

**Common Core State Standard I Can Statements**  
**8<sup>th</sup> Grade Mathematics**

CCSS Key:

- The Number System (NS)
- Expressions & Equations (EE)
- Functions (F)
- Geometry (G)
- Statistics & Probability (SP)

<b>The Number System (NS)</b>	
<p>8.NS.1. Understand informally that every number has a decimal expansion; the rational numbers are those with decimal expansions that terminate in 0s or eventually repeat. Know that other numbers are called irrational.</p>	<p>I Can:</p> <p>8.NS.1.1 Distinguish between rational and irrational numbers</p> <p>8.NS.1.2 Recognize that a repeating/terminating decimal is a rational number</p> <p>8.NS.1.3 Recognize that all real numbers can be written in a decimal form</p> <p>8.NS.1.4 Write a fraction <math>a/b</math> as a repeating decimal by filling in the missing numbers.</p> <p>8.NS.1.5 Write a fraction using long division, <math>a \div b</math>.</p> <p>8.NS.1.6 Write a repeating decimal as a fraction.</p> <p>8.NS.1.7 Analyze and generate patterns and structure of repeating decimals.</p>
<p>8.NS.2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., <math>\pi^2</math>). <i>For example, by truncating the decimal expansion of <math>\sqrt{2}</math>, show that <math>\sqrt{2}</math> is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</i></p>	<p>I Can:</p> <p>8.NS.2.1 Estimate the value of irrational numbers</p> <p>8.NS.2.2 Locate rational numbers on a number line</p> <p>8.NS.2.3 Locate irrational numbers on a number line</p> <p>8.NS.2.4 Compare irrational numbers based upon rational approximations.</p> <p>8.NS.2.5 Understand that non-perfect square roots are irrational numbers.</p>

## Expressions & Equations (EE)

<p>8.EE.1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. <i>For example, <math>3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27</math>.</i></p>	<p>I Can:</p> <p><b>8.EE.1.1</b> Identify the properties of integer exponents (laws of exponents).</p> <p><b>8.EE.1.2</b> Apply properties of integer exponents when multiplying and dividing with like bases.</p> <p><b>8.EE.1.3</b> Simplify numerical expressions, by applying the one rule of exponents (<math>a^1 = a</math>)</p> <p><b>8.EE.1.4</b> Simplify numerical expressions, by applying the zero rule of exponents (<math>a^0 = 1</math>)</p> <p><b>8.EE.1.5</b> Simplify numerical expressions, by applying the product rule of exponents (<math>a^x \cdot a^y = a^{x+y}</math>)</p> <p><b>8.EE.1.6</b> Simplify numerical expressions, by applying the quotient rule of exponents (<math>a^x/a^y = a^{x-y}</math>)</p> <p><b>8.EE.1.7</b> Simplify numerical expressions, by applying the negative rule of exponents (<math>a^{-x} = 1/a^x</math>)</p> <p><b>8.EE.1.8</b> Simplify numerical expressions, by applying the power rule of exponents (<math>(a^x)^y = a^{x \cdot y}</math>)</p> <p><b>8.EE.1.9</b> Classify expression according to whether or not they are equivalent w/ one property, two properties, or three properties.</p>
<p>8.EE.2. Use square root and cube root symbols to represent solutions to equations of the form <math>x^2 = p</math> and <math>x^3 = p</math>, where <math>p</math> is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that <math>\sqrt{2}</math> is irrational.</p>	<p>I Can:</p> <p><b>8.EE.2.1</b> Recognize and evaluate perfect square roots in the form of 1, 4, 9, ..., 100</p> <p><b>8.EE.2.2</b> Recognize and evaluate perfect cube roots of 1, 8, 27, 64, and 125.</p> <p><b>8.EE.2.3</b> Recognize that non-perfect cubes are irrational numbers.</p> <p><b>8.EE.2.4</b> Recognize the inverse operation of squared is square rooting and solve mathematical problems</p> <p><b>8.EE.2.5</b> Solve equations of the form <math>x^2 = p</math> where <math>p</math> is a perfect square (ex., <math>x^2 = 4 \Rightarrow \sqrt{x^2} = \sqrt{4} \Rightarrow x = \pm 2</math>)</p> <p><b>8.EE.2.6</b> Recognize the inverse operation of cubed is cube rooting.</p> <p><b>8.EE.2.7</b> Solve equations of the form <math>x^3 = p</math> where <math>p</math> is a perfect cube (<math>x^3 = 27 \Rightarrow \sqrt[3]{x^3} = \sqrt[3]{27} \Rightarrow x = 3</math>).</p> <p><b>8.EE.2.8</b> Solve equations of the form <math>x^2 = p</math> and <math>x^3 = p</math>, representing solutions using <math>\sqrt{\quad}</math> symbols (ex. <math>x^2 = 5</math> where <math>x = \pm\sqrt{5}</math>).</p> <p><b>8.EE.2.9</b> Solve word problems and geometric problems such as finding the edge length of a cubical object with a given volume.</p>

