, parallelograms and trapezoids.</p>	
		<p>Use geometric attributes to describe and create shapes in various contexts.</p>	<p>3.3.1.2</p>	<p>Sketch polygons with a given number of sides or vertices (corners), such as pentagons, hexagons and octagons.</p>
		<p>Understand perimeter as a measurable attribute of real-world and mathematical objects. Use various tools to measure distances.</p>	<p>3.3.2.1</p> <p>3.3.2.2</p> <p>3.3.2.3</p>	<p>Use half units when measuring distances.</p> <p>Find the perimeter of a polygon by adding the lengths of the sides.</p> <p>Measure distances around objects.</p>

\*Highlighted benchmarks indicate areas where data shows that students in MPS struggle.

Second Semester				
Unit 6: Algebra (1 ½ weeks) <i>Approximate Dates: March 13 - March 22, 2017</i>				
Learning Targets	Standards			
<b>Unit Long Term Learning Targets:</b>  <b>6.1</b> I can identify, describe and extend patterns. (3.2.1.1) <b>6.2</b> I can create an input-output table to represent a real-world situation or math problem. (3.2.1.1) <b>6.3</b> I can recognize addition, subtraction, multiplication, and division when given a story and write a number sentence to represent the situation. (3.1.2.2, 3.2.2.1, 3.2.2.2)	Strand / Standard	No.	Benchmark	
	<b>Algebra</b>	Use single-operation input-output rules to represent patterns and relationships and to solve real-world and mathematical problems.	3.2.1.1	Create, describe, and apply single-operation input-output rules involving addition, subtraction and multiplication to solve problems in various contexts.
		Use number sentences involving multiplication and division basic facts and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences.	3.2.2.1	Understand how to interpret number sentences involving multiplication and division basic facts and unknowns. Create real-world situations to represent number sentences.
			3.2.2.2	Use multiplication and division basic facts to represent a given problem situation using a number sentence. Use number sense and multiplication and division basic facts to find values for the unknowns that make the number sentences true.
	<b>Number &amp; Operation</b>	Add and subtract multi-digit whole numbers; represent multiplication and division in various ways; solve real-world and mathematical problems using arithmetic.	3.1.2.2	Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.

Second Semester			
Unit 7: Numbers to 100,000 (3 weeks)			
Approximate Dates: March 27 – April 21, 2017			
Learning Targets	Standards		
Unit Long Term Learning Targets:	Strand / Standard	No.	Benchmark
<p><b>7.1</b> I can represent and compare whole numbers up to 100,000 and in multiple ways. (3.1.1.1, 3.1.1.2, 3.1.1.5)</p> <p><b>7.2</b> I can solve real-world problems and non-contextual problems with up to 4 digit numbers using addition and subtraction and justify my solution. (3.1.2.1, 3.1.2.2)</p> <p><b>7.3</b> I can describe numbers using place value and use this reasoning to increase or decrease numbers by 10,000, 1,000, and 100. (3.1.1.2, 3.1.1.3)</p> <p><b>7.4</b> I can use rounding strategies up to the nearest 10, 100, 1000, or 10,000 to estimate solutions to problems. (3.1.1.4)</p> <p><b>**MCA Testing: Units 1-7 must be taught before MCA Testing</b></p>	<p>Number &amp; Operation</p> <p>Compare and represent whole numbers up to 100,000 with an emphasis on place value and equality.</p>	3.1.1.1	Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.
		3.1.1.2	Use place value to describe whole numbers between 1000 and 100,000 terms of ten thousands, thousands, hundreds, tens and ones.
		3.1.1.3	Find 10,000 more or 10,000 less than a given five-digit number. Find 1000 more or 1000 less than a given four- or five-digit. Find 100 more or 100 less than a given four- or five-digit number.
		3.1.1.4	Round numbers to the nearest 10,000, 1000, 100 and 10. Round up and round down to estimate sums and differences.
		3.1.1.5	Compare and order whole numbers up to 100,000.
	<p>Add and subtract multi-digit whole numbers; represent multiplication and division in various ways; solve real-world and mathematical problems using arithmetic.</p>	3.1.2.1	Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.
		3.1.2.2	Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results.

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Second Semester			
Unit 8: More equal groups (5 weeks) Approximate Dates: May 4 – June 9, 2017			
Learning Targets	Standards		
Unit Long Term Learning Targets:	Strand / Standard	No.	Benchmark
<p><b>8.1</b> I can use properties and relationships to efficiently solve basic multiplication and division facts. (4.1.1.1)</p> <p><b>8.2</b> I can determine when to use addition, subtraction, multiplication, or division when given a story-problem. (4.1.1.1)</p>	<b>Number &amp; Operation</b>	Demonstrate mastery of multiplication and division basic facts; multiply multi-digit numbers; solve real-world and mathematical problems using arithmetic.	4.1.1.1 Demonstrate fluency with multiplication and division facts.