Instructional Guide

Grade Level Ninth Grade Subject Algebra I School System Pickens County

School Year 2011-2012

Time Period (Pacing – when)	AHSGE Correlations	Standards/ Components (Pacing – what)	Resources/ Activities (Pacing – how) Curricular Alignment	Date of Common Formative Assessment (Pacing – how well)	Mapping Comments (What works what needs adjustment)
1st Nine Weeks					
3 days	I-1 One, two, or no variables Grouping Symbols Exponents Negative Integers	AlgI.1.a Simplify numerical expressions using order of operations.	Text/Teaching Materials: Glencoe Algebra I, Section 1-2 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: order of operations, algebraic expressions, evaluate		

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1st Nine Weeks 6 days	II-1 Grouping Variables on both sides More than one operation with fractions	AlgI.7.a. Solve multi-step equations including linear. AlgI.7.B.1. Writing the solution of an equation in set notation	Text/Teaching Materials: Glencoe Algebra I, Section 3-4, 3-5 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: multi-step equations, consecutive integers, identity		
3 days	II-4 V-3 Negative coefficient Compound inequality Graphs	AlgI.7.f. Solve multi-step inequalities including linear. AlgI.7.B.2. Writing the solution of an inequality in set notation	Text/Teaching Materials: Glencoe Algebra I, Section 6-3 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: compound inequality, intersection, union, graph on number line		

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1st Nine Weeks 2 days		AlgI.7.c. Solve multi-step equations including absolute value. AlgI.7.B.1. Writing the solution of an equation in set notation AlgI.7.d. Solve multi-step inequalities including absolute value. AlgI.7.B.2. Writing the solution of an inequality in set notation	Text/Teaching Materials: Glencoe Algebra I, Section 6-5 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: open sentences, absolute value		
2 days		AlgI.7.e. Solve multi-step equations including literal. AlgI.7.B.1. Writing the solution of an equation in set notation	Text/Teaching Materials: Glencoe Algebra I, Section 3-8		
2 days	III-1 III-2 Graphs, ordered pairs, tables, mappings f(x) = or y =	AlgI.3.a. Determine properties of a relation including domain and range when given graphs, tables of values, mappings, or sets of ordered pairs.	Text/Teaching Materials: Glencoe Algebra I, Section 4-3 Vocabulary: relation, domain, range, inverse, mapping		

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1st Nine Weeks 2 days	III-1 III-2 Domain Set of ordered pairs Function notation	AlgI.3.b. Determine properties of a relation including whether it is a function when given graphs, tables of values, mappings, or sets of ordered pairs. AlgI.3.B. Finding the range of a function when given its domain (function notation)	Text/Teaching Materials: Glencoe Algebra I, Section 4-6 Vocabulary: function, vertical line test, function notation		
2 days	V-1, 4 f(x) four graphs or equations common relations	AlgI.2.B.5. Graphing two-variable linear equations on the Cartesian plane AlgI.4.a. Construct graphs of common relations, including x = constant, y = constant y = x. AlgI.4.B.1. Identifying applications modeled by common relations, including *x* = constant, *y* = constant, y = x	Text/Teaching Materials: Glencoe Algebra I, Section 4-5, 5-3 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html		

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1st Nine Weeks 2 days	V-1, 4 f(x) four graphs or equations common relations	AlgI.4.b. Construct graphs of common relations including $y = \sqrt{x}$ AlgI.4.B.2. Identifying applications modeled by common relations including $y = \sqrt{x}$ AlgI.4.c. Construct graphs of common relations including $y = x^2$, AlgI.4.B.3. Identifying applications modeled by common relations including $y = x^2$, AlgI.4.d. Construct graphs of common relations including $y = \lvert x \rvert$ AlgI.4.B.4. Identifying applications modeled by common relations including $y = \lvert x \rvert$	Text/Teaching Materials: Glencoe Algebra I, Page 604 – Graphing Calculator Investigation, Section 10-1 AHSGE Student Review Guide Pages 332-334 Vocabulary: quadratic function, parabola, minimum, maximum, vertex, symmetry, axis of symmetry, absolute value		