Latest Revision 8/2/2013

*I Can* Statements are in draft form due to the iterative nature of the item development process

<p>8.EE.3. Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. <i>For example, estimate the population of the United States as <math>3 \times 10^8</math> and the population of the world as <math>7 \times 10^9</math>, and determine that the world population is more than 20 times larger.</i></p>	<p>I Can:</p> <p>8.EE.3.1 Write numbers in scientific notation</p> <p>8.EE.3.2 Apply the laws of exponents to the power of 10.</p> <p>8.EE.3.3 Use scientific notation to estimate very large quantities.</p> <p>8.EE.3.4 Use scientific notation to estimate very small quantities.</p> <p>8.EE.3.5 Use scientific notation to determine how many times as large one number is in relation to another.</p> <p>8.EE.3.6 Convert numbers from scientific notation to standard form</p> <p>8.EE.3.7 Convert numbers from standard to scientific notation.</p>
<p>8.EE.4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.</p>	<p>I Can:</p> <p>8.EE.4.1 Perform operations with numbers expressed in scientific notation without technology (Ex. <math>120 + 3 \times 10^4</math>).</p> <p>8.EE.4.2 Use scientific notation and choose for measurements of appropriate size of very large quantities.</p> <p>8.EE.4.3 Use scientific notation and choose for measurements of appropriate size of very small quantities.</p> <p>8.EE.4.4 Interpret scientific notation that has been generated by technology (ex. Recognize <math>3.7E-2</math> (or <math>3.7e-2</math>) from technology as <math>3.7 \times 10^{-2}</math>).</p> <p>8.EE.4.5 Perform operations with numbers expressed in scientific notation with technology (Ex. <math>120 + 3 \times 10^4</math>).</p>
<p>8.EE.5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. <i>For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.</i></p>	<p>I Can:</p> <p>8.EE.5.1 Determine the slope of an equation</p> <p>8.EE.5.2 Determine the slope of a graph</p> <p>8.EE.5.3 Compare the slopes of 2 graphs</p> <p>8.EE.5.4 Compare the slopes of 2 equations</p> <p>8.EE.5.5 Compare the slope of an equation to the slope of a graph</p> <p>8.EE.5.6 Identify slope is unit rate</p> <p>8.EE.5.7 Interpret the unit rate of a graph as the slope of a line.</p> <p>8.EE.5.8 Interpret the unit rate of a graph as the slope of a line in real-world problems.</p> <p>8.EE.5.9 Graph data illustrating slope as the unit rate with and without technology.</p>
<p>8.EE.6. Use similar triangles to explain why the slope <math>m</math> is the same between any two distinct points on a non-vertical line in the coordinate plane; 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</p>	<p>I Can:</p> <p>8.EE.6.1 Explain why triangles are similar</p> <p>8.EE.6.2 Determine the slope between two points</p> <p>8.EE.6.3 Determine the slope between two points on a coordinate plane</p> <p>8.EE.6.4 Determine the slope, looking at a graph</p> <p>8.EE.6.5 Determine the y-intercept, looking at a graph</p>

Latest Revision 8/2/2013

I Can Statements are in draft form due to the iterative nature of the item development process

