

# Algebra 8 Curriculum Map 2013-2014

	Unit Name	Content	Skills	Standards: Performance Indicators
September	<b>The Real Numbers</b>	<p>1) Types of numbers</p> <p>2) Radicals</p> <p>3) Dimensional Analysis</p> <p>4) Evaluating Expressions</p>	<p>1) a. Determining if a number is rational or irrational</p> <p style="padding-left: 20px;">b. Rational + Rational = Rational (Rational)(Rational) = Rational Rational + Irrational = Irrational (Rational)(Irrational) = Irrational</p> <p>2) a. Simplifying basic radicals</p> <p style="padding-left: 20px;">b. Between what two consecutive integers does <math>\sqrt{90}</math> lie?</p> <p>3) Convert between units using dimensional analysis</p> <p>4) Evaluate expressions given values for the variables</p>	<p>N-RN.3</p> <p>N-Q.1</p> <p>N-Q.3</p>
October	<b>Equations</b>	<p>1) Properties of Numbers</p> <p>2) Solving equations</p> <p>3) Literal Equations</p> <p>4) Linear Word Problems</p> <p>5) Inequalities</p>	<p>1) Differentiate between commutative, associative, distributive, and properties of equality</p> <p>2) Solve multi-step equations (including equations with fractions) while stating which properties are being used in each step</p> <p>3) Solve literal equations to get an indicated variable alone</p> <p>4) Write and solve equations from word problems including word problems with variables on both sides and linear consecutive integer word problems</p> <p>5) a. Solve inequalities</p>	<p>A-REI.1</p> <p>A-REI.3</p> <p>A-CED.4</p> <p>A.CED.1</p>

	<p style="text-align: center;"><b>Linear Functions</b></p>	<p><b>6) Inequality word problems</b></p> <p><b>1) Define functions</b></p> <p><b>2) Function notation and evaluating</b></p> <p><b>3) Slope</b></p> <p><b>4) Graphing Lines</b></p> <p><b>5) Writing a function rule</b></p>	<p>b. Graph solution on number line c. Understand that when dividing by a negative, the inequality sign is flipped.</p> <p><b>6) Solve word problems involving inequalities</b></p> <p><b>1) a. Determine whether a set of point or a graph represents a function</b> b. Use the vertical line test to determine if a graph is a function</p> <p><b>2) a. Understand that <math>f(x)</math> is the same as <math>y</math></b> b. Evaluate functions for a given value (if <math>f(x) = 2x - 4</math>, find <math>f(-3)</math>)</p> <p><b>3) a. Find the slope of a line given two points</b> b. Find the slope of a line given a graph c. Find the rate of change given a word problem</p> <p><b>4) a. Graph lines using the slope and y-intercept</b> b. Graph lines in <math>y=mx+b</math> form using the calculator and copying the table c. Graph lines that are <i>not</i> in <math>y=mx+b</math> form</p> <p><b>5) a. Write a function rule given a word problem, then graph it using an appropriate domain</b> b. Write a function rule given a slope and point/two points/table of values c. Write equations of parallel lines</p>	<p><b>F.IF.1</b></p> <p><b>F.IF.2</b></p> <p><b>F.IF.4</b></p> <p><b>F.IF.5</b></p> <p><b>F.IF.6</b></p> <p><b>F.IF.7.a</b></p> <p><b>F.IF.7.b</b></p> <p><b>A-REI.10</b></p>
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		<b>6) Piece-Wise Functions</b>	<b>6) a. Interpret graphs of piece-wise functions</b> <b>b. Write a story to represent a graph/draw a graph to represent a story</b> <b>c. Graph piece-wise functions given equations</b>	
November	<b>Systems of Equations</b>	<b>1) Solving systems of linear equations</b>  <b>2) Solving systems with multiple types of graphs</b>	<b>1) a. Solving systems graphically</b> <b>b. Solving systems by substitution</b> <b>c. Solving systems using elimination</b> <b>d. Solving linear word problem systems</b>  <b>2) a. Graphing different types of equations (absolute value, exponential, etc)</b> <b>b. Solving systems with various graphs (parabola and line, absolute value and line)</b> <b>c. Basic transformations of various graphs</b>	<b>A-REI.5</b>  <b>A-REI.6</b>  <b>A-REI.11</b>  <b>A-CED.2</b>  <b>F-LE.1</b>  <b>F-LE.5</b>
	<b>Inequalities Mini Unit</b>	<b>1) Graphing inequalities on coordinate plane</b>  <b>2) Systems of inequalities</b>	<b>1) a. Graphing inequalities (dashed line vs. solid line, shading using test point))</b>  <b>2) Graphing systems of inequalities and stating a point in the solution set</b>	<b>A-REI.12</b>

