

# Priority Standards for Leveraging Learning in Mathematics

## Grades K-12

This identification of priority standards from the Missouri Learning Standards Grade- and Course-Level Expectations (MLS) to be used as a resource for Missouri educators.

In mathematics, the identification of priority standards could be used to focus our attention on big ideas at each grade level. Through the practice of exploring and solving tasks that promote the understanding of these big ideas students can connect the expectations to elevate their learning. Studying expectations in discrete manners, or by single expectations, often leaves students missing the connections to other mathematical topics resulting in stifled progress and potentially leading to learning loss.

For-grades K – 8, Numeracy is the overarching big idea. While much has been written and discussed about numeracy, we define numeracy to be students operating on quantities rather than operating on symbols. Learning opportunities should allow students to be flexible moving between quantities and symbols which should empower a stronger foundation for the transition to study of algebraic topics.

As students continue their mathematical learning into high school level courses numeracy extends into algebraic and geometric thinking which will lead to students using mathematics to solve problems. These concepts support higher mathematical constructs by helping to develop logical thought and reasoning, envisioning mathematics and predicting, and use to model situations in a students' world.

This document will list the expectations that are being identified as priority. These are listed under the bolded Cluster heading linked to their Domain. As an additional resource, there is a companion [Excel version](#) of this document that will show all expectations with the listing of either priority or supporting as well as some information about future edits to the Item Specifications as well as notes for future assessment development.

Throughout the development process, Missouri educators provided feedback that was used to develop both this document as well as other supporting documents. A [Frequently Asked Question resource](#) was written to support educators as they used these resources.

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Kindergarten Mathematics		
	Priority Standard	Priority Codes
Number Sense	<b>Understand the relationship between numbers and quantities; connect counting to cardinality.</b> <ul style="list-style-type: none"> <li>Say the number names when counting objects, in the standard order, pairing each object with one and only one number name and each number name with one and only one object.</li> <li>Recognize, without counting, the quantity of groups up to 5 objects arranged in common patterns.</li> <li>Demonstrate that a number can be used to represent “how many” are in a set.</li> </ul>	<b>K.NS.B</b>  K.NS.B.5  K.NS.B.8  K.NS.B.9
	<b>Compare numbers.</b> <ul style="list-style-type: none"> <li>Compare two or more sets of objects and identify which set is equal to, more than or less than the other.</li> </ul>	<b>K.NS.C</b> K.NS.C.10
Number Sense and Operations in Base Ten	<b>Work with numbers 11 – 19 to gain foundations of place value.</b> <ul style="list-style-type: none"> <li>Compose and decompose numbers from 11 to 19 into sets of tens with additional ones.</li> </ul>	<b>K.NBT.A</b> K.NBT.A.1
Relationships and Algebraic Thinking	<b>Understand addition as putting together or adding to, and understand subtraction as taking apart or taking from.</b> <ul style="list-style-type: none"> <li>Represent addition and subtraction within 10.</li> <li>Demonstrate fluency for addition and subtraction within 5.</li> <li>Decompose numbers less than or equal to 10 in more than one way.</li> <li>Make 10 for any number from 1 to 9.</li> </ul>	<b>K.RA.A</b>  K.RA.A.1 K.RA.A.2 K.RA.A.3 K.RA.A.4
Geometry and Measurement	<b>Reason with shapes and their attributes.</b> <ul style="list-style-type: none"> <li>Compare the measurable attributes of two objects.</li> </ul>	<b>K.GM.A</b> K.GM.A.2
	<b>Analyze squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres.</b> <ul style="list-style-type: none"> <li>Identify shapes and describe objects in the environment using names of shapes, recognizing the name stays the same regardless of orientation or size.</li> <li>Identify and describe the attribute of shapes, and use the attributes to sort a collection of shapes.</li> <li>Draw or model simple two-dimensional shapes.</li> <li>Compose simple shapes to form larger shapes using manipulatives.</li> </ul>	<b>K.GM.C</b>  K.GM.C.6  K.GM.C.8  K.GM.C.9 K.GM.C.10
Data and Statistics	<b>Classify objects and count the number of objects in each category.</b> <ul style="list-style-type: none"> <li>Compare category counts using appropriate language.</li> </ul>	<b>K.DS.A</b> K.DS.A.2

