

# PK Math Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Approaches math with enthusiasm</li> <li>❖ Recognizes the usefulness of math in everyday tasks</li> <li>❖ Uses math to solve problems in the context of the classroom and home experiences</li> <li>❖ Represents mathematical concepts using manipulatives</li> <li>❖ Uses math related skills, such as sorting, counting, and matching in the course of everyday classroom experiences</li> <li>❖ Uses math terms in the course of everyday conversations</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can approach math with enthusiasm.</li> <li><input type="checkbox"/> I can recognize the usefulness of math</li> <li><input type="checkbox"/> I can use math to solve problems in the classroom.</li> <li><input type="checkbox"/> I can use math to solve problems outside the classroom.</li> <li><input type="checkbox"/> I can represent a mathematical concept using manipulatives.</li> <li><input type="checkbox"/> I can use math related skills in the course of everyday classroom experiences.</li> <li><input type="checkbox"/> I can use math terms in everyday conversations.</li> </ul>
<b>COUNTING AND CARDINALITY</b>	<ul style="list-style-type: none"> <li>❖ Rote counts to 20 and beyond by ones with increasing accuracy</li> <li>❖ Recognizes and names written numerals 0-10</li> <li>❖ Subitizes to determine how many</li> <li>❖ Recognizes the relationship between numbers and quantities; connect counting to cardinality</li> <li>❖ Shows understanding that the last number name spoken tells the number of objects counted up to 10</li> <li>❖ Shows understanding that the numbers of objects is the same regardless of their arrangement or the order in which they were counted</li> <li>❖ Begins to write number symbols 0-10</li> <li>❖ Identifies whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group up to 10</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can count to 20 and beyond by ones</li> <li><input type="checkbox"/> I can recognize written numerals 0-10. I can name written numerals 0-10</li> <li><input type="checkbox"/> I can subitize to determine how many</li> <li><input type="checkbox"/> I can recognize the relationship between numbers and quantities.</li> <li><input type="checkbox"/> I can connect counting to cardinality.</li> <li><input type="checkbox"/> I can show understanding that the last number name spoken tells the number of objects counted (up to 100)</li> <li><input type="checkbox"/> I can demonstrate understanding that the number of objects is the same, regardless of their arrangement or the order in which they were counted.</li> <li><input type="checkbox"/> I can begin to write number symbols (0-10)</li> <li><input type="checkbox"/> I can identify whether the number of objects in one group is greater than, equal to or less than the number of objects in another group</li> </ul>

<p><b>OPERATIONS AND ALGEBRAIC THINKING</b></p>	<ul style="list-style-type: none"> <li>❖ Associates quantity with a number name or written numeral</li> <li>❖ Counts using 1:1 correspondence with increasing accuracy</li> <li>❖ Represents addition and subtraction with fingers, drawing, acting out situations and verbal explanation</li> <li>❖ Uses concrete objects to model real-world addition and subtraction up to 5</li> <li>❖ Acts out and solves story problems using sets of up to 10 objects</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can associate quantity with a number name or written numeral.</li> <li><input type="checkbox"/> I can count using 1:1 correspondence with increasing accuracy.</li> <li><input type="checkbox"/> I can represent addition and subtraction with fingers, drawing, acting out situations and verbal explanation.</li> <li><input type="checkbox"/> I can use concrete objects to model real-world addition up to 5. I can use concrete objects to model real-world subtraction up to 5.</li> <li><input type="checkbox"/> I can act out and solve story problems using sets of up to 10 objects</li> </ul>
<p><b>GEOMETRY</b></p>	<ul style="list-style-type: none"> <li>❖ Describes, sorts and classifies shapes using some attributes such as size, sides, and other properties</li> <li>❖ Discovers connections between formal geometric shapes and the surrounding environment</li> <li>❖ Combines materials to make three dimensional and two dimensional shapes</li> <li>❖ Breaks down shapes into parts and wholes</li> <li>❖ Initiates activities that indicate understanding of directionality</li> <li>❖ Uses orientation and directional words such as slides, flips and turns and shapes are manipulated</li> <li>❖ Uses symbols and/or objects to indicate beginning understanding of relative positions in space</li> <li>❖ Demonstrates or describes relative positions of objects, using words such as up, down, beside, over</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can describe shapes using some attributes. I can sort shapes using some attributes. I can classify shapes using some attributes.</li> <li><input type="checkbox"/> I can discover connections between formal geometric shapes and my surrounding environment.</li> <li><input type="checkbox"/> I can combine materials to make 3D and 2D shapes</li> <li><input type="checkbox"/> I can break down shapes into parts and wholes</li> <li><input type="checkbox"/> I can initiate activities that indicate understanding of directionality</li> <li><input type="checkbox"/> I can use orientation and directional words.</li> <li><input type="checkbox"/> I can use symbols and/or objects to indicate a beginning understanding of relative positions in space.</li> <li><input type="checkbox"/> I can demonstrate or describe relative positions of objects</li> </ul>

## MEASUREMENT AND DATA

- ❖ Identifies and compares measurable attributes of everyday objects using appropriate vocabulary
- ❖ Begins to identify such words as first, next and last
- ❖ Uses discrete attributes to order and seriate materials
- ❖ Recognizes duplicates creates and extends simple patterns using objects
- ❖ Uses past and future tenses and time words appropriately
- ❖ Begins to understand concepts such as yesterday, today and tomorrow
- ❖ Responds to questions that can be answered through data analysis
- ❖ Represents data using simple charts and graphs
- ❖ Uses non standard units of measurement to measure objects; notices similarities and differences
- ❖ Connects measurement terms and concepts in everyday life

- ❑ I can identify measurable attributes of everyday objects using appropriate vocabulary. I can compare measurable attributes of everyday objects using appropriate vocabulary.
- ❑ I can begin to identify such words as first, next and last
- ❑ I can use discrete attributes to order and seriate materials
- ❑ I can recognize duplicates. I can extend simple patterns using objects.
- ❑ I can use past tense appropriately. I can use future tense appropriately. I can use time words appropriately.
- ❑ I can begin to understand concepts such as yesterday, today and tomorrow.
- ❑ I can respond to questions through data analysis I can represent data . using simple charts and graphs.
- ❑ I can use non-standard units of measurement to measure objects. I notice similarities and differences.
- ❑ I connect measurement terms and concepts in everyday life.