<p>the vertical axis at <math>b</math>.</p>	<p><b>8.EE.6.6</b> Write the slope-intercept form of an equation of a line, looking at a graph</p> <p><b>8.EE.6.7</b> Construct a right triangle using two points on a non-vertical line to compare slopes</p> <p><b>8.EE.6.8</b> Identify <math>m</math> as the slope of a line and <math>b</math> as the point where the line intercepts the vertical axis (<math>y</math>-intercept)</p> <p><b>8.EE.6.9</b> Derive an equation <math>y=mx</math> for a line through the origin.</p> <p><b>8.EE.6.10</b> Derive an equation using the slope <math>m</math> and the <math>y</math>-intercept <math>b</math> in the form of <math>y=mx + b</math></p> <p><b>8.EE.6.11</b> Identify that the slope is the same between any two points on a line based on the proportional relationship of <math>m = \frac{\Delta y}{\Delta x}</math> or <math>\frac{\text{rise}}{\text{run}}</math></p>
<p><b>8.EE.7.</b> Solve linear equations in one variable.</p> <p>a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form <math>x = a</math>, <math>a = a</math>, or <math>a = b</math> results (where <math>a</math> and <math>b</math> are different numbers).</p> <p>b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.</p>	<p>I Can:</p> <p><b>8.EE.7.a.1</b> Recognize one-variable linear equations with one solution (<math>2x+3=7</math> or <math>5x + 3 = 3x + 7</math>).</p> <p><b>8.EE.7.a.2</b> Recognize one-variable linear equations with no solution (<math>5x + 3 = 5x + 7</math>).</p> <p><b>8.EE.7.a.3</b> Recognize one-variable linear equations with infinite solutions (<math>2x + 5 = 2x + 5</math>).</p> <p><b>8.EE.7.a.4</b> Give examples of one-variable linear equations with one solution.</p> <p><b>8.EE.7.a.5</b> Give examples of one-variable linear equations with no solution.</p> <p><b>8.EE.7.a.6</b> Give examples of one-variable linear equations with infinite solutions.</p> <p><b>8.EE.7.b.1</b> Solve multi-step one-variable linear equations, by combining like terms (w/rational coefficients).</p> <p><b>8.EE.7.b.2</b> Solve multi-step one-variable linear equations, involving distributive property (w/rational coefficients).</p> <p><b>8.EE.7.b.3</b> Solve real-world multi-step one-variable linear equations, involving distributive property (w/rational coefficients).</p> <p><b>8.EE.7.b.4</b> Solve real world one-variable equations, with variables on both sides of the equation (w/rational coefficients).</p> <p><b>8.EE.7.b.5</b> Solve multi-step one-variable linear equations, with variables on both sides of the equation (w/rational coefficient).</p>
<p><b>8.EE.8.</b> Analyze and solve pairs of simultaneous linear equations.</p> <p>a. Understand that solutions to a system of two linear equations in two variables</p>	<p>I Can:</p> <p><b>8.EE.8.a.1</b> Recognize the solution of a system of equations by reading a graph of two linear equations and locating the point of intersection</p> <p><b>8.EE.8.a.2</b> Recognize if there is no point of intersection, then the lines are parallel.</p>

Latest Revision 8/2/2013

*I Can Statements are in draft form due to the iterative nature of the item development process*

<p>correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.</p> <p>b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. <i>For example, <math>3x + 2y = 5</math> and <math>3x + 2y = 6</math> have no solution because <math>3x + 2y</math> cannot simultaneously be 5 and 6.</i></p> <p>c. Solve real-world and mathematical problems leading to two linear equations in two variables. <i>For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.</i></p>	<p><b>8.EE.8.a.3</b> Recognize if the graph is the same for the 2 equations, then the solution is infinitely many solutions.</p> <p><b>8.EE.8.b.1</b> Solve systems of equations graphically or by inspection.</p> <p><b>8.EE.8.b.2</b> Solve a system of equations algebraically (substitution or elimination), involving one solution.</p> <p><b>8.EE.8.b.3</b> Solve a system of equations algebraically (substitution or elimination), involving no solution [parallel lines]</p> <p><b>8.EE.8.b.4</b> Solve a system of equations algebraically (substitution or elimination), involving infinitely many solutions [same line]</p> <p><b>8.EE.8.b.5</b> Convert linear equations from standard form to slope-intercept form and vice-versa.</p> <p><b>8.EE.8.c.1</b> Explain how the point of intersection represents the solution for two linear equations</p> <p><b>8.EE.8.c.2</b> Examine real-world problems and create linear systems of equations</p> <p><b>8.EE.8.c.3</b> Solve real-world problems algebraically or by inspection.</p>
---	---