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Grade 1 in Mathematics		
	Priority Standard	Priority Codes
Relationships and Algebraic Thinking	<b>Represent and solve problems involving addition and subtraction.</b> <ul style="list-style-type: none"> <li>Use addition and subtraction within 20 to solve problems.</li> <li>Develop the meaning of the equal sign and determine if equations involving addition and subtraction are true or false.</li> </ul>	<b>1.RA.A</b> 1.RA.A.1 1.RA.A.3
	<b>Add and subtract within 20.</b> <ul style="list-style-type: none"> <li>Demonstrate fluency with addition and subtraction within 10.</li> </ul>	<b>1.RA.C</b> 1.RA.C.8
Number Sense and Operations in Base Ten	<b>Understand place value of two-digit numbers.</b> <ul style="list-style-type: none"> <li>Understand two-digit numbers are composed of ten(s) and one(s).</li> <li>Compare two two-digit numbers using the symbols <math>&gt;</math>, <math>=</math> or <math>&lt;</math>.</li> </ul>	<b>1.NBT.A</b> 1.NBT.A.2 1.NBT.A.3
	<b>Use place value understanding to add and subtract.</b> <ul style="list-style-type: none"> <li>Add or subtract a multiple of 10 from another two-digit number, and justify the solution.</li> </ul>	<b>1.NBT.B</b> 1.NBT.B.7
Geometry and Measurement	<b>Reason with shapes and their attributes.</b> <ul style="list-style-type: none"> <li>Distinguish between defining attributes versus non-defining attributes; build and draw shapes that possess defining attributes.</li> <li>Compose and decompose two- and three-dimensional shapes to build an understanding of part-whole relationships and the properties of the original and composite shapes.</li> <li>Partition circles and rectangles into two or four equal shares, and describe the shares and the wholes verbally.</li> </ul>	<b>1.GM.A</b> 1.GM.A.1 1.GM.A.2 1.GM.A.4
	<b>Measure lengths in non-standard units.</b> <ul style="list-style-type: none"> <li>Compare the lengths of two objects indirectly by using a third object.</li> </ul>	<b>1.GM.B</b> 1.GM.B.6
Data and Statistics	<b>Represent and interpret data.</b> <ul style="list-style-type: none"> <li>Draw conclusions from object graphs, picture graphs, T-charts and tallies.</li> </ul>	<b>1.DS.A</b> 1.DS.A.2

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Grade 2 in Mathematics		
	Priority Standard	Priority Codes
Number Sense and Operations in Base Ten	<b>Understand place value of three digit numbers.</b> <ul style="list-style-type: none"> <li>Understand three-digit numbers are composed of hundreds, tens and ones.</li> <li>Compare two three-digit numbers using the symbols <math>&gt;</math>, <math>=</math> or <math>&lt;</math>.</li> </ul>	<b>2.NBT.A</b> 2.NBT.A.1 2.NBT.A.5
	<b>Use place value understanding and properties of operations to add and subtract.</b> <ul style="list-style-type: none"> <li>Add or subtract within 1000, and justify the solution.</li> <li>Use the relationship between addition and subtraction to solve problems.</li> </ul>	<b>2.NBT.B</b> 2.NBT.B.8 2.NBT.B.9
Relationships and Algebraic Thinking	<b>Add and subtract within 20.</b> <ul style="list-style-type: none"> <li>Demonstrate fluency with addition and subtraction within 20.</li> </ul>	<b>2.RA.A</b> 2.RA.A.1
	<b>Develop foundations for multiplication and division.</b> <ul style="list-style-type: none"> <li>Find the total number of objects arranged in a rectangular array with up to 5 rows and 5 columns, and write an equation to represent the total as a sum of equal addends.</li> </ul>	<b>2.RA.B</b> 2.RA.B.3
Geometry and Measurement	<b>Reason with shapes and their attributes.</b> <ul style="list-style-type: none"> <li>Demonstrate that equal shares of identical wholes need not have the same shape.</li> </ul>	<b>2.GM.A</b> 2.GM.A.3a
	<b>Measure and estimate lengths in standard units.</b> <ul style="list-style-type: none"> <li>Analyze the results of measuring the same object with different units.</li> </ul>	<b>2.GM.B</b> 2.GM.B.5
	<b>Relate addition and subtraction to length.</b> <ul style="list-style-type: none"> <li>Represent whole numbers as lengths on a number line, and represent whole-number sums and differences within 100 on a number line.</li> </ul>	<b>2.GM.C</b> 2.GM.C.9
	<b>Work with time and money.</b> <ul style="list-style-type: none"> <li>Find the value of combinations of dollar bills, quarters, dimes, nickels and pennies, using \$ and ¢ appropriately.</li> </ul>	<b>2.GM.D</b> 2.GM.D.12
Data and Statistics	<b>Represent and interpret data.</b> <ul style="list-style-type: none"> <li>Solve problems using information presented in line plots, picture graphs and bar graphs.</li> <li>Draw conclusions from line plots, picture graphs and bar graphs.</li> </ul>	<b>2.DS.A</b> 2.DS.A.4 2.DS.A.5