# Kindergarten Math Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Makes sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>COUNTING AND CARDINALITY</b>	<ul style="list-style-type: none"> <li>❖ w number names and the count sequence.</li> <li>❖ Count to tell the number of objects.</li> <li>❖ Compare numbers.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can say the names of the numbers and I can count them</li> <li><input type="checkbox"/> I can count to determine the number of objects</li> <li><input type="checkbox"/> I can compare numbers</li> </ul>
<b>NUMBERS AND OPERATIONS IN BASE TEN</b>	<ul style="list-style-type: none"> <li>❖ Work with numbers 11-19 to gain foundations for place value</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> can successfully work with numbers 11-10</li> </ul>
<b>OPERATIONS AND ALGEBRAIC THINKING</b>	<ul style="list-style-type: none"> <li>❖ Understand addition as putting together and adding to, and understand subtraction as taking apart and from</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can add by putting together and adding to</li> <li><input type="checkbox"/> I can subtract by taking apart and taking from</li> </ul>

<b>GEOMETRY</b>	<ul style="list-style-type: none"> <li>❖ Identify and describe shapes.</li> <li>❖ Analyze, compare, create, and compose shapes.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can identify shapes</li> <li><input type="checkbox"/> I can describe shapes</li> <li><input type="checkbox"/> I can analyze shapes</li> <li><input type="checkbox"/> I can compare shapes</li> <li><input type="checkbox"/> I can create shapes</li> <li><input type="checkbox"/> I can compose shape</li> </ul>
<b>MEASUREMENT AND DATA</b>	<ul style="list-style-type: none"> <li>❖ Describe and compare measurable attributes.</li> <li>❖ Classify objects and count the number of objects in each category</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can describe measurable attributes</li> <li><input type="checkbox"/> I can compare measurable attributes</li> <li><input type="checkbox"/> I can classify objects</li> <li><input type="checkbox"/> I can count the number of objects in each category</li> </ul>

# Grade 1 Math Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>NUMBER AND OPERATIONS IN BASE TEN</b>	<ul style="list-style-type: none"> <li>❖ Extend the counting sequence</li> <li>❖ Understand Place Value</li> <li>❖ Use Place value understanding and properties of operations to add and subtract</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can extend my counting sequence beyond 20</li> <li><input type="checkbox"/> I can demonstrate place value</li> <li><input type="checkbox"/> I can use my understanding of place value to add</li> <li><input type="checkbox"/> I can use my understanding of place value to subtract</li> </ul>
<b>OPERATIONS AND ALGEBRAIC THINKING</b>	<ul style="list-style-type: none"> <li>❖ Represent and solve problems involving addition and subtraction</li> <li>❖ Understand and apply properties of operations and the relationship between addition and subtraction</li> <li>❖ Add and subtract within 20</li> <li>❖ Work with addition and subtraction equations</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can successfully solve addition problems</li> <li><input type="checkbox"/> I can successfully solve subtraction problems</li> <li><input type="checkbox"/> I can understand the difference between addition and subtraction</li> <li><input type="checkbox"/> I can add and subtract within 20</li> </ul>

<p><b>GEOMETRY</b></p>	<ul style="list-style-type: none"> <li>❖ Reason with Shapes and their attributes</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I understand the defining components of a shape</li> <li><input type="checkbox"/> I can build shapes with defining components</li> <li><input type="checkbox"/> I can draw shapes with defining attributes</li> <li><input type="checkbox"/> I can compose two dimensional shapes</li> <li><input type="checkbox"/> I can compose three dimensional shapes</li> <li><input type="checkbox"/> I can break up circles and rectangles into two and four equal shares</li> <li><input type="checkbox"/> I can use the words fourths, halves and quarters</li> <li><input type="checkbox"/> I can use the phrase half of, fourth of and quarter of</li> <li><input type="checkbox"/> I can describe the whole as to or four of the shares</li> <li><input type="checkbox"/> I can describe that breaking a shape down into shares creates smaller shares</li> </ul>
<p><b>MEASUREMENT AND DATA</b></p>	<ul style="list-style-type: none"> <li>❖ Measure lengths indirectly and by iterating length units</li> <li>❖ Tell and write time</li> <li>❖ Represent and interpret data</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can put three objects in order by length</li> <li><input type="checkbox"/> I can compare the length of two objects by using a third object</li> <li><input type="checkbox"/> I can express the length of an object as a whole number of units by laying multiple units of a shorter object end to end</li> <li><input type="checkbox"/> I can tell time in hours and half hours using analog clock</li> <li><input type="checkbox"/> I can tell time in hours and half hours using digital clock</li> <li><input type="checkbox"/> I can write time in hours and half hours using analog clock</li> <li><input type="checkbox"/> I can write time in hours and half hours using digital clock</li> <li><input type="checkbox"/> I can ask and answer questions about the total number of data points</li> <li><input type="checkbox"/> I can ask and answer how many in each category</li> <li><input type="checkbox"/> I can ask and answer how many more or less are in one category than in another</li> </ul>

# Grade 2 Math Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>NUMBER AND OPERATIONS IN BASE TEN</b>	<ul style="list-style-type: none"> <li>❖ Understand Place Value</li> <li>❖ Use Place Value understanding and properties of operations to add and subtract</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can show that a 3 digit number represent hundreds tens and ones</li> <li><input type="checkbox"/> I can bundle 100</li> <li><input type="checkbox"/> I understand that 100, 200, 300, etc represent one-9 hundreds</li> <li><input type="checkbox"/> I can count within 1000</li> <li><input type="checkbox"/> I can skip count by 5, 10 and 100</li> <li><input type="checkbox"/> I can read numbers to 1000</li> <li><input type="checkbox"/> I can write numbers to 1000</li> <li><input type="checkbox"/> I can compare two 3 digit numbers based on understanding hundreds, tens and ones</li> <li><input type="checkbox"/> I can fluently add and subtract within 100</li> <li><input type="checkbox"/> I understand the relationship between addition and subtraction</li> <li><input type="checkbox"/> I can add up to four digit numbers</li> <li><input type="checkbox"/> I can add and subtract within 1000</li> <li><input type="checkbox"/> I can mentally add 10 or 100 to a given number(100-900)</li> </ul>

		<ul style="list-style-type: none"> <li><input type="checkbox"/> I can mentally subtract 10 or 100 from a given number (100-900)</li> <li><input type="checkbox"/> I can explain why addition and subtraction strategies work</li> </ul>
<p><b>OPERATIONS AND ALGEBRAIC THINKING</b></p>	<ul style="list-style-type: none"> <li>❖ Represent and solve problems involving addition and subtraction</li> <li>❖ Add and subtract within 20</li> <li>❖ Work with equal groups of objects to gain foundations for multiplication</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can use addition and subtraction within 100 to solve one and two step word problems</li> <li><input type="checkbox"/> I can fluently add and subtract within 20 using mental strategies</li> <li><input type="checkbox"/> I can memorize all sums of two one-digit numbers</li> <li><input type="checkbox"/> I can determine whether a group of objects (up to 20) has an odd or even number of members</li> <li><input type="checkbox"/> I can write an equation to express an even number as a sum of two equal numbers</li> <li><input type="checkbox"/> I can use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns</li> </ul>
<p><b>GEOMETRY</b></p>	<ul style="list-style-type: none"> <li>❖ Reason with shapes and their attributes</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can recognize shapes having specific attributes</li> <li><input type="checkbox"/> I can draw shapes having specific attributes</li> <li><input type="checkbox"/> I can partition a rectangle into rows and columns of the same sized squares and count to find the total number of them</li> <li><input type="checkbox"/> I can partition circles into two, three or four equal shares describe the shares using the word halves, thirds, half of, a third of, etc</li> <li><input type="checkbox"/> I can recognize that equal shares of identical wholes need not have the same shapes</li> </ul>