December	Polynomials	1) Properties of exponents	1) a. Understand the properties of exponents when adding, subtracting, multiplying, and dividing polynomials b. Understand properties of negative exponents and zero exponents	A-SSE.1.a A-SSE.3.c A-APR.1
		2) Operations with polynomials	2) a. Add and subtract polynomials b. Multiply polynomials using FOIL for binomials c. Multiply polynomials using the distributive property for larger polynomials d. Divide a polynomial by a monomial	
3) Factoring polynomials		3) a. Factor polynomials by GCF b. Factor trinomials with a leading coefficient of 1 c. Factor trinomials with a leading coefficient greater than 1.		
January	Geometry	1) Parallel Lines Cut by a Transversal	1) a. Know and apply properties of alternate interior angles. b. Know and apply properties of vertical angles.	8.G.5
		2) Properties of Triangles	2) a. Know and apply that the angles of a triangle add up to 180 degrees. b. Know and apply the properties of exterior angles of a triangle.	8.G.5
		3) Compute Volumes of Cones, Spheres, & Cylinders.	3) a. Compute the volume of cone, cylinders, and spheres. b. Know the formula to find the volume of cone, cylinders, and spheres.	8.G.9
		4) Perform translations,	4) a. Be able to perform translations, rotations, reflections, and dilations on the	8.G.3

		<p>reflections, rotations, and dilations.</p> <p><b>Similar and Congruent Triangles</b></p>	<p>coordinate plane.</p> <p>5) a. Know that a combination of translations, rotations, and reflections creates similar figures.  b. Know that if you perform a dilation on two-dimensional figures they are similar figures.  c. Know that congruent figures have corresponding congruent sides and angles.  d. Know that similar figures have proportional sides.</p>	<p>8.G.2  8.G.3  8.G.4</p>
February	Quadratics	1) Graphing quadratics	<p>1) a. Graph a quadratic equation on the coordinate plane  b. Interpret the parts including minimums, maximums, increasing, decreasing, axis of symmetry, roots, etc.)</p>	<p>F-IF.7.a  F-IF.8  A-APR.3  A-SSE.3.a</p>
March		2) Solving quadratics algebraically	<p>2) a. Solve quadratic equations by factoring (including consecutive integer problems)  b. Given the zeroes, write the equation  c. Solve quadratics by completing the square  d. Solve quadratics using the quadratic formula</p>	<p>A-SSE.3.b  A-CED.1  A-CED.3  A-REI.4.b</p>
	Statistics	<p>1) Measures of Central Tendency</p> <p>2) Representations of Data</p>	<p>1) a. Find and interpret the mean, median, and mode of a set of data</p> <p>2) a. Histograms  b. Dot Plots  c. Box Plots and IQR</p>	<p>S-ID.1  S-ID.2  S-ID.3</p>

April	Sequences Mini Unit	<p>3) Regressions and Correlation Coefficient</p> <p>1) Arithmetic and Geometric Sequences</p>	<p>d. Standard Deviation and spread e. Two-way frequency tables f. Scatterplots</p> <p>3) a. Quadratic, exponential, and linear regressions b. Correlation coefficient c. Residuals on the calculator</p> <p>1) a. Input/Output b. Define arithmetic/geometric sequences c. Recursive processes</p>	<p>S-ID.4</p> <p>S-ID.5</p> <p>S-ID.9</p> <p>F-BF.1</p> <p>F-LE.2</p> <p>F-IF.3</p>
May	<b>REVIEW</b>			
June	<b>REGENTS EXAM – JUNE 3, 2014</b>			