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Grade 3 in Mathematics		
	Priority Standard	Priority Codes
Relationships and Algebraic Thinking	<b>Represent and solve problems involving multiplication and division.</b> <ul style="list-style-type: none"> <li>Interpret products of whole numbers.</li> <li>Interpret quotients of whole numbers.</li> <li>Describe in words or drawings a problem that illustrates a multiplication or division situation.</li> </ul>	<b>3.RA.A</b> 3.RA.A.1 3.RA.A.2 3.RA.A.3
	<b>Multiply and divide within 100.</b> <ul style="list-style-type: none"> <li>Multiply and divide with numbers and results within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers.</li> <li>Demonstrate fluency with products within 100.</li> </ul>	<b>3.RA.C</b> 3.RA.C.7 3.RA.C.8
	<b>Use the four operations to solve word problems.</b> <ul style="list-style-type: none"> <li>Write and solve two-step problems involving variables using any of the four operations.</li> <li>Interpret the reasonableness of answers using mental computation and estimation strategies including rounding.</li> </ul>	<b>3.RA.D</b> 3.RA.D.9 3.RA.D.10
	<b>Identify and explain arithmetic patterns.</b> <ul style="list-style-type: none"> <li>Identify arithmetic patterns and explain the patterns using properties of operations.</li> </ul>	<b>3.RA.E</b> 3.RA.E.11
Number Sense and Operations in Fractions	<b>Develop understanding of fractions as numbers.</b> <ul style="list-style-type: none"> <li>Understand a unit fraction as the quantity formed by one part when a whole is partitioned into equal parts.</li> <li>Describe the numerator as representing the number of pieces being considered.</li> <li>Describe the denominator as the number of pieces that make the whole.</li> <li>Recognize and generate equivalent fractions using visual models, and justify why the fractions are equivalent.</li> <li>Compare two fractions with the same numerator or denominator using the symbols <math>&gt;</math>, <math>=</math> or <math>&lt;</math>, and justify the solution.</li> <li>Explain why fraction comparisons are only valid when the two fractions refer to the same whole.</li> </ul>	<b>3.NF.A</b> 3.NF.A.1 3.NF.A.2a 3.NF.A.2b 3.NF.A.5 3.NF.A.6 3.NF.A.7
Geometry and Measurement	<b>Reason with shapes and their attributes.</b> <ul style="list-style-type: none"> <li>Understand that shapes in different categories may share attributes and that the shared attributes can define a larger category.</li> <li>Distinguish rhombuses and rectangles as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to these subcategories.</li> <li>Partition shapes into parts with equal areas, and express the area of each part as a unit fraction of the whole.</li> </ul>	<b>3.GM.A</b> 3.GM.A.1 3.GM.A.2 3.GM.A.3
	<b>Solve problems involving the measurement of time, liquid volumes and weights of objects.</b> <ul style="list-style-type: none"> <li>Measure or estimate length, liquid volume and weight of objects.</li> </ul>	<b>3.GM.B</b> 3.GM.B.7
	<b>Understand concepts of area.</b> <ul style="list-style-type: none"> <li>Find rectangular arrangements that can be formed for a given area.</li> <li>Decompose a rectangle into smaller rectangles to find the area of the original rectangle.</li> </ul>	<b>3.GM.C</b> 3.GM.C.13 3.GM.C.14

# Mathematics Priority Standards: Grades K-12

	<p><b>Understand concepts of perimeter.</b></p> <ul style="list-style-type: none"><li>• <i>Solve problems involving perimeters of polygons.</i></li><li>• <i>Understand that rectangles can have equal perimeters but different areas, or rectangles can have equal areas but different perimeters.</i></li></ul>	<p><b>3.GM.D</b> <i>3.GM.D.15</i> <i>3.GM.D.16</i></p>
--	---	--

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Grade 4 in Mathematics		
	Priority Standard	Priority Codes
Number Sense and Operations in Fractions	<b>Extend understanding of fraction equivalence and ordering. (Limit denominators to 2, 3, 4, 5, 6, 8, 10, 12 and 100.)</b> <ul style="list-style-type: none"> <li>Explain and/or illustrate why two fractions are equivalent</li> <li>Recognize and generate equivalent fractions.</li> <li>Compare two fractions using the symbols <math>&gt;</math>, <math>=</math> or <math>&lt;</math>, and justify the solution.</li> </ul>	<b>4.NF.A</b>  4.NF.A.1 4.NF.A.2 4.NF.A.3
	<b>Extend understanding of operations on whole numbers to fraction operations.</b> <ul style="list-style-type: none"> <li>Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.</li> <li>Solve problems involving multiplication of a fraction by a whole number.</li> </ul>	<b>4.NF.B</b>  4.NF.B.6  4.NF.B.8
	<b>Understand decimal notation for fractions, and compare decimal fractions. (Denominators of 10 or 100.)</b> <ul style="list-style-type: none"> <li>Understand that fractions and decimals are equivalent representations of the same quantity.</li> <li>Compare two decimals to the hundredths place using the symbols <math>&gt;</math>, <math>=</math> or <math>&lt;</math>, and justify the solution.</li> </ul>	<b>4.NF.C</b>  4.NF.C.10  4.NF.C.12
Relationships and Algebraic Thinking	<b>Use the four operations with whole numbers to solve problems.</b> <ul style="list-style-type: none"> <li>Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.</li> <li>Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.</li> </ul>	<b>4.RA.A</b>  4.RA.A.2  4.RA.A.3
	<b>Generate and analyze patterns.</b> <ul style="list-style-type: none"> <li>Generate a number pattern that follows a given rule.</li> <li>Use words or mathematical symbols to express a rule for a given pattern.</li> </ul>	<b>4.RA.C</b>  4.RA.C.6 4.RA.C.7
Geometry and Measurement	<b>Classify 2-dimensional shapes by properties of their lines and angles.</b> <ul style="list-style-type: none"> <li>Classify two-dimensional shapes by their sides and/or angles.</li> </ul>	<b>4.GM.A</b>  4.GM.A.2
	<b>Understand the concepts of angle and measure angles.</b> <ul style="list-style-type: none"> <li>Identify and estimate angles and their measure.</li> </ul>	<b>4.GM.B</b>  4.GM.B.4
	<b>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</b> <ul style="list-style-type: none"> <li>Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.</li> <li>Apply the area and perimeter formulas for rectangles to solve problems.</li> </ul>	<b>4.GM.C</b>  4.GM.C.7  4.GM.C.8
Data and Statistics	<b>Represent and analyze data.</b> <ul style="list-style-type: none"> <li>Analyze the data in a frequency table, line plot, bar graph or picture graph.</li> </ul>	<b>4.DS.A</b>  4.DS.A.3