<p><b>MEASUREMENT AND DATA</b></p>	<ul style="list-style-type: none"> <li>❖ Measure and estimate lengths in standard units</li> <li>❖ Relate addition and subtraction to length</li> <li>❖ Work with time and money</li> <li>❖ Represent and Interpret Data</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can measure the length of an object by selecting and using appropriate tools</li> <li>❑ I can measure the length of an object twice, using two different units of measurement</li> <li>❑ I can describe how the two measurements relate to the size of the unit</li> <li>❑ I can estimate lengths using inches, feet, centimeters and meters</li> <li>❑ I can measure to determine how much longer one object is than another</li> <li>❑ I can use addition and subtraction within 100 to solve word problems</li> <li>❑ I can represent whole numbers as lengths from 0 and represent whole number sums and differences within 100 on a number line diagram</li> </ul>
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# Grade 3 Math Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>NUMBER AND OPERATIONS IN BASE TEN</b>	<ul style="list-style-type: none"> <li>❖ Use place value understanding and properties of operations to perform multi-digit arithmetic</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can use my understanding of place value to round whole numbers to the nearest 10 or 100</li> <li><input type="checkbox"/> I can fluently add within 1000</li> <li><input type="checkbox"/> I can fluently subtract within 1000</li> <li><input type="checkbox"/> I can multiply one digit whole numbers by multiples of 10 in the range of 10-90</li> </ul>
<b>OPERATIONS AND ALGEBRAIC THINKING</b>	<ul style="list-style-type: none"> <li>❖ Represent and solve problems involving multiplication and division</li> <li>❖ Understand properties of multiplication and the relationship between multiplication and division</li> <li>❖ Multiply and divide within 100</li> <li>❖ Solve Problems involving the four operations, and identify and explain patterns in mathematics</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can interpret products of whole numbers</li> <li><input type="checkbox"/> I can interpret whole number quotients of whole numbers</li> <li><input type="checkbox"/> I can use multiplication and division within 100 to solve word problems</li> <li><input type="checkbox"/> I can determine the unknown whole number in a multiplication or division equation relating three whole numbers</li> <li><input type="checkbox"/> I can apply properties of operations as strategies to multiply and divide</li> <li><input type="checkbox"/> I can understand division as an “unknown factor”</li> </ul>

		<p>problem</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I can fluently multiply and divide within 100</li> <li><input type="checkbox"/> I can solve two step word problems using the four operations</li> <li><input type="checkbox"/> I can assess the reasonableness of answers using mental computation and estimation strategies including rounding</li> <li><input type="checkbox"/> I can identify arithmetic patterns and explain them using the properties of operations</li> </ul>
<p><b>GEOMETRY</b></p>	<ul style="list-style-type: none"> <li>❖ Reason with shapes and their attributes</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can recognize that shapes in different categories may share attributes</li> <li><input type="checkbox"/> I can draw examples of quadrilaterals</li> <li><input type="checkbox"/> I can partition shapes into parts with equal areas</li> <li><input type="checkbox"/> I can express the area of each part as a unit fraction of the whole</li> </ul>

<p><b>MEASUREMENT AND DATA</b></p>	<ul style="list-style-type: none"> <li>❖ Solve problems involving measurement and estimation</li> <li>❖ Represent and interpret data</li> <li>❖ Geometric measurement: understand concepts of area and relate area to multiplication and to addition</li> <li>❖ Geometric measurement: recognize perimeter</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can tell time to the nearest minute and measure time intervals in minutes</li> <li>❑ I can write time to the nearest minute and measure time intervals in minutes</li> <li>❑ I can solve word problems involving addition and subtraction of time intervals in minutes</li> <li>❑ I can measure and estimate liquid volumes and masses of objects using standard units of grams, kilograms and litres</li> <li>❑ I can add, subtract, multiply or divide to solve one-step word problems involving masses or volumes in the same units</li> <li>❑ I can draw a scaled picture graph to represent a data set</li> <li>❑ I can generate measurement data by measuring length using rulers marked with halves and fourths of an inch</li> <li>❑ I can recognize area as an attribute of a plane figure</li> <li>❑ I can understand the concept of area measurement</li> <li>❑ I can measure area by counting unit squares</li> <li>❑ I can relate area to the operations of multiplication and addition</li> <li>❑ I can solve real world and mathematical problems involving perimeters of polygons</li> </ul>
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# Grade 4 Math Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>NUMBER AND OPERATIONS IN BASE TEN</b>	<ul style="list-style-type: none"> <li>❖ Generalize place value understanding for multi-digit whole numbers</li> <li>❖ Use place value understanding and properties of operations to perform multi-digit arithmetic</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right</li> <li><input type="checkbox"/> I can read and write multi-digit whole numbers using base-ten numerals, number names and expanded form</li> <li><input type="checkbox"/> I can use place value understanding to round multi digit whole numbers to any place</li> <li><input type="checkbox"/> I can fluently add and subtract multi digit whole numbers using the standard algorithm</li> <li><input type="checkbox"/> I can multiply a whole number of up to four digits by a one digit whole number and multiply two digit numbers using strategies based on place value and the properties of operations</li> <li><input type="checkbox"/> I can illustrate and explain the calculation by using equations, rectangular arrays and or area models</li> </ul>
<b>OPERATIONS</b>	<ul style="list-style-type: none"> <li>❖ Use the four operations with whole numbers</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can interpret a multiplication equation as a</li> </ul>

<p><b>AND ALGEBRAIC THINKING</b></p>	<p>to solve problems</p> <ul style="list-style-type: none"> <li>❖ Gain familiarity with factors and multiples</li> <li>❖ Generate and analyze patterns</li> </ul>	<p>comparison</p> <ul style="list-style-type: none"> <li>❑ I can multiple or divide to solve word problems by using drawings and equations with a symbol for the unknown number to present the problem</li> <li>❑ I can solve multi step word problems with whole numbers using the four operations</li> <li>❑ I can find all factor pairs for a hole number in the range 1-100</li> <li>❑ I can recognize that whose number is a multiple of each of its factors</li> <li>❑ I can generate a number or shape pattern that follows a given rule</li> </ul>
<p><b>GEOMETRY</b></p>	<ul style="list-style-type: none"> <li>❖ Draw and identify lines and angles and classify shapes by properties of their lines and angles</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can draw points, lines, line segments, rays, angles, perpendicular and parallel lines</li> <li>❑ I can classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines</li> <li>❑ I can recognize a line of symmetry for a two-dimensional figure</li> </ul>
<p><b>MEASUREMENT AND DATA</b></p>	<ul style="list-style-type: none"> <li>❖ Solve problems involving measurement and conversion of measurements</li> <li>❖ Represent and interpret data</li> <li>❖ Geometric Measurement: understand concepts of angle and measure angles</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can use relative sizes of measurement units within one system of units</li> <li>❑ I can use the four operations to solve word problems, involving distances, intervals of time, liquid volumes, masses of objects and money</li> <li>❑ I can apply the area and perimeter formulas for rectangles in real world and mathematical problems</li> <li>❑ I can make a line plot to display a data set of measurement sin fractions of a unit</li> <li>❑ I can recognize angles as geometric shapes that are formed wherever two rays share a common endpoint and understand concept of angle measurement</li> <li>❑ I can measure angles i whole number degrees using a protractor</li> <li>❑ I can recognize angle measure as additive</li> </ul>

