

South Conway County School District

9th Grade Algebra 1 Pacing Guide

Arkansas Curriculum Framework (SLE)	Learning Goal (Objective)	Assessment/Bloom's	Essential Vocabulary *teacher word (For Future Use)	Materials/Resources (For Future Use)
First Quarter				
Chapter 1				
LA.1.AI.1 Evaluate algebraic expressions, including radicals, by applying the order of operations	Apply order of operations by evaluating algebraic expressions including radicals	Prerequisite Skills: ♦apply order of operations *recognize an expression, including radicals *substitute values in place of variables *simplify numerical expressions using the order of operations *evaluate algebraic expressions, including radicals, by applying the order of operations	additive inverse algebraic expressions algorithms Associative Property Commutative Property constant difference Distributive Property evaluate integers irrational numbers natural numbers number sense radical radical expressions rational numbers whole numbers	
LA.1.AI.2 Translate word phrases and sentences into expressions, equations, and inequalities, and vice versa	Knowledge of expressions, equations, and inequalities by translating word phrases and sentences (and vice versa)	*recognize expressions, equations & inequalities *recognize basic operations as words and symbols *translate word phrases and sentences into expressions, equations, and inequalities, and vice versa	algebraic expressions difference equations expressions inequalities	
LA.1.AI.4 Solve problems involving scientific notation, including multiplication and division	Comprehend scientific notation by simplifying using multiplication and division	Prerequisite Skills: ♦distinguish between scientific notation and standard form ♦translate standard form into scientific notation, and vice versa *explain uses of scientific notation in real-world applications	scientific notation	
LF.3.AI.2 Determine domain and range of a relation from an algebraic expression, graphs, set of ordered pairs, or table of data	Knowledge of algebraic expressions, graphs, sets of ordered pairs by identifying domain and range	Prerequisite Skills: ♦identify x- and y-coordinate of ordered pairs *identify domain and range of a relation from algebraic expressions, graphs, sets of ordered pairs, or tables of data	coordinate domain ordered pair range x-coordinate y-coordinate	
LF.3.AI.4 Identify independent variables and dependent variables in various representational modes: words, symbols, and/or graphs	Knowledge of independent and dependent variables to identify words, symbols, and/or graphs	Prerequisite Skills: ♦use variables, literally and in context ♦identify independent and dependent variables *identify independent and dependent variables in various representational modes: words, symbols, and/or graphs	dependent variable independent variable variable	

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LF.3.AI.1 Distinguish between functions and non-functions/relations by inspecting graphs, ordered pairs, mapping diagrams and/or tables of data	Comprehend function and non-function relationships by inspecting graphs, ordered pairs, mapping diagrams and/or tables of data	Prerequisite Skills: ◆identify the domain of relations *apply the vertical line test *express relations as tables, mapping diagrams, ordered pairs, and graphs *distinguish between functions and non-functions/relations by inspecting graphs, ordered pairs, mapping diagrams and/or tables of data	domain functions graph of a function mapping diagram ordered pair range relations table vertical line test	
DIP.5.AI.1 Construct and use scatter plots and line of best fit to make inferences in real-life situations	Construct and use scatter plots and line of best fit to make inferences in real-life situations	Prerequisite Skills: ◆graph on a coordinate plane ◆construct scatter plots and draw lines of best fit ◆write equation of a line in slope-intercept form *construct and use scatter plots and line of best fit *make inferences in real-life situations using the constructed scatter plot and line of best fit	axis coordinate system extrapolate inferences interpolate line of best fit regression scatter plot x-axis y-axis	
Chapter 2				
LA.1.AI.1 Evaluate algebraic expressions, including radicals, by applying the order of operations	Apply order of operations by evaluating algebraic expressions including radicals	Prerequisite Skills: ◆apply order of operations *recognize an expression, including radicals *substitute values in place of variables *simplify numerical expressions using the order of operations *evaluate algebraic expressions, including radicals, by applying the order of operations	additive inverse algebraic expressions algorithms Associative Property Commutative Property constant difference Distributive Property evaluate integers irrational numbers natural numbers number sense radical radical expressions rational numbers whole numbers	
LA.1.AI.3 Apply the laws of (integral) exponents and roots	Comprehend laws of exponents and roots by simplifying expressions	Prerequisite Skills: ◆apply order of operations *recognize exponents and roots *practice laws of exponents and roots individually *simplify multi-step expressions using the laws of exponents and roots *apply the expression	exponents powers radical radical expression radicand	
Chapter 13				
DIP.5.AI.2 Use simple matrices in addition, subtraction, and scalar multiplication	Apply simple matrices to compute addition, subtraction, and scalar multiplication	*use simple matrices in addition, subtraction, and scalar multiplication	array matrices scalar multiplication	