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Grade 5 in Mathematics		
	Priority Standard	Priority Codes
Number Sense and Operations in Fractions	<b>Understand the relationship between fractions and decimals (denominators that are factors of 100).</b> <ul style="list-style-type: none"> <li>Understand that parts of a whole can be expressed as fractions and/or decimals.</li> <li>Convert decimals to fractions and fractions to decimals.</li> <li>Compare and order fractions and/or decimals to the thousandths place using the symbols <math>&gt;</math>, <math>=</math> or <math>&lt;</math>, and justify the solution.</li> </ul>	<b>5.NF.A</b>  5.NF.A.1 5.NF.A.2 5.NF.A.3
	<b>Perform operations and solve problems with fractions and decimals.</b> <ul style="list-style-type: none"> <li>Estimate results of sums, differences and products with fractions and decimals to the thousandths.</li> <li>Estimate the size of the product based on the size of the two factors.</li> <li>Explain why multiplying a given number by a fraction greater than 1 results in a product larger than the given number.</li> <li>Explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.</li> <li>Explain why multiplying the numerator and denominator by the same number is equivalent to multiplying the fraction by 1.</li> <li>Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.</li> <li>Recognize the relationship between multiplying fractions and finding the areas of rectangles with fractional side lengths.</li> <li>Calculate and interpret the product of a fraction by a whole number and a whole number by a fraction.</li> <li>Calculate and interpret the product of two fractions less than one.</li> <li>Calculate and interpret the quotient of a unit fraction by a non-zero whole number.</li> <li>Calculate and interpret the quotient of a whole number by a unit fraction.</li> </ul>	<b>5.NF.B</b> 5.NF.B.4  5.NF.B.5a 5.NF.B.5b  5.NF.B.5c  5.NF.B.5d  5.NF.B.6  5.NF.B.7a  5.NF.B.7b 5.NF.B.7c 5.NF.B.8a 5.NF.B.8b
Relationships and Algebraic Thinking	<b>Represent and analyze patterns and relationships.</b> <ul style="list-style-type: none"> <li>Generate two numeric patterns given two rules.</li> <li>Translate two numeric patterns into two sets of ordered pairs.</li> <li>Graph numeric patterns on the Cartesian coordinate plane.</li> <li>Identify the relationship between two numeric patterns.</li> <li>Write a rule to describe or explain a given numeric pattern.</li> </ul>	<b>5.RA.A</b> 5.RA.A.1a 5.RA.A.1b 5.RA.A.1c 5.RA.A.1d 5.RA.A.2
	<b>Use the four operations to represent and solve problems.</b> <ul style="list-style-type: none"> <li>Solve and justify multi-step problems involving variables, whole numbers, fractions and decimals.</li> </ul>	<b>5.RA.C</b> 5.RA.C.5
Geometry and Measurement	<b>Classify two- and three- dimensional geometric shapes.</b> <ul style="list-style-type: none"> <li>Classify figures in a hierarchy based on properties.</li> </ul>	<b>5.GM.A</b> 5.GM.A.2
	<b>Understand and compute volume.</b> <ul style="list-style-type: none"> <li>Describe a cube with edge length 1 unit as a “unit cube” and is said to have “one cubic unit” of volume and can be used to measure volume.</li> <li>Understand that the volume of a right rectangular prism can be found by stacking multiple layers of the base.</li> </ul>	<b>5.GM.B</b> 5.GM.B.4a  5.GM.B.4b

## Mathematics Priority Standards: Grades K-12

<b>Data and Statistics</b>	<p><b>Graph points on the Cartesian coordinate plane within the first quadrant to solve problems.</b></p> <ul style="list-style-type: none"> <li>• <i>Represent the axes as scaled perpendicular number lines that both intersect at 0, the origin.</i></li> <li>• <i>Identify any point on the Cartesian coordinate plane by its ordered pair coordinates.</i></li> <li>• <i>Define the first number in an ordered pair as the horizontal distance from the origin.</i></li> <li>• <i>Define the second number in an ordered pair as the vertical distance from the origin.</i></li> </ul>	<p><b>5.GM.C</b></p> <p><i>5.GM.C.6a</i></p> <p><i>5.GM.C.6b</i></p> <p><i>5.GM.C.6c</i></p> <p><i>5.GM.C.6d</i></p>
	<p><b>Solve problems involving measurement and conversions within a measurement system.</b></p> <ul style="list-style-type: none"> <li>• <i>Solve multi-step problems that require measurement conversions.</i></li> </ul>	<p><b>5.GM.D</b></p> <p><i>5.GM.D.9</i></p>
	<p><b>Represent and analyze data.</b></p> <ul style="list-style-type: none"> <li>• <i>Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outliers and generating the median.</i></li> </ul>	<p><b>5.DS.A</b></p> <p><i>5.DS.A.2</i></p>