# Grade 5 Math Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>NUMBER AND OPERATIONS IN BASE TEN</b>	<ul style="list-style-type: none"> <li>❖ Understand the place value system</li> <li>❖ Perform operations with multi-digit whole numbers and with decimals to hundredths</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can recognize that in a multi digit number a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left</li> <li><input type="checkbox"/> I can explain patterns in the number of zeros of the product when multiplying a number by powers of 10</li> <li><input type="checkbox"/> I can read, write and compare decimals to thousandths</li> <li><input type="checkbox"/> I can use place value understanding to round decimals to any place</li> <li><input type="checkbox"/> I can fluently multiply multi-digit whole numbers using the standard algorithm</li> <li><input type="checkbox"/> I can find whole number quotients of whole numbers with up to four digit dividends and two digit divisors</li> <li><input type="checkbox"/> I can add, subtract multiply and divide decimals to hundredths using concrete models or drawings</li> </ul>

<p><b>OPERATIONS AND ALGEBRAIC THINKING</b></p>	<ul style="list-style-type: none"> <li>❖ Write and interpret numerical expressions</li> <li>❖ Analyze patterns and relationships</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can use parentheses, brackets or braces in numerical expressions and evaluate expressions with these symbols</li> <li>❑ I can write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them</li> <li>❑ I can generate two numerical patterns using two given rules</li> <li>❑ I can form ordered pairs consisting of corresponding terms from the two patterns</li> <li>❑ I can graph the ordered pairs on a coordinate plane</li> </ul>
<p><b>GEOMETRY</b></p>	<ul style="list-style-type: none"> <li>❖ Graph points on the coordinate plane to solve real-world and mathematical problems</li> <li>❖ Classify two-dimensional figures into categories based on their properties</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can use a pair of perpendicular number lines(axes) to define a coordinate system</li> <li>❑ I can represent real world and mathematical problems by graphing points and interpreting coordinate values of points</li> <li>❑ I can understand the attributes of two-dimensional figures also belong to all subcategories of that category</li> <li>❑ I can classify two dimensional figures in a hierarchy based on properties</li> </ul>
<p><b>MEASUREMENT AND DATA</b></p>	<ul style="list-style-type: none"> <li>❖ Convert like measurement units within a given measurement system</li> <li>❖ Represent and interpret data</li> <li>❖ Geometric measurement: understand concepts of volume</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can convert among different-sized measurement units within a given measurement system</li> <li>❑ I can make a line plot to display a data set of measurements in fractions of a unit</li> <li>❑ I can use operations on fractions for this grade to solve problems involving information presented in line plots</li> <li>❑ I can recognize volume as an attribute of solid figures and understand the concept of volume measurement</li> <li>❑ Inc and measure volumes by counting unit cutes</li> <li>❑ I can relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume</li> </ul>

# Grade 6 Math Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>THE NUMBER SYSTEM</b>	<ul style="list-style-type: none"> <li>❖ Apply and extend previous understandings of multiplication and division to divide fractions by fractions.</li> <li>❖ Compute fluently with multi-digit numbers and find common factors and multiples</li> <li>❖ Apply and extend previous understandings of numbers to the system of rational numbers.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions.</li> <li><input type="checkbox"/> I can fluently divide multi-digit numbers using the standard algorithm.</li> <li><input type="checkbox"/> I can fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</li> <li><input type="checkbox"/> I can find the greatest common factor of two whole numbers less than or equal to 100.</li> <li><input type="checkbox"/> I can find the least common multiple of two whole numbers less than or equal to 12.</li> <li><input type="checkbox"/> I can explain how positive and negative numbers are used together to describe quantities having opposite directions or values.</li> <li><input type="checkbox"/> I can use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</li> </ul>

		<ul style="list-style-type: none"> <li>❑ I can recognize a rational number as a point on the number line.</li> <li>❑ I can extend number line diagrams and coordinate axes to represent points on the line and in the plane with negative number coordinates.</li> <li>❑ I can interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.</li> <li>❑ I can graph points in all four quadrants of the coordinate plane and use coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</li> </ul>
<p><b>EXPRESSIONS AND EQUATIONS</b></p>	<ul style="list-style-type: none"> <li>❖ Apply and extend previous understandings of arithmetic to algebraic expressions.</li> <li>❖ Reason about and solve one-variable equations and inequalities.</li> <li>❖ Represent and analyze quantitative relationships between dependent and independent variables</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can write and evaluate numerical expressions involving whole-number exponents.</li> <li>❑ I can write, read, and evaluate expressions in which letters stand for numbers.</li> <li>❑ I can apply the properties of operations to generate equivalent expressions.</li> <li>❑ I can identify when two expressions are equivalent.</li> <li>❑ I can use substitution to determine whether a given number in a specified set makes an equation or inequality true.</li> <li>❑ I can use variables to represent numbers and write expressions when solving a real-world or mathematical problem.</li> <li>❑ I can write and solve equations of the form <math>x + p = q</math> and <math>px = q</math> for cases in which <math>p</math>, <math>q</math> and <math>x</math> are all nonnegative rational numbers.</li> <li>❑ I can write an inequality of the form <math>x &gt; c</math> or <math>x &lt; c</math> to represent a constraint or condition in a real-world or mathematical problem. I recognize that inequalities of the form <math>x &gt; c</math> or <math>x &lt; c</math> have infinitely many solutions and I can represent solutions of such inequalities on number line diagrams.</li> <li>❑ I can use variables to represent two quantities in a</li> </ul>