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1st Nine Weeks 6 days	IV-2 Two points x- and y-intercepts point and slope slope and y-intercept	AlgI.2.a. Analyze linear functions from their equations for their characteristics including slopes. AlgI.2.B.1 Determining the slope of a line from its equation AlgI.2.B.2 Determining the slope of a line by applying the slope formula AlgI.10.c. Calculate slope of a line segment when given coordinates of its endpoints on the Cartesian plane. AlgI.10.B.3. Deriving slope formula for line segments	Text/Teaching Materials: Glencoe Algebra I, Section 5-1, 5-3, 5-4 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: slope, slope-intercept form		
2 days	V-1,4 f(x) four graphs or equations common relations	AlgI.2.b. Analyze linear functions from their equations for their characteristics including intercepts. AlgI.2.B.3. Determining equations of linear functions given two points, tables of values, graphs, or ordered pairs	Text/Teaching Materials: Glencoe Algebra I, Section 4-5 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: linear equation, standard form		

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1st Nine Weeks 2 days	V-1,4 f(x) four graphs or equations common relations	AlgI.2.B.4 Determining equations of linear functions given a point and a slope	Text/Teaching Materials: Glencoe Algebra I, Section 5-5 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: point-slope form		
2 days		AlgI.2.B.6. Graphing two-variable linear inequalities on the Cartesian plane	Text/Teaching Materials: Glencoe Algebra I, Section 6-6 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: half-plane, boundary		

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2nd Nine Weeks					
2 days	I-2 Distributive Property Unlike Denominators	AlgI.5.a. Perform operations of addition and subtraction on polynomial expressions.	Text/Teaching Materials: Glencoe Algebra I, Section 8-5, 12-6, 12-7 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: polynomial, LCM, LCD		
4 days	I-3 Parenthesis Squaring Fractions Adding Exponents	AlgI.1.B. Applying laws of exponents to simplify expressions including those containing zero and negative integral exponents.	Text/Teaching Materials: Glencoe Algebra I, Section 8-1, 8-2, 8-3 Vocabulary: exponent, power, monomial, constant, scientific notation		

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2nd Nine Weeks 2 days	I-3 Parenthesis Squaring Fractions Adding Exponents	AlgI.5.b. Perform operation of multiplication on polynomial expressions.	Text/Teaching Materials: Glencoe Algebra I, Section 8-6, 8-7, 8-8, 12-3 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: FOIL method, difference of squares		
1 day		AlgI.5.B.1. Dividing a polynomial by a monomial	Text/Teaching Materials: Glencoe Algebra I, Section 8-2, 12-5 Vocabulary: zero exponent, negative exponent		
1 day	I-4 GCM trinomial	AlgI.6.a. Use GCF to factor binomials, trinomials, and other polynomials.	Text/Teaching Materials: Glencoe Algebra I, Section 9-1 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: prime, composite, prime factorization, factored form, GCF		

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2nd Nine Weeks 1 day	I-4 Difference of two squares	AlgI.6.b. Use difference of squares to factor binomials.	Text/Teaching Materials: Glencoe Algebra I, Section 9-5		
2 days	I-4 trinomial	AlgI.6.c. Use perfect square trinomials to factor trinomials	Text/Teaching Materials: Glencoe Algebra I, Section 9-6 Vocabulary: perfect square trinomials		
2 days	I-4 Trinomial Common binomial	AlgI.6.d. Use grouping to factor other polynomials.	Text/Teaching Materials: Glencoe Algebra I, Section 9-2 Vocabulary: factoring, factoring by grouping, distributive property, zero product property		
1 day	II-2 factoring	AlgI.9.a. Solve quadratic equations using the zero product property.	Text/Teaching Materials: Glencoe Algebra I, Section 9-2, 9-3, 9-4, 9-5, 9-6 Vocabulary: zero product property, factoring, factoring by grouping, prime polynomial		

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2nd Nine Weeks 2 days		AlgI.9.B.1. Determining approximate solutions of quadratic equations graphically AlgI.9.B.2. Determining approximate solutions of quadratic equations numerically	Text/Teaching Materials: Glencoe Algebra I, Section 10-2 Vocabulary: quadratic equation, roots, zeros		
2 days		AlgI.9.B.3. Solving quadratic equations using the quadratic formula	Text/Teaching Materials: Glencoe Algebra I, Section 10-4 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: Quadratic formula, discriminant		
2 days		AlgI.9.B.4. Solving quadratic equations using completing the square	Text/Teaching Materials: Glencoe Algebra I, Section 10-3 Vocabulary: completing the square		