## Functions (F)

<p><b>8.F.1.</b> Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.<sup>1</sup></p>	<p>I Can:</p> <p><b>8.F.1.1</b> Identify the domain and range of a relation</p> <p><b>8.F.1.2</b> Determine if a graph represents a function</p> <p><b>8.F.1.3</b> Determine if a set of points represents a function</p> <p><b>8.F.1.4</b> Calculate the y-value for an equation when given the x-value</p> <p><b>8.F.1.5</b> Create a table for an equation</p> <p><b>8.F.1.6</b> Determine if a table represents a function</p> <p><b>8.F.1.7</b> Represent a function in the form of ordered pairs, mapping, graph, or listing</p> <p><b>8.F.1.8</b> Graph functions in a coordinate plane</p> <p><b>8.F.1.9</b> Read inputs and outputs from a graph of a function on a coordinate plane</p>
<p><b>8.F.2.</b> Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). <i>For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.</i></p>	<p>I Can:</p> <p><b>8.F.2.1</b> Find the rate of change (slope) of a graph</p> <p><b>8.F.2.2</b> Find the rate of change (slope) of a table</p> <p><b>8.F.2.3</b> Find the slope of an equation</p> <p><b>8.F.2.4</b> Compare two functions represented in the same way. (algebraically, graphically, numerically in tables, or by verbal description).</p> <p><b>8.F.2.5</b> Compare two functions represented differently (algebraically, graphically, numerically in tables, or by verbal description).</p>

Latest Revision 8/2/2013

*I Can Statements are in draft form due to the iterative nature of the item development process*

	8.F.2.6	Compare functions represented in different forms to determine which has the greater rate of change (slope)
8.F.3. Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. <i>For example, the function <math>A = s^2</math> giving the area of a square as a function of its side length is not linear because its graph contains the points (1, 1), (2, 4) and (3, 9), which are not on a straight line.</i>	I Can: 8.F.3.1 8.F.3.2 8.F.3.3 8.F.3.4 8.F.3.5 8.F.3.6	Explain that $y=mx+b$ is a linear function. Recognize that non-linear is not straight Use graphs to categorize functions as linear or non-linear Use equations to categorize functions as linear or non-linear Identify and prove functions that are non-linear. Give examples of functions that are non-linear.
8.F.4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	I Can: 8.F.4.1 8.F.4.2 8.F.4.3 8.F.4.4 8.F.4.5 8.F.4.6 8.F.4.7	Construct a linear function to determine the slope and y-intercept from a graph Construct a linear function to determine the slope and y-intercept from a table Construct a linear function given the slope and y intercept (initial point). Construct a linear function given the slope and a point. Construct a linear function given two points. Construct a linear function based on a real-world problem. Interpret the rate of change (slope) and the initial value(y-intercept) given real-world situations
8.F.5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	I Can: 8.F.5.1 8.F.5.2 8.F.5.3 8.F.5.4 8.F.5.5 8.F.5.6 8.F.5.7	Identify equations as linear or nonlinear. Explain how slope changes when given a graph. Sketch a graph when given the description of the slope Evaluate and describe properties based on a given graph Analyze the graph for a functional relationships Create a graph for a functional relationships Sketch a graph by analyzing a situation that has been described verbally
<b>Geometry (G)</b>		
8.G.1. Verify experimentally the properties of rotations, reflections, and translations:  a. Lines are taken to lines, and line segments to line segments of the same length.	I Can: 8.G.1.a.1 8.G.1.a.2 8.G.1.a.3 8.G.1.a.4	Construct an image from pre-image, using geometric tools. Construct a rotation Construction a reflection Construction a translation

Latest Revision 8/2/2013

*I Can Statements are in draft form due to the iterative nature of the item development process*

<p>b. Angles are taken to angles of the same measure.</p> <p>c. Parallel lines are taken to parallel lines.</p>	<p>8.G.1.a.5 Understand image and pre-image are congruent in translations</p> <p>8.G.1.a.6 Understand image and pre-image are congruent in reflections</p> <p>8.G.1.a.7 Understand image and pre-image are congruent in rotations</p> <p>8.G.1.a.8 Explore and justify figures created from transformations using compasses, protractors, and rulers or technology</p> <p>8.G.1.b.1 Defend whether or not two figures are congruent given the graph of a figure and its transformation using translation</p> <p>8.G.1.b.2 Defend whether or not two figures are congruent given the graph of a figure and its transformation using reflection</p> <p>8.G.1.b.3 Defend whether or not two figures are congruent given the graph of a figure and its transformation using rotation</p> <p>8.G.1.c.1 Recognize the angles formed by two parallel lines and a transversal</p> <p>8.G.1.c.2 Justify why angles(formed by parallel lines and a transversal) are congruent using angle relationships</p> <p>8.G.1.c.3 Determine if two figures are congruent by identifying the transformation used to produce the figures</p> <p>8.G.1.c.4 Write congruent statements.</p> <p>8.G.1.c.5 Recognize the congruent symbol</p> <p>8.G.1.c.6 Define congruent</p> <p>8.G.1.c.7 Write statements that justify the process of transformation as well as the conclusion</p> <p>8.G.1.c.8 Describe the sequence of transformations from one figure to another</p>
<p>8.G.2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.</p>	<p>I Can:</p> <p>8.G.2.1 Define congruent</p> <p>8.G.2.2 Recognize the congruent symbol</p> <p>8.G.2.3 Write congruent statements.</p> <p>8.G.2.4 Determine if two figures are congruent by identifying the transformation used to produce the figures</p> <p>8.G.2.5 Write statements that justify the process of transformation as well as the conclusion</p> <p>8.G.2.6 Describe the sequence of transformations from one figure to another</p>
<p>8.G.3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.</p>	<p>I Can:</p> <p>8.G.3.1 Identify the new coordinates of a translation</p> <p>8.G.3.2 Identify the new coordinates of a reflection</p> <p>8.G.3.3 Identify the new coordinates of a rotation</p>