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DIP.5.AI.11 Explain how sampling methods, bias, and phrasing of questions in data collection impact the conclusions	Explain and cite examples as justification how sampling methods, bias, and phrasing of questions in data collection impact the conclusions Focus on scatter plots and line of best fit	Prerequisite Skills: ♦define biased and unbiased data sampling ♦describe methods of data collection ♦examine misleading graphs and questions ♦use sampling methods *explain how sampling methods, bias, and phrasing of questions in data collection impact the conclusions	bias conclusions data sampling	
DIP.5.AI.6 Construct and interpret a cumulative frequency histogram in real-life situations	Analyze real life situations by constructing and interpreting cumulative frequency histograms	Prerequisite Skills: ♦construct histograms ♦interpret a histogram *construct and interpret a cumulative frequency histogram in real-life situations	axis histograms intervals	
DIP.5.AI.8 Compute simple probability with and without replacement	Apply simple probability to compute with and without replacement	Prerequisite Skills: ♦apply concepts of simple probability *compute simple probability with and without replacement	chance probability theoretical probability probability without replacement probability with replacement	
DIP.5.AI.10 Communicate real-world problems graphically, algebraically, numerically and verbally	Comprehend real-world problems by communicating algebraically, numerically, and verbally	*identify key information *determine the format in which the solution should be written *represent and/or solve the situation *label solution with appropriate unit(s), when necessary *communicate real-world problems graphically, algebraically, numerically	units of measure unit rates vocabulary specific to problems	
DIP.5.AI.12 Recognize when arguments based on data confuse correlation with causation	Analyze arguments based on data by recognizing correlation with causation	*differentiate correlation and causation *recognize when arguments based on data confuse correlation and causation	causation correlation	
DIP.5.AI.5 Use two or more graphs to compare data sets Ex. box-and-whisker, histograms, scatter plots	Analyze real-life situations by constructing and using scatter plots and line of best fit	Prerequisite Skills: ♦interpret various representations of data sets *use two or more graphs to compare data sets	bar graph box-and-whisker plots histograms line graph scatter plot stem-and-leaf display	
Chapter 3				
SEI.2.AI.5 Solve real-world problems that involve a combination of rates, proportions and percents	Apply real-world problems to solve rates, proportions and percents	Prerequisites Skills: ♦apply rates, proportions, and percents ♦write equations to represent real-world problems ♦solve equations for specified information ♦assess reasonableness of a solution ♦label solution with appropriate unit(s) *solve real-world problems that involve rates, proportions and percents	percent proportion rates ratio scale	

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SEI.2.AI.5 Solve real-world problems that involve a combination of rates, proportions and percents	Apply real-world problems to solve rates, proportions and percents	Prerequisites Skills: ♦apply rates, proportions, and percents ♦write equations to represent real-world problems ♦solve equations for specified information ♦assess reasonableness of a solution ♦label solution with appropriate unit(s) *solve real-world problems that involve rates, proportions and percents	percent proportion rates ratio scale	

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Second Quarter				
Chapter 3 continued				
SEI.2.AI.3 Solve linear formulas and literal equations for a specified variable Ex. solve for p in $l = prt$	Apply the linear form of a lateral equation to solve for a specified variable	Prerequisite Skills: ♦apply steps for solving an equation *recognize a literal equation *solve for a specified variable *demonstrate multiple versions of the result if necessary	linear formulas literal equations variable	
SEI.2.AI.6 Solve problems involving direct variation and indirect (inverse) variation to model rates of change	A. Apply rates of change to model problems involving indirect or direct variation B. Apply rates of change to solve indirect or direct variation	*identify a direct variation equation *solve problems involving direct variation algebraically or graphically *explain how one variable affects the other variable, if applicable *identify an indirect variation equation *solve problems involving indirect variation and indirect (inverse) variation to model rates of change	constant direct variation constant indirect (inverse) variation	
Chapter 4				
LF.3.AI.5 Interpret the rate of change/slope and intercepts within the context of everyday life Ex. telephone charges based on base rate (y-intercept) plus rate per minute (slope)	Interpret the rate of change/slope and intercepts within the context of everyday life Ex. telephone charges based on base rate (y-intercept) plus rate per minute (slope)	Prerequisite Skills: ♦identify and find slope, x-intercept, and y-intercept ♦apply slope-intercept form ♦calculate the rate of change *interpret the rate of change *interpret the intercepts *interpret the rate of change/slope and intercepts within the context of everyday life	slope slope as a rate of change slope-intercept form x-intercept y-intercept	
LF.3.AI.3 Know and/or use function notation, including evaluating functions for given values in their domain	Apply function notation to evaluate given values in a domain	Prerequisite Skills: ♦substitute for values for a variable ♦simplify expressions using the order of operations *evaluate functions for given values in their domain *know and/or use function notation, including evaluating functions for given values in their domain	domain evaluate function notation substitution	
LF.3.AI.6 Calculate the slope given •two points •the graph of a line •the equation of a line	Apply two points, graph of a line, the equation of a line to calculate the slope of a line	Prerequisite Skills: ♦apply slope formula and determine coordinate points ♦apply slope as a ratio of change in y (rise) over a change in x (run) ♦recognize when a ratio is undefined ♦recognize and write slope-intercept form of a line *calculate slope using two points, the graph of a line, and the equation of a line	line coordinate point slope slope-intercept form	

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LF.3.AI.9 Describe the effects of parameter changes, slope and/or y-intercept, on graphs of linear functions and vice versa	Comprehend graphs of linear functions by describing effects of parameter changes, slopes and y-intercepts (and vice versa)	Prerequisite Skills: ♦graph lines ♦apply slope-intercept form of a line *describe the effects of parameter changes, slope and/or y-intercept, on graphs of linear functions and vice versa	horizontal shift linear functions parameter change slope