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Grade 6 in Mathematics		
	Priority Standard	Priority Codes
Ratios and Proportional Relationships	<p><b>Understand and use ratios to solve problems.</b></p> <ul style="list-style-type: none"> <li>Understand a ratio as a comparison of two quantities and represent these comparisons.</li> <li>Create tables of equivalent ratios, find missing values in the tables and plot the pairs of values on the Cartesian coordinate plane.</li> <li>Solve unit rate problems.</li> <li>Solve percent problems.</li> <li>Convert measurement units within and between two systems of measurement.</li> </ul>	<p><b>6.RP.A</b> 6.RP.A.1</p> <p>6.RP.A.3a</p> <p>6.RP.A.3b 6.RP.A.3c 6.RP.A.3d</p>
Number Sense and Operations	<p><b>Apply and extend previous understandings of multiplication and division to divide fractions by fractions.</b></p> <ul style="list-style-type: none"> <li>Solve problems involving division of fractions by fractions.</li> </ul>	<p><b>6.NS.A</b> 6.NS.A.1a</p>
	<p><b>Compute with non-negative multi-digit numbers, and find common factors and multiples.</b></p> <ul style="list-style-type: none"> <li>Use the distributive property to express a sum of two whole numbers with a common factor as a multiple of a sum of two whole numbers.</li> </ul>	<p><b>6.NS.B</b> 6.NS.B.4b</p>
	<p><b>Apply and extend previous understandings of numbers to the system of rational numbers.</b></p> <ul style="list-style-type: none"> <li>Understand that a number and its opposite (additive inverse) are located on opposite sides of zero on the number line.</li> <li>Understand that the absolute value of a rational number is its distance from 0 on the number line.</li> <li>Extend prior knowledge to generate equivalent representations of rational numbers between fractions, decimals and percentages (limited to terminating decimals and/or benchmark fractions of <math>\frac{1}{3}</math> and <math>\frac{2}{3}</math>).</li> </ul>	<p><b>6.NS.C</b> 6.NS.C.6c 6.NS.C.7 6.NS.C.8</p>
Expressions, Equations and Inequalities	<p><b>Apply and extend previous understandings of arithmetic to algebraic expressions.</b></p> <ul style="list-style-type: none"> <li>Describe the difference between an expression and an equation.</li> <li>Write and evaluate algebraic expressions.</li> <li>Understand the meaning of the variable in the context of the situation.</li> <li>Identify and generate equivalent algebraic expressions using mathematical properties.</li> </ul>	<p><b>6.EE1.A</b> 6.EE1.A.1 6.EE1.A.2d 6.EE1.A.2e 6.EE1.A.3</p>
	<p><b>Reason about and solve one-variable equations and inequalities.</b></p> <ul style="list-style-type: none"> <li>Understand that if any solutions exist, the solution set for an equation or inequality consists of values that make the equation or inequality true.</li> <li>Write and solve equations using variables to represent quantities, and understand the meaning of the variable in the context of the situation.</li> </ul>	<p><b>6.EE1.B</b> 6.EE1.B.5 6.EE1.B.6</p>
	<p><b>Represent and analyze quantitative relationships between dependent and independent variables.</b></p> <ul style="list-style-type: none"> <li>Write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable.</li> <li>Analyze the relationship between the dependent and independent variables using graphs, tables and equations and relate these representations to each other.</li> </ul>	<p><b>6.EE1.C</b> 6.EE1.C.9a 6.EE1.C.9b</p>

## Mathematics Priority Standards: Grades K-12

<b>Geometry and Measurement</b>	<p><b>Solve problems involving area, surface area and volume.</b></p> <ul style="list-style-type: none"> <li>• <i>Understand signs of numbers in ordered pairs as indicating locations in quadrants of the Cartesian coordinate plane.</i></li> <li>• <i>Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.</i></li> <li>• <i>Find distances between points with the same first coordinate or the same second coordinate.</i></li> <li>• <i>Construct polygons in the Cartesian coordinate plane.</i></li> </ul>	<p><b>6.GM.A</b> 6.GM.A.3a</p> <p>6.GM.A.3b</p> <p>6.GM.A.3c</p> <p>6.GM.A.3d</p>
<b>Data, Statistics and Probability</b>	<p><b>Develop understanding of statistical variability.</b></p> <ul style="list-style-type: none"> <li>• <i>Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread and overall shape.</i></li> </ul>	<p><b>6.DSP.A</b> 6.DSP.A.2</p>
	<p><b>Summarize and describe distributions.</b></p> <ul style="list-style-type: none"> <li>• <i>Analyze the choice of measures of center and variability based on the shape of the data distribution and/or the context of the data.</i></li> </ul>	<p><b>6.DSP.B</b> 6.DSP.B.5d</p>