Latest Revision 8/2/2013

*I Can Statements are in draft form due to the iterative nature of the item development process*

	<p>8.G.3.4 Identify the new coordinates of a dilation</p> <p>8.G.3.5 Understand image and pre-image are similar in dilations</p> <p>8.G.3.6 Given two similar figures describe the sequence of rotations, reflections, translations, and dilations</p> <p>8.G.3.7 Create a figure congruent to a given figure by applying knowledge of translation</p> <p>8.G.3.8 Create a figure congruent to a given figure by applying knowledge of reflection</p> <p>8.G.3.9 Create a figure congruent to a given figure by applying my knowledge of rotation(90, 180, 270 degrees) both clockwise and counterclockwise</p>
<p>8.G.4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.</p>	<p>I Can:</p> <p>8.G.4.1 Create similar figures using dilations and transform them</p> <p>8.G.4.2 Comprehend that the angles of similar figures are congruent and the sides of similar figures are proportional</p> <p>8.G.4.3 Produce similar figures from dilations using scale factors</p> <p>8.G.4.4 Describe that transformed images have congruent angles and proportionate sides</p> <p>8.G.4.5 Interpret the meaning of similar figures and describe their similarities</p> <p>8.G.4.6 Describe the list of steps that would produce similar figures when given the scale factors (dilation)</p> <p>8.G.4.7 Differentiate between scale factor that would enlarge a figure's size and one that would reduce it</p>
<p>8.G.5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. <i>For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.</i></p>	<p>I Can:</p> <p>8.G.5.1 Find the measures of missing angles</p> <p>8.G.5.2 Make conjectures about relationships between angles</p> <p>8.G.5.3 Determine the relationship between two angles when given parallel lines and a transversal.</p> <p>8.G.5.4 Construct parallel lines and transversal to examine the relationships between created angles</p> <p>8.G.5.5 Explore and justify relationships that exist between angles created when parallel lines are cut by a transversal</p> <p>8.G.5.6 Apply my knowledge of vertical, adjacent, and supplementary angles to identify other pairs of congruent angles</p> <p>8.G.5.7 Find the missing angle of a triangle.</p> <p>8.G.5.8 Find the exterior angle of a triangle</p> <p>8.G.5.9 Find the missing angle measure when given two similar triangles.</p>

Latest Revision 8/2/2013

*I Can Statements are in draft form due to the iterative nature of the item development process*