		<p>real-world problem that change in relationship to one another.</p> <ul style="list-style-type: none"> <li>❑ I can write an equation to express one quantity (dependent variable), in terms of the other quantity, (independent variable).</li> <li>❑ I can analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation</li> </ul>
<b>GEOMETRY</b>	<ul style="list-style-type: none"> <li>❖ Solve real-world and mathematical problems involving area, surface area, and volume.</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can find the area of triangles, special quadrilaterals and polygons by composing into rectangles and decomposing into triangles or other shapes.</li> <li>❑ I can calculate the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes and using a formula.</li> <li>❑ I can draw polygons in the coordinate plane and use coordinates to find the length of a side.</li> <li>❑ I can represent 3 dimensional figures using nets made up of rectangles and triangles and use the nets to find the surface area.</li> </ul>
<b>STATISTICS AND PROBABILITY</b>	<ul style="list-style-type: none"> <li>❖ Develop understanding of statistical variability.</li> <li>❖ Summarize and describe distributions.</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.</li> <li>❑ I can 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.</li> <li>❑ I can recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.</li> <li>❑ I can display numerical data in plots on a number line, including dot plots, histograms, and box plots.</li> <li>❑ I can summarize numerical data sets in relation to their context.</li> <li>❑ I can give quantitative measures of center (median</li> </ul>

		<p>and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern.</p> <ul style="list-style-type: none"> <li>❑ I can relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.</li> </ul>
<p><b>RATIOS AND PROPORTIONAL RELATIONSHIPS</b></p>	<ul style="list-style-type: none"> <li>❖ Understand ratio concepts and use ratio reasoning to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can use ratio language to describe a relationship between two quantities.</li> <li>❑ I understand the concept of a unit rate <math>a/b</math> associated with a ratio <math>a:b</math> with <math>b \neq 0</math>. I can use rate language in the context of a ratio relationship.</li> <li>❑ I can make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. I can use tables to compare ratios.</li> <li>❑ I can solve unit rate problems including those involving unit pricing and constant speed.</li> <li>❑ I can find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means <math>30/100</math> times the quantity); I can solve problems involving finding the whole, given a part and the percent.</li> <li>❑ I can use ratio reasoning to convert measurement units; I can manipulate and transform units appropriately when multiplying or dividing quantities.</li> </ul>

# GRADE 7 MATH STANDARDS

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>THE NUMBER SYSTEM</b>	<ul style="list-style-type: none"> <li>❖ Apply and extend previous understandings of operations with whole numbers to rational numbers.</li> <li>❖ numbers.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can add and subtract rational numbers and represent addition and subtraction on a horizontal or vertical number line diagram.</li> <li><input type="checkbox"/> I can multiply and divide rational numbers.</li> <li><input type="checkbox"/> I can solve real-world and mathematical problems involving the four operations with rational numbers.</li> </ul>
<b>EXPRESSIONS AND EQUATIONS</b>	<ul style="list-style-type: none"> <li>❖ Use properties of operations to generate equivalent expressions.</li> <li>❖ Solve real life and mathematical problems using numeric and algebraic expressions and equations.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can use properties of operations as strategies to add, subtract, factor and expand linear equations with rational coefficients.</li> <li><input type="checkbox"/> I understand that rewriting an equation in a problem context can show how quantities within it are related.</li> <li><input type="checkbox"/> I can solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form</li> <li><input type="checkbox"/> I can write and solve an equation or inequality that represents a real-life situation.</li> </ul>

<p><b>GEOMETRY</b></p>	<ul style="list-style-type: none"> <li>❖ Draw, construct and describe geometrical figures and describe the relationships between them.</li> <li>❖ Solve real life and mathematical problems involving angle measure, area, surface area and volume.</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can solve problems involving scale drawings.</li> <li>❑ I can draw two-dimensional geometric shapes with given conditions.</li> <li>❑ I can describe two dimensional figures resulting from slicing three dimensional figures.</li> <li>❑ I know the formulas for area and circumference of a circle and can use them to solve problems.</li> <li>❑ I can use properties of angles to write and solve multistep problems for an unknown angle in a figure.</li> <li>❑ I can solve problems involving area, surface area, and volume of two and three dimensional figures composed of prisms and pyramids.</li> </ul>
<p><b>STATISTICS AND PROBABILITY</b></p>	<ul style="list-style-type: none"> <li>❖ Use random sampling to draw inferences about a population</li> <li>❖ Draw informal comparative inferences about two populations</li> <li>❖ Investigate chance processes and develop, use and evaluate probability models.</li> </ul>	<ul style="list-style-type: none"> <li>❑ I understand that the probability of a chance event is a number between 0 and 1.</li> <li>❑ I can approximate the probability of a chance event by collecting data and using it to make a prediction.</li> <li>❑ I can find the probability of events when the outcomes are not equally likely.</li> <li>❑ I can find probabilities of compound events using tools such as lists, tables, tree diagrams and simulation.</li> </ul>
<p><b>RATIOS AND PROPORTIONAL RELATIONSHIPS</b></p>	<ul style="list-style-type: none"> <li>❖ Analyze proportional relationships and use them to solve real world and mathematical problems.</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can recognize and represent proportional relationships between quantities in tables, graphs, equations and written descriptions.</li> <li>❑ I can compute unit rates and solve problems about ratios of fractions and decimals.</li> <li>❑ I can use proportional relationships to solve multistep ratio, rate, and percent problems</li> </ul>

# Grade 8 Math Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>THE NUMBER SYSTEM</b>	<ul style="list-style-type: none"> <li>❖ Know that there are numbers that are not rational, and approximate them by rational numbers.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can identify a number as rational or irrational.</li> <li><input type="checkbox"/> I can approximate and locate irrational numbers on a number line.</li> </ul>
<b>EXPRESSIONS AND EQUATIONS</b>	<ul style="list-style-type: none"> <li>❖ Work with radicals and integer exponents.</li> <li>❖ Understand the connections between proportional relationships, lines, and linear equations.</li> <li>❖ Analyze and solve linear equations and pairs of simultaneous linear equations</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can use properties of integer exponents to write equivalent numerical expressions.</li> <li><input type="checkbox"/> I can evaluate square roots and cube roots of perfect squares and perfect cubes.</li> <li><input type="checkbox"/> I can use scientific notation to to express very large or very small numbers, and perform operations involving scientific notation</li> <li><input type="checkbox"/> I can graph a linear relationship. I can identify the rate of change (slope) and the y-intercept from a table, graph or equation, and explain their meaning for the situation. I can identify solutions to equations in two variables.</li> <li><input type="checkbox"/> I can solve linear equations that include integers, the distributive property, and rational number solutions.</li> </ul>

		<ul style="list-style-type: none"> <li>❑ I can solve systems of two equations in two variables algebraically and graphically, if the given equations are in <math>y = mx + b</math> form.</li> </ul>
<p><b>GEOMETRY</b></p>	<ul style="list-style-type: none"> <li>❖ Understand congruence and similarity using transformations</li> <li>❖ Understand and apply the Pythagorean Theorem.</li> <li>❖ Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can describe and perform a sequence of rotations, reflections, and translations that will result in a congruent figure. .</li> <li>❑ I can describe and perform dilations that result in similar figures.</li> <li>❑ I can find missing side lengths and angles in similar figures.</li> <li>❑ I can identify congruent and supplementary angles that occur when parallel lines intersect with a transversal.</li> <li>❑ I can explain the Pythagorean Theorem and its converse.</li> <li>❑ I can use the Pythagorean Theorem to solve real life problems.</li> <li>❑ I can use the Pythagorean Theorem to find the distance between two points on a coordinate plane.</li> <li>❑ Given the formula, I can calculate the volume of cylinders, cones and spheres.</li> <li>❑ I can solve real life and mathematical problems involving the volume of cylinders, cones and spheres</li> </ul>