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Grade 7 in Mathematics		
	Priority Standard	Priority Codes
Ratios and Proportional Relationships	<p><b>Analyze proportional relationships and use them to solve problems.</b></p> <ul style="list-style-type: none"> <li>Determine when two quantities are in a proportional relationship.</li> <li>Explain what a point <math>(x, y)</math> on the graph of a proportional relationship means in terms of the situation.</li> <li>Solve problems involving ratios, rates, percentages and proportional relationships.</li> </ul>	<p><b>7.RP.A</b> 7.RP.A.2a 7.RP.A.2c  7.RP.A.3</p>
Number Sense and Operations	<p><b>Apply and extend previous understandings of operations to add, subtract, multiply and divide rational numbers.</b></p> <ul style="list-style-type: none"> <li>Describe situations and show that a number and its opposite have a sum of 0 (additive inverses).</li> <li>Interpret sums and differences of rational numbers.</li> <li>Determine that a number and its reciprocal have a product of 1 (multiplicative inverse).</li> <li>Interpret products and quotients of rational numbers by describing real-world contexts.</li> <li>Solve problems involving the four arithmetic operations with rational numbers.</li> </ul>	<p><b>7.NS.A</b>  7.NS.A.1c  7.NS.A.1f 7.NS.A.2b 7.NS.A.2f 7.NS.A.3</p>
Expressions, Equations and Inequalities	<p><b>Use properties of operations to generate equivalent expressions.</b></p> <ul style="list-style-type: none"> <li>Apply properties of operations to simplify and to factor linear algebraic expressions with rational coefficients.</li> <li>Understand how to use equivalent expressions to clarify quantities in a problem.</li> </ul>	<p><b>7.EE.A</b> 7.EE.A.1  7.EE.A.2</p>
	<p><b>Solve problems using numerical and algebraic expressions and equations.</b></p> <ul style="list-style-type: none"> <li>Assess the reasonableness of answers using mental computation and estimation strategies.</li> <li>Write and/or solve two-step equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p, q</math> and <math>r</math> are rational numbers, and interpret the meaning of the solution in the context of the problem.</li> <li>Write, solve and/or graph inequalities of the form <math>px + q &gt; r</math> or <math>px + q &lt; r</math>, where <math>p, q</math> and <math>r</math> are rational numbers.</li> </ul>	<p><b>7.EE.B</b> 7.EE.B.3b  7.EE.B.4b  7.EE.B.4c</p>
Geometry and Measurement	<p><b>Draw and describe geometric figures and describe the relationships between them.</b></p> <ul style="list-style-type: none"> <li>Solve problems involving scale drawings of real objects and geometric figures, including computing actual lengths and areas from a scale drawing and reproducing the drawing at a different scale.</li> <li>Analyze the relationships among the circumference, the radius, the diameter, the area and Pi in a circle.</li> <li>Know and apply the formulas for circumference and area of circles to solve problems.</li> </ul>	<p><b>7.GM.A</b>  7.GM.A.1  7.GM.A.4a  7.GM.A.4b</p>
	<p><b>Apply and extend previous understanding of angle measure, area and volume.</b></p> <ul style="list-style-type: none"> <li>Find the area of triangles, quadrilaterals and other polygons composed of triangles and rectangles.</li> <li>Find the volume and surface area of prisms, pyramids and cylinders.</li> </ul>	<p><b>7.GM.B</b> 7.GM.B.6a  7.GM.B.6b</p>
Data, Statistics and Probability	<p><b>Use random sampling to draw inferences about a population.</b></p> <ul style="list-style-type: none"> <li>Understand that generalizations from a sample are valid only if the sample is representative of the population.</li> </ul>	<p><b>7.DSP.A</b> 7.DSP.A.1b</p>

# Mathematics Priority Standards: Grades K-12

	<b>Draw informal comparative inferences about two populations.</b> <ul style="list-style-type: none"><li>Analyze different data distributions using statistical measures.</li></ul>	<b>7.DSP.B</b> 7.DSP.B.3
	<b>Develop, use and evaluate probability models.</b> <ul style="list-style-type: none"><li>Determine probabilities of simple events.</li><li>Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.</li></ul>	<b>7.DSP.C</b> 7.DSP.C.5a 7.DSP.C.5b