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2nd Nine Weeks 1 day	II-3 Solving for x and y Four graphs	AlgI.8.a. Solve systems of linear equations in two variables graphically. AlgI.8.B.1. Designing models of application-based problems by developing and solving systems of linear equations	Text/Teaching Materials: Glencoe Algebra I, Section 7-1 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: system of equations, consistent, inconsistent, independent, dependent		
3 days	II-3 Solving for x and y Four graphs	AlgI.8.b. Solve systems of linear equations in two variables algebraically. AlgI.8.B.1. Designing models of application-based problems by developing and solving systems of linear equations	Text/Teaching Materials: Glencoe Algebra I, Section 7-2, 7-3, 7-4 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: substitution, elimination		

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2nd Nine Weeks 1 day	II-3 Solving for x and y Four graphs	AlgI.8.c. Solve systems of linear inequalities in two variables graphically. AlgI.8.B.2. Designing models of application-based problems by developing and solving systems of linear inequalities	**Text/Teaching Materials:** Glencoe Algebra I, **Section 7-5** **Additional Resources:** **http://www.sw-georgia.resa.k12.ga.us/Math.html** **Vocabulary: system of inequalities**		
1 day		AlgI.1.c. Simplify numerical expressions involving radical form and decimal approximations using properties of real numbers.	**Text/Teaching Materials:** Glencoe Algebra I, **Section 11-1, 11-2** **Additional Resources:** **http://www.sw-georgia.resa.k12.ga.us/Math.html** **Vocabulary: radical expression, radicand, rationalizing the denominator, conjugates**		

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2nd Nine Weeks 1 day	IV-2 Radicals Lines may be graphed Formulas will be given	AlgI.7.B.3.c. Formulating the design of application-based problems by developing and solving equations including those involving distance AlgI.10.a. Calculate length of a line segment when given coordinates of its endpoints on the Cartesian plane. AlgI.10.B.1. Deriving distance formula for line segments	**Text/Teaching Materials:** Glencoe Algebra I, **Section 11-5** **Vocabulary: distance formula**		
1 day	IV-2 Lines may be graphed Formulas will be given	AlgI.10.b. Calculate midpoint of a line segment when given coordinates of its endpoints on the Cartesian plane. AlgI.10.B.2. Deriving midpoint formula for line segments	**Text/Teaching Materials:** Glencoe Algebra I, **Page 196** **Vocabulary: midpoint formula**		

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2nd Nine Weeks 2 days	VII-2 Formulas will be given Diagrams Word problems radicals	AlgI.10.B.4. Utilizing the Pythagorean Theorem to solve application-based problems	Text/Teaching Materials: Glencoe Algebra I, Section 11-4 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: Pythagorean Theorem, hypotenuse, legs, Pythagorean triple, corollary		
2 days	VII-6 Both AND and OR	AlgI.15.a. Calculate probabilities given data in lists.	Text/Teaching Materials: Glencoe Algebra I, Section 2-6 Vocabulary: probability, simple event, sample space, equally likely, odds		
1 day		AlgI.15.b. Calculate probabilities given data in graphs. AlgI.15.B.2. Comparing theoretical and experimental probabilities for data in graphs	Text/Teaching Materials: Glencoe Algebra I, Section 14-5 Vocabulary: theoretical probability, experimental probability, relative frequency, empirical study, simulation		

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2nd Nine Weeks 1 day	IV-1 Drawings	AlgI.11.a. Solve problems algebraically involving area and perimeter of a polygon. AlgI.11.B.1. Applying area formulas to solve application-based problems	Text/Teaching Materials: AHSGE Student Review Guide Pages 167 – 176 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html		
1 day	IV-1 Pi will be 3.14 Left in terms of Pi	AlgI.11.b. Solve problems algebraically involving area and circumference of a circle. AlgI.11.B.1. Applying area formulas to solve application-based problems	Text/Teaching Materials: AHSGE Student Review Guide Pages 177-180 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: center, radius, diameter, Pi		
1 day	IV-1 Volume or surface area Formulas will be given	AlgI.11.c. Solve problems algebraically involving volume and surface area of right circular cylinders. AlgI.11.B.2. Applying volume formulas to solve application-based problems	Text/Teaching Materials: AHSGE Student Review Guide Pages 187-194 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html Vocabulary: height		