<p><b>STATISTICS AND PROBABILITY</b></p>	<ul style="list-style-type: none"> <li>❖ Investigate patterns of association in bivariate data, including scatter plots, linear equations and frequency tables.</li> <li>❖ Investigate patterns of association in bivariate data, including scatter plots, linear equations and frequency tables.</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can look for patterns in a scatter plot and identify: outliers, positive or negative association. I can construct a line of best fit from a scatter plot and make estimates based on the data.</li> <li>❑ I can look for patterns in a scatter plot and identify: outliers, positive or negative association. I can construct a line of best fit from a scatter plot and make estimates based on the data</li> </ul>
<p><b>FUNCTIONS</b></p>	<ul style="list-style-type: none"> <li>❖ Use functions to model relationships between quantities by defining, evaluation, and comparing functions.</li> </ul>	<ul style="list-style-type: none"> <li>❑ I can compare properties of two functions represented in different ways (table, graph, equation and written description).</li> <li>❑ I can identify linear and nonlinear functions.</li> <li>❑ I can identify the rate of change and the initial value of a function from a table, graph, equation, and written description.</li> <li>❑ I can sketch a graph to represent the qualitative properties of a function from a verbal description.</li> </ul>

# Algebra 1 Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>SEEING STRUCTURE IN EXPRESSIONS</b>	<ul style="list-style-type: none"> <li>❖ Interpret expressions that represent a quantity in terms of its context, including terms, factors and coefficients.</li> </ul> <p><b>Honors Algebra:</b></p> <ul style="list-style-type: none"> <li>❖ <i>Use the structure of an expression to identify ways to rewrite it.</i></li> <li>❖ <i>Factor a quadratic expression to reveal the zeros of the function it defines.</i></li> </ul>	<p>I can..</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify parts of an expression</li> <li><input type="checkbox"/> Identify a coefficient</li> <li><input type="checkbox"/> Identify a constant</li> <li><input type="checkbox"/> Identify a variable</li> <li><input type="checkbox"/> Explain what variables in an expression represent</li> <li><input type="checkbox"/> Explain what the coefficients in expressions represent</li> <li><input type="checkbox"/> Explain each term in a mathematical expression in context</li> <li><input type="checkbox"/> Write the prime factorization of integers and monomials</li> <li><input type="checkbox"/> Find the greatest common factor between integers and monomials</li> <li><input type="checkbox"/> Write a polynomial in standard form</li> <li><input type="checkbox"/> Manipulate polynomial equations so they equal zero</li> <li><input type="checkbox"/> Identify factors and sums of numbers</li> <li><input type="checkbox"/> Write a quadratic in standard form and identify the a, b and c terms</li> </ul>

		<input type="checkbox"/> Factor quadratic trinomials <input type="checkbox"/> Manipulate polynomial equations so they equal zero
<b>ARITHMETIC WITH POLYNOMIALS AND RATIONAL EXPRESSION</b>	<ul style="list-style-type: none"> <li>❖ Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Apply the distributive, commutative and associative properties to expressions with both numbers and variables</li> <li><input type="checkbox"/> Combine like terms</li> <li><input type="checkbox"/> Identify the degree of a monomial or polynomial.</li> <li><input type="checkbox"/> Identify the leading coefficient of a polynomial.</li> <li><input type="checkbox"/> Refer to a specific polynomial based on its degree and number of terms.</li> <li><input type="checkbox"/> Add, subtract and multiply with polynomials.</li> </ul>
<b>CREATING EQUATIONS</b>	<ul style="list-style-type: none"> <li>❖ Create equations and inequalities in one variable and use them to solve problems.</li> <li>❖ Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Differentiate between words that indicate different mathematical operations</li> <li><input type="checkbox"/> Solve one variable equations and inequalities</li> <li><input type="checkbox"/> Write equations and inequalities that involve multiple terms and operations.</li> <li><input type="checkbox"/> Label a coordinate grid</li> <li><input type="checkbox"/> Identify the x and y axis</li> <li><input type="checkbox"/> Draw a coordinate grid</li> <li><input type="checkbox"/> Plot coordinate pairs</li> <li><input type="checkbox"/> Differentiate between x and y values</li> <li><input type="checkbox"/> Connect points to form the graph of an equation</li> <li><input type="checkbox"/> Write equations using more than one variable</li> <li><input type="checkbox"/> Identify elements of an equation</li> <li><input type="checkbox"/> Represent the mathematical relationship between two variables</li> </ul>
<b>REASONING WITH EQUATIONS AND INEQUALITIES</b>	<ul style="list-style-type: none"> <li>❖ Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Recall the steps to solving one variable equations in order</li> <li><input type="checkbox"/> Use the distributive property</li> <li><input type="checkbox"/> Get all terms containing the same variable to the same side of an equation</li> </ul>

- method.
- ❖ Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
  - ❖ Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
  - ❖ Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

**Honors Algebra**

- ❖ *Solve quadratic equations by inspection, taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.*

- ❑ Understand why we must follow a procedure to solve an equation
- ❑ Explain what might be preventing us from carrying out the next step for solving
- ❑ Recall the steps to solving one variable equations in order
- ❑ Use the distributive property
- ❑ Get all terms containing the same variable to the same side of an equation
- ❑ Interpret an answer to determine how many solutions a problem has
- ❑ Graph a linear equation.
- ❑ Choose a reasonable scale for a graph, and accurately label the x and y axes.
- ❑ Write coordinate pairs.
- ❑ Use the distributive property.
- ❑ Identify the least common multiple between two numbers.
- ❑ Rearrange an equation to isolate a variable.
- ❑ Understand and employ properties of equality.
- ❑ Given a value for x or y, solve for the other variable.
- ❑ Comfortably add, subtract, multiple and divide with integers, decimals and fractions.
- ❑ Solve systems with elimination, substitution or by graphing.
- ❑ Set up a coordinate grid, including an accurate scale and appropriate labels.
- ❑ Find x- and y- intercepts and/or other coordinate pairs from looking at an equation.
- ❑ Generate coordinate pairs by plugging in values for either variable.
- ❑ Accurately plot ordered pairs on the coordinate plane.
- ❑ Identify the slope of a line by looking at an equation, or through other mathematical methods.
- ❑ Utilize slope to show how my graph increases or decreases.
- ❑ Connect two or more graphed coordinates to model a