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Grade 8 in Mathematics		
	Priority Standard	Priority Codes
Expressions, Equations and Inequalities	<b>Work with radicals and integer exponents.</b> <ul style="list-style-type: none"> <li>Know and apply the properties of integer exponents to generate equivalent expressions.</li> </ul>	<b>8.EE1.A</b> 8.EE1.A.1
	<b>Understand the connections between proportional relationships, lines and linear equations.</b> <ul style="list-style-type: none"> <li>Explain why the slope (<math>m</math>) is the same between any two distinct points on a non-vertical line in the Cartesian coordinate plane.</li> <li>Derive the equation <math>y = mx</math> for a line through the origin and the equation <math>y = mx + b</math> for a line intercepting the vertical axis at <math>b</math>.</li> </ul>	<b>8.EE1.B</b>  8.EE1.B.6a 8.EE1.B.6b
	<b>Analyze and solve linear equations and inequalities and pairs of simultaneous linear equations.</b> <ul style="list-style-type: none"> <li>Create and identify linear equations with one solution, infinitely many solutions or no solutions.</li> <li>Solve linear equations and inequalities with rational number coefficients, including equations and inequalities whose solutions require expanding expressions using the distributive property and combining like terms.</li> <li>Graph systems of linear equations and recognize the intersection as the solution to the system.</li> <li>Explain why solution(s) to a system of two linear equations in two variables correspond to point(s) of intersection of the graphs.</li> <li>Explain why systems of linear equations can have one solution, no solution or infinitely many solutions.</li> <li>Solve systems of two linear equations.</li> </ul>	<b>8.EE1.C</b>  8.EE1.C.7a 8.EE1.C.7b 8.EE1.C.8a 8.EE1.C.8b 8.EE1.C.8c 8.EE1.C.8d
Geometry and Measurement	<b>Understand congruence and similarity using physical models, transparencies or geometry software.</b> <ul style="list-style-type: none"> <li>Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates.</li> </ul>	<b>8.GM.A</b>  8.GM.A.3
	<b>Understand and apply the Pythagorean Theorem.</b> <ul style="list-style-type: none"> <li>Use models to demonstrate a proof of the Pythagorean Theorem and its converse.</li> </ul>	<b>8.GM.B</b> 8.GM.B.6
	<b>Solve problems involving volume of cones, pyramids and spheres.</b> <ul style="list-style-type: none"> <li>Understand the concept of surface area and find surface area of pyramids.</li> <li>Understand the concepts of volume and find the volume of pyramids, cones and spheres.</li> </ul>	<b>8.GM.C</b> 8.GM.C.9a 8.GM.C.9b
Functions	<b>Define, evaluate and compare functions.</b> <ul style="list-style-type: none"> <li>Determine if a relation is a function.</li> <li>Compare characteristics of two functions each represented in a different way.</li> </ul>	<b>8.F.A</b> 8.F.A.1b 8.F.A.2
	<b>Use functions to model relationships between quantities.</b> <ul style="list-style-type: none"> <li>Explain the parameters of a linear function based on the context of a problem.</li> <li>Describe the functional relationship between two quantities from a graph or a verbal description.</li> </ul>	<b>8.F.B</b> 8.F.B.4a 8.F.B.5

# Mathematics Priority Standards: Grades K-12

<b>Data, Statistics and Probability</b>	<b>Investigate patterns of association in bivariate data.</b> <ul style="list-style-type: none"><li>• <i>Interpret the parameters of a linear model of bivariate measurement data to solve problems.</i></li><li>• <i>Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.</i></li></ul>	<b>8.DSP.A</b> <i>8.DSP.A.3</i>  <i>8.DSP.A.4a</i>
---	---	---

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Algebra I in Mathematics		
	Priority Standard	Priority Codes
Seeing Structure in Expressions	<b>Interpret and use structure.</b> <ul style="list-style-type: none"> <li>Interpret the contextual meaning of individual terms or factors from a given problem that utilizes formulas or expressions.</li> <li>Analyze the structure of polynomials to create equivalent expressions or equations.</li> </ul>	A1.SSE.A A1.SSE.A.1  A1.SSE.A.2
	<b>Create equations that describe linear, quadratic and exponential relationships.</b> <ul style="list-style-type: none"> <li>Create equations and inequalities in one variable and use them to model and/or solve problems.</li> </ul>	A1.CED.A A1.CED.A.1
Reasoning with Equations and Inequalities	<b>Understand solving equations as a process, and solve equations and inequalities in one variable.</b> <ul style="list-style-type: none"> <li>Analyze different methods of solving quadratic equations.</li> </ul>	A1.REI.A  A1.REI.A.2c
	<b>Represent and solve linear and exponential equations and inequalities graphically.</b> <ul style="list-style-type: none"> <li>Explain that the graph of an equation in two variables is the set of all its solutions plotted in the Cartesian coordinate plane.</li> <li>Solve problems involving a system of linear inequalities.</li> </ul>	A1.REI.C  A1.REI.C.6  A1.REI.C.8
	<b>Interpret linear, quadratic and exponential functions in terms of the context.</b> <ul style="list-style-type: none"> <li>Using tables, graphs and verbal descriptions, interpret key characteristics of a function that models the relationship between two quantities.</li> </ul>	A1.IF.B A1.IF.B.3
Interpreting Functions	<b>Analyze linear, quadratic and exponential functions using different representations.</b> <ul style="list-style-type: none"> <li>Graph functions expressed symbolically and identify and interpret key features of the graph.</li> </ul>	A1.IF.C  A1.IF.C.7
	<b>Build new functions from existing functions (limited to linear, quadratic and exponential).</b> <ul style="list-style-type: none"> <li>Analyze the effect of translations and scale changes on functions.</li> </ul>	A1.BF.A  A1.BF.A.1
Linear, Quadratic and Exponential Models	<b>Construct and compare linear, quadratic and exponential models and solve problems.</b> <ul style="list-style-type: none"> <li>Construct linear, quadratic and exponential equations given graphs, verbal descriptions or tables.</li> </ul>	A1.LQE.A  A1.LQE.A.3
	<b>Use arithmetic and geometric sequences.</b> <ul style="list-style-type: none"> <li>Write arithmetic and geometric sequences in recursive and explicit forms, and use them to model situations and translate between the two forms.</li> </ul>	A1.LQE.B A1.LQE.B.4
Data and Statistics	<b>Summarize, represent and interpret data.</b> <ul style="list-style-type: none"> <li>Analyze and interpret graphical displays of data.</li> </ul>	A1.DS.A A1.DS.A.1