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2nd Nine Weeks 1 day	IV-1 Volume or surface area Rectangular prisms Formulas will be given	AlgI.11.d. Solve problems algebraically involving volume and surface area of right rectangular prisms. AlgI.11.B.2. Applying volume formulas to solve application-based problems	Text/Teaching Materials: AHSGE Student Review Guide Pages 187-194 Additional Resources: http://www.sw-georgia.resa.k12.ga.us/Math.html		
1 day		AlgI.12.a. Compare various methods of data reporting, including scatter plots to make inferences or predictions. AlgI.12.B.1. Determining effects of linear transformations of data AlgI.12.B.2. Determining effects of outliers AlgI.12.B.3 Critiquing the design of a survey AlgI.14. Use a scatter plot and its line of best fit or a specific line graph to determine the correlation existing between two sets of data, including positive, negative, or no correlation.	Text/Teaching Materials: Glencoe Algebra I, Section 5-7 Vocabulary: scatter plot, positive correlation, negative correlation, line of fit, best-fit-line		

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2nd Nine Weeks 1 day		AlgI.12.b. Compare various methods of data reporting, including stem-and-leaf plots to make inferences or predictions. AlgI.12.B.1. Determining effects of linear transformations of data AlgI.12.B.2. Determining effects of outliers AlgI.12.B.3 Critiquing the design of a survey	Text/Teaching Materials: Glencoe Algebra I, Section 2-5 Vocabulary: line plot, frequency, stem-and-leaf plot, measures of central tendency		
1 day		AlgI.12.c. Compare various methods of data reporting, including histograms to make inferences or predictions. AlgI.12.B.1. Determining effects of linear transformations of data AlgI.12.B.2. Determining effects of outliers AlgI.12.B.3 Critiquing the design of a survey	Text/Teaching Materials: Glencoe Algebra I, Section 13-3 Vocabulary: histogram, frequency table, measurement classes		
1 day		AlgI.12.d. Compare various methods of data reporting, including box-and-whisker plots to make inferences or predictions. AlgI.12.B.1. Determining effects of linear transformations of data AlgI.12.B.2. Determining effects of outliers AlgI.12.B.3 Critiquing the design of a survey	Text/Teaching Materials: Glencoe Algebra I, Section 13-5 Vocabulary: box-and-whisker plot, extreme values		

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2nd Nine Weeks 1 day		AlgI.12.e. Compare various methods of data reporting, including line graphs to make inferences or predictions. AlgI.12.B.1. Determining effects of linear transformations of data AlgI.12.B.2. Determining effects of outliers AlgI.12.B.3 Critiquing the design of a survey	Text/Teaching Materials: Glencoe Algebra I, Section 2-5		
2 days	VII-5 Mean Decimal Frequency	AlgI.13. Identify characteristics of a data set, including numerical or categorical and univariate or bivariate. AlgI.13.B. Analyze data using mean, median, and mode	Text/Teaching Materials: Glencoe Algebra I, Section 2-5		
2 days	VII-7 Diagrams may be used Verbal descriptions	AlgI.7.B.3.a. Formulating the design of application-based problems by developing and solving equations including those involving direct variation	Text/Teaching Materials: Glencoe Algebra I, Section 5-2 Vocabulary: direct variation, constant of variation, family of graphs, parent graphs		

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2nd Nine Weeks 1 day		AlgI.7.B.3.b. Formulating the design of application-based problems by developing and solving equations including those involving inverse variation	Text/Teaching Materials: Glencoe Algebra I, Section 12-1 Vocabulary: inverse variation		
2 days	VII-8 Word problems d = rt Consecutive integers	AlgI.7.B.3.d. Formulating the design of application-based problems by developing and solving equations including those involving uniform motion AlgI.7.B.3.e. Formulating the design of application-based problems by developing and solving equations including those involving mixture	Text/Teaching Materials: Glencoe Algebra I, Section 3-9 Vocabulary: weighted average, mixture problem, uniform motion problem		