		<p>linear function.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Determine whether my graph should include a solid or dotted line based on the inequality symbols used.</li> <li><input type="checkbox"/> Use algebraic techniques to simplify or manipulate a two variable inequality into a form that is reasonable to graph.</li> <li><input type="checkbox"/> Plug values into an inequality statement, and then determine if the statement is true or not.</li> <li><input type="checkbox"/> Identify the "solution" "root" or "zero" of a quadratic function as the x-intercepts.</li> <li><input type="checkbox"/> Understand that numbers have both positive and negative square roots.</li> <li><input type="checkbox"/> Factor quadratics.</li> <li><input type="checkbox"/> Simplify square roots</li> <li><input type="checkbox"/> Write a quadratic function in standard form and identify the a, b, and c terms.</li> <li><input type="checkbox"/> Employ substitution and order of operations to accurately use the quadratic formula</li> <li><input type="checkbox"/> Graph quadratic functions and estimate values on a graph.</li> </ul>
<p><b>INTERPRETING FUNCTIONS</b></p>	<ul style="list-style-type: none"> <li>❖ Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If <math>f</math> is a function and <math>x</math> is an element of its domain, then <math>f(x)</math> denotes the output corresponding to the input <math>x</math>. The graph of <math>f</math> is the graph of the equation <math>y = f(x)</math>.</li> <li>❖ Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.</li> <li>❖ For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Define a relation</li> <li><input type="checkbox"/> Define a function</li> <li><input type="checkbox"/> Determine if a relation is a function from a graph, table, set of ordered pairs and mapping diagram</li> <li><input type="checkbox"/> Define domain</li> <li><input type="checkbox"/> Define range</li> <li><input type="checkbox"/> Determine domain and range from a variety of representations (graph, equation, word problem, mapping diagram, table, ordered pairs)</li> <li><input type="checkbox"/> Writing inequalities</li> <li><input type="checkbox"/> Interval notation</li> <li><input type="checkbox"/> Identify a function</li> <li><input type="checkbox"/> Define function notation</li> <li><input type="checkbox"/> Identify the independent and dependent variables</li> </ul>

quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums.

- ❖ Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.
- ❖ Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

### **Honors Algebra**

- ❖ *Graph quadratic functions expressed symbolically and show key features of the graph such as intercepts, maxima, and minima.*

- ❑ Give examples of equations written using function notation
- ❑ Use substitution to evaluate functions for specific values
- ❑ Determine a reasonable domain (and input values) based on the context of a problem.
- ❑ Sketch a graph based on verbal descriptions of a function.
- ❑ Use the following vocabulary terms: increasing, decreasing, constant, rate, continuous, discrete, steady, rate
- ❑ Interpret different features of a graph or table
- ❑ Identify and interpret intercepts in context
- ❑ Use a graphical representation to determine the intervals on which a function is increasing, decreasing or remaining constant.
- ❑ Define domain and range
- ❑ Determine the domain and range of a function from a graph.
- ❑ Accurately write the domain and range of a function using inequality symbols, set notation or interval notation.
- ❑ Select an appropriate domain based on the context of a problem.
- ❑ Use the domain of a real world situation to determine the appropriate range for the quantitative relationship described.
- ❑ Graph a function using the identified domain and range as boundaries.
- ❑ Identify each of the three forms of linear equations (Standard, Point-Slope, Slope-Intercept).
- ❑ Describe the benefits of each form of linear equation.
- ❑ Recognize the slope, intercepts or any other critical information contained in each form of linear equation.
- ❑ Write a linear function given the relationship between two variables.
- ❑ Manipulate a linear equation so it is written in a

		<p>different form.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify quadratic functions from an equation, table or graph.</li> <li><input type="checkbox"/> Determine whether a quadratic function has a minimum or a maximum</li> <li><input type="checkbox"/> Graph a quadratic function written in standard form</li> <li><input type="checkbox"/> Find the domain and range of a quadratic function</li> <li><input type="checkbox"/> Identify the zeros of a quadratic function from its graph</li> <li><input type="checkbox"/> Identify the axis of symmetry and vertex of a quadratic function from its graph</li> </ul>
<p><b>INTERPRETING CATEGORICAL AND QUANTITATIVE DATA</b></p>	<ul style="list-style-type: none"> <li>❖ Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.</li> <li>❖ Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Label a coordinate grid</li> <li><input type="checkbox"/> Identify the x and y axis</li> <li><input type="checkbox"/> Draw a coordinate grid</li> <li><input type="checkbox"/> Plot coordinate pairs</li> <li><input type="checkbox"/> Differentiate between x and y values</li> <li><input type="checkbox"/> Generalize the shape of a scatter plot</li> <li><input type="checkbox"/> Use a scatter plot to reasonably predict a y value given an x value</li> <li><input type="checkbox"/> Describe the shape, strength, and direction of a correlation between two variables</li> <li><input type="checkbox"/> Identify the slope as the coefficient of a linear equation written in slope intercept or point slope form.</li> <li><input type="checkbox"/> Identify the y-intercept as the constant of a linear equation written in slope intercept form.</li> <li><input type="checkbox"/> Interpret the slope in context.</li> <li><input type="checkbox"/> Interpret the y-intercept in context.</li> <li><input type="checkbox"/> Determine the slope of a linear equation from a variety of forms.</li> <li><input type="checkbox"/> Determine the y-intercept of a linear equation from a variety of forms.</li> </ul>

<b>THE REAL NUMBER SYSTEM</b>	❖ Rewrite expressions involving radicals and rational exponents using the properties of exponents.	I can... <ul style="list-style-type: none"><li>❑ Identify and use positive, integer exponents to evaluate expressions, including expressions with a negative base</li><li>❑ Accurately apply and follow order of operations</li><li>❑ Identify numbers that are perfect squares, and find their square roots</li><li>❑ Multiply decimals and fractions</li><li>❑ Determine how negative numbers and parentheses can impact multiplication in an expression</li><li>❑ Create factor trees or prime factorizations for integers.</li></ul>
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# Geometry Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>CONGRUENCE</b>	<ul style="list-style-type: none"> <li>❖ Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.</li> <li>❖ Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.</li> <li>❖ Use and explain the definition of congruence (ASA, SAS, and SSS) in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify points, lines and planes.</li> <li><input type="checkbox"/> Identify intersecting lines and planes.</li> <li><input type="checkbox"/> Identify and classify angles by angle measure and side measures.</li> <li><input type="checkbox"/> Identify and use special pairs of angles.</li> <li><input type="checkbox"/> Identify perpendicular lines.</li> <li><input type="checkbox"/> Identify and name polygons.</li> <li><input type="checkbox"/> Name angle pairs formed by parallel lines and transversals.</li> <li><input type="checkbox"/> Use theorems to determine the relationships between specific pairs of angles.</li> <li><input type="checkbox"/> Identify and use parts of circles.</li> <li><input type="checkbox"/> Identify reflections, translations, and rotations. Verify congruence after a congruence transformation. Draw reflections, translations and rotations.</li> <li><input type="checkbox"/> Name and use corresponding parts of congruent</li> </ul>