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Geometry in Mathematics		
	Priority Standard	Priority Codes
Congruence	<b>Experiment with transformations in the plane.</b> <ul style="list-style-type: none"> <li>Demonstrate the ability to rotate, reflect or translate a figure, and determine a possible sequence of transformations between two congruent figures.</li> </ul>	G.CO.A G.CO.A.5
	<b>Understand congruence in terms of rigid motions.</b> <ul style="list-style-type: none"> <li>Develop the definition of congruence in terms of rigid motions.</li> </ul>	G.CO.B G.CO.B.6
	<b>Prove geometric theorems.</b> <ul style="list-style-type: none"> <li>Prove theorems about polygons.</li> </ul>	G.CO.C G.CO.C.10
	<b>Make geometric constructions.</b> <ul style="list-style-type: none"> <li>Construct geometric figures using various tools and methods.</li> </ul>	G.CO.D G.CO.D.11
Similarity, Right Triangles, and Trigonometry	<b>Prove theorems involving similarity.</b> <ul style="list-style-type: none"> <li>Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.</li> </ul>	G.SRT.B G.SRT.B.4
	<b>Define trigonometric ratios, solve problems involving right triangles.</b> <ul style="list-style-type: none"> <li>Use trigonometric ratios and the Pythagorean Theorem to solve right triangles.</li> </ul>	G.SRT.C G.SRT.C.7
Expressing Geometric Properties with Equations	<b>Use coordinates to prove geometric theorems algebraically.</b> <ul style="list-style-type: none"> <li>Use coordinates to prove geometric theorems algebraically.</li> </ul>	G.GPE.B G.GPE.B.3
Geometric Measurement and Dimension	<b>Explain volume formulas and use them to solve problems.</b> <ul style="list-style-type: none"> <li>Use volume formulas for cylinders, pyramids, cones, spheres and composite figures to solve problems.</li> </ul>	G.GMD.A G.GMD.A.2
Modeling with Geometry	<b>Apply geometric concepts in modeling situations.</b> <ul style="list-style-type: none"> <li>Apply geometric methods to solve design mathematical modeling problems.</li> </ul>	G.MG.A G.MG.A.3
Conditional Probability and the Rules of Probability	<b>Understand independence and conditional probability and use them to interpret data.</b> <ul style="list-style-type: none"> <li>Understand the definition of independent events and use it to solve problems.</li> <li>Recognize and explain the concepts of conditional probability and independence in a context.</li> </ul>	G.CP.A  G.CP.A.2 G.CP.A.5

# Mathematics Priority Standards: Grades K-12

Leveraging Learning for Algebra II in Mathematics		
	Priority Standard	Priority Codes
Number and Quantity	<b>Use complex numbers.</b> <ul style="list-style-type: none"> <li>Know and apply the Fundamental Theorem of Algebra.</li> </ul>	A2.NQ.B A2.NQ.B.7
Seeing Structure in Expressions	<b>Define and use logarithms.</b> <ul style="list-style-type: none"> <li>Understand why logarithmic scales are used, and use them to solve problems.</li> </ul>	A2.SSE.A A2.SSE.A.4
Reasoning with Equations and Inequalities	<b>Solve equations and inequalities.</b> <ul style="list-style-type: none"> <li>Create and solve equations and inequalities, including those that involve absolute value.</li> </ul>	A2.REI.A A2.REI.A.1
	<b>Solve general systems of equations and inequalities.</b> <ul style="list-style-type: none"> <li>Create and solve systems of equations that may include non-linear equations and inequalities.</li> </ul>	A2.REI.B A2.REI.B.3
Arithmetic with Polynomials and Rationals	<b>Perform operations on polynomials and rational expressions.</b> <ul style="list-style-type: none"> <li>Understand the Remainder Theorem and use it to solve problems.</li> </ul>	A2.APR.A A2.APR.A.2
Interpreting Functions	<b>Use and interpret functions.</b> <ul style="list-style-type: none"> <li>Identify and interpret key characteristics of functions represented graphically, with tables and with algebraic symbolism to solve problems.</li> </ul>	A2.IF.A A2.IF.A.1
Building Functions	<b>Create new functions from existing functions.</b> <ul style="list-style-type: none"> <li>Create new functions by applying the four arithmetic operations and composition of functions (modifying the domain and range as necessary).</li> <li>Describe the effects of transformations algebraically and graphically, creating vertical and horizontal translations, vertical and horizontal reflections and dilations (expansions/compressions) for linear, quadratic, cubic, square and cube root, absolute value, exponential and logarithmic functions.</li> </ul>	A2.BF.A A2.BF.A.1  A2.BF.A.3
	<b>Use functions to model real-world problems.</b> <ul style="list-style-type: none"> <li>Create functions and use them to solve applications of quadratic and exponential function model problems.</li> </ul>	A2.FM.A A2.FM.A.1
Data and Statistics	<b>Make inferences and justify conclusions.</b> <ul style="list-style-type: none"> <li>Determine whether a specified model is consistent with a given data set.</li> <li>Use data from a sample to estimate characteristics of the population and recognize the meaning of the margin of error in these estimates.</li> </ul>	A2.DS.A A2.DS.A.2 A2.DS.A.4
	<b>Fit a data set to a normal distribution.</b> <ul style="list-style-type: none"> <li>Know and use the characteristics of normally distributed data sets; predict what percentage of the data will be above or below a given value that is a multiple of standard deviations above or below the mean.</li> </ul>	A2.DS.B A2.DS.B.8