	<p>8.G.5.10 Construct various triangles and find the measures of interior and exterior angles</p> <p>8.G.5.11 Explore and justify relationships that exist between angle sums and exterior angle sums of triangles</p> <p>8.G.5.12 Explore and justify relationships that exist between the angle – angle criterion for similarity of triangles</p> <p>8.G.5.13 Construct various triangles and find measures of the interior and exterior angles</p> <p>8.G.5.14 Form a hypothesis about the relationship between the measure of an exterior angle and the other two angles of a triangle</p> <p>8.G.5.15 Construct triangles having line segments of different lengths but with two corresponding congruent angles</p> <p>8.G.5.16 Compare ratios of sides to find a constant scale factor of similar triangles</p>
<p>8.G.6. Explain a proof of the Pythagorean Theorem and its converse.</p>	<p>I Can:</p> <p>8.G.6.1 Understand the Pythagorean Theorem</p> <p>8.G.6.2 Use the Pythagorean Theorem to find the missing side of a right triangle.</p> <p>8.G.6.3 Identify the parts of a right triangle (legs and hypotenuse)</p> <p>8.G.6.4 Use the Pythagorean Theorem to determine if three length measurements form a right triangle</p> <p>8.G.6.5 Recognize the diagonal of a parallelogram with right angles as the hypotenuse of the right triangles formed</p> <p>8.G.6.6 Determine if a triangle is a right triangle by using the Pythagorean Theorem</p> <p>8.G.6.7 Verify the Pythagorean Theorem by examining the area of squares coming off of each side of the right triangle</p> <p>8.G.6.8 Identify Pythagorean triples</p> <p>8.G.6.9 Explain a proof of the Pythagorean Theorem</p>
<p>8.G.7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.</p>	<p>I Can:</p> <p>8.G.7.1 Solve word problems using the Pythagorean Theorem</p> <p>8.G.7.2 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world problems in 2 dimension</p> <p>8.G.7.3 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in mathematical problems in 2 dimension</p>

Latest Revision 8/2/2013

*I Can Statements are in draft form due to the iterative nature of the item development process*

	<p>8.G.7.4 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world problems in 3 dimensions</p> <p>8.G.7.5 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in mathematical problems in 3 dimensions</p>
<p>8.G.8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.</p>	<p>I Can:</p> <p>8.G.8.1 Use the Pythagorean Theorem (instead of the distance formula) to find the distance between two points in a coordinate plane</p> <p>8.G.8.2 Construct a right triangle on a coordinate plane to determine the distance between two points</p> <p>8.G.8.3 Determine the length of the diagonal or hypotenuse of a right triangle on a coordinate plane</p> <p>8.G.8.4 Use the coordinate plane to create a right triangle relationship whereby the distance between two points can be determined by solving for the hypotenuse of the Pythagorean Theorem.</p>
<p>8.G.9. Know the formulas for the volumes of cones, cylinders, and spheres, and use them to solve real-world and mathematical problems.</p>	<p>I Can:</p> <p>8.G.9.1 Identify the shapes of cones, cylinders, and spheres</p> <p>8.G.9.2 Use appropriate formulas for volume of cones, cylinders, and spheres in mathematical and real-world situations</p>
<b>Statistics &amp; Probability (SP)</b>	
<p>8.SP.1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.</p>	<p>I Can:</p> <p>8.SP.1.1 Graph a set of points</p> <p>8.SP.1.2 Interpret scatter plot as linear or nonlinear</p> <p>8.SP.1.3 Interpret the graph as strong correlation (clustering) or weak (outliers)</p> <p>8.SP.1.4 Construct a scatter plot on a plane using two variables</p> <p>8.SP.1.5 Investigate the relationship between two quantities on a scatter plot</p> <p>8.SP.1.6 Analyze the trend of a scatter plot and determine whether there is a positive, negative (linear), or no relationship (non-linear)</p> <p>8.SP.1.7 Predict future outcomes using a scatter plot</p>
<p>8.SP.2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.</p>	<p>I Can:</p> <p>8.SP.2.1 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.</p>

Latest Revision 8/2/2013

*I Can Statements are in draft form due to the iterative nature of the item development process*

<p>8.SP.3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. <i>For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.</i></p>	<p>I Can:</p> <p>8.SP.3.1 Graph the equation to demonstrate how the data is related</p> <p>8.SP.3.2 Use the line of best fit to determine an equation in two variables for the data (<math>y=mx + b</math>)</p> <p>8.SP.3.3 Use slope intercept form (<math>y= mx + b</math>) to determine the slope and y-intercept of the line of best fit</p> <p>8.SP.3.4 Interpret the meaning of the slope and y-intercept in the context of the data given</p> <p>8.SP.3.5 Determine relevant information from graph</p>
<p>8.SP.4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. <i>For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?</i></p>	<p>I Can:</p> <p>8.SP.4.1 Create a frequency table with collected data</p> <p>8.SP.4.2 Interpret a frequency table</p> <p>8.SP.4.3 Determine if there is a correlation between the information</p> <p>8.SP.4.4 Read a graph to determine a correlation</p> <p>8.SP.4.5 Construct a graph based on information given</p> <p>8.SP.4.6 Make predictions and analyze the data between the variables in the frequency table</p> <p>8.SP.4.7 Justify and defend the accuracy of my predictions</p>