	<p>corresponding pairs of angles are congruent.</p> <ul style="list-style-type: none"> <li>❖ Prove theorems about lines and angles, triangles, and parallelograms. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints; measures of interior angles of a triangle sum to <math>180^\circ</math>; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point; opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.</li> <li>❖ Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</li> </ul>	<p>polygons. Prove triangles congruent using the definition of congruence. Use the SSS, SAS, ASA, AAS Postulates to test for triangle congruence. Use properties of isosceles and equilateral triangles.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Name angle pairs formed by parallel lines.</li> <li><input type="checkbox"/> Use theorems to determine the relationships between specific pairs of angles.</li> <li><input type="checkbox"/> Use algebra to find angle measures.</li> <li><input type="checkbox"/> Apply Triangle Angle-Sum Theorem.</li> <li><input type="checkbox"/> Apply the Exterior Angle Theorem.</li> <li><input type="checkbox"/> Identify and use perpendicular and angle bisectors in triangles.</li> <li><input type="checkbox"/> Identify and use medians and altitudes in triangles.</li> <li><input type="checkbox"/> Find and use the sum of the measures of the interior and exterior angles of a polygon.</li> <li><input type="checkbox"/> Recognize and apply the properties of parallelogram</li> <li><input type="checkbox"/> copy an angle and a segment; bisect a segment and an angle; construct perpendicular through a point not on a line and through a point on a line; parallel line through a point not on a line; altitude and median of triangle; congruent triangles</li> </ul>
<p><b>SIMILARITY, RIGHT TRIANGLES AND TRIGONOMETRY</b></p>	<ul style="list-style-type: none"> <li>❖ Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Write ratios and proportions; use proportions to identify similar polygons; identify similar triangles</li> </ul>

	<p>similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.</p> <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> <li>❖ Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.</li> <li>❖ Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.</li> </ul>	<p>using Similarity Theorems</p> <ul style="list-style-type: none"> <li>❑ identify corresponding parts of congruent triangles and prove triangles congruent; identify similar polygons and use ratios and proportions to solve problems;</li> <li>❑ identify similar polygons and use ratios and proportions to solve problems;</li> <li>❑ use the Pythagorean Theorem; use properties of special right triangles; use trigonometry to find missing measures of triangles</li> </ul>
<p><b>CIRCLES</b></p>	<ul style="list-style-type: none"> <li>❖ Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li>❑ Identify and use parts of circle;</li> <li>❑ solve problems involving the circumference of a circle;</li> <li>❑ identify central angles, major arcs, minor arcs, semicircles, and find their measures;</li> <li>❑ find arc lengths;</li> <li>❑ recognize and use relationships between arcs and chords and diameters;</li> <li>❑ find measures of inscribed angles;</li> <li>❑ use properties of tangents</li> </ul>

<p><b>EXPRESSING GEOMETRIC PROPERTIES WITH EQUATIONS</b></p>	<ul style="list-style-type: none"> <li>❖ Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).</li> <li>❖ Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.*</li> <li>❖ Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point <math>(1, \sqrt{3})</math> lies on the circle centered at the origin and containing the point <math>(0, 2)</math>.</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li>❑ prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems</li> <li>❑ Use coordinates to prove simple geometric theorems algebraically; ; use coordinates to compute perimeters of polygons and areas of triangles and rectangles using the distance formula</li> <li>❑ identify and name polygons; find perimeter, circumference, and area of two-dimensional figures; find perimeters and areas of parallelogram and triangles</li> </ul>
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# Algebra 2 Standards

CATEGORY	STANDARD	Performance Indicator/I Can Statement
<b>MATHEMATICAL PRACTICES</b>	<ul style="list-style-type: none"> <li>❖ Make sense of problems and persevere in solving them</li> <li>❖ Reason abstractly and quantitatively</li> <li>❖ Construct viable arguments and critique the reasoning of others</li> <li>❖ Model with mathematics</li> <li>❖ Use appropriate tools strategically</li> <li>❖ Attend to precision</li> <li>❖ Look for and make use of structure</li> <li>❖ Look for and express regularity in repeated reasoning</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can understand problems presented to me</li> <li><input type="checkbox"/> I can keep trying until I solve a problem</li> <li><input type="checkbox"/> I can use abstract reasoning</li> <li><input type="checkbox"/> I can use quantitative reasoning</li> <li><input type="checkbox"/> I can construct an argument</li> <li><input type="checkbox"/> I can respectfully give a different idea about how to solve a problem than another student</li> <li><input type="checkbox"/> I can make math models</li> <li><input type="checkbox"/> I can successfully use math tools</li> <li><input type="checkbox"/> I can pay attention to details in my work</li> <li><input type="checkbox"/> I can look for structures</li> <li><input type="checkbox"/> I can make use of structures</li> <li><input type="checkbox"/> I can look for patterns in reasoning</li> <li><input type="checkbox"/> I can express patterns in reasoning</li> </ul>
<b>SEEING STRUCTURE IN EXPRESSIONS</b>	<ul style="list-style-type: none"> <li>❖ Use the structure of an expression to identify ways to rewrite it. For example, see <math>x^4 - y^4</math> as <math>(x^2)^2 - (y^2)^2</math>, thus recognizing it as a difference of squares that can be factored as <math>(x^2 - y^2)(x^2 + y^2)</math></li> <li>❖ Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.*</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify the parts of an expression and manipulate the expression into an equivalent form.</li> <li><input type="checkbox"/> choose and produce an equivalent form of an expression to explain properties of the quantity represented by the expression</li> </ul>
<b>CREATING EQUATIONS</b>	<ul style="list-style-type: none"> <li>❖ Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.</li> </ul>	<p>I can...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales for linear and quadratic equations</li> </ul>

**REASONING WITH EQUATIONS AND INEQUALITIES**

- ❖ Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
- ❖ Solve quadratic equations by inspection, taking square roots, completing the square, the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula give complex solutions and write them as  $a + bi$  for real numbers  $a$  and  $b$
- ❖ Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
- ❖ Explain why the  $x$ -coordinates of the points where the graphs of the equations  $y = f(x)$  and  $y = g(x)$  intersect are the solutions of the equation  $f(x) = g(x)$ ; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where  $f(x)$  and/or  $g(x)$  are linear, polynomial, rational, absolute value, and exponential.

- ❑ I can...solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
- ❑ solve quadratic equations by using two of three methods, factoring, completing the square, or the quadratic formula. Recognize when the solution results in a complex number.
- ❑ Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
- ❑ Explain why the  $x$ -coordinates of the points where the graphs of the equations  $y = f(x)$  and  $y = g(x)$  intersect are the solutions of the equation  $f(x) = g(x)$ ; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where  $f(x)$  and/or  $g(x)$  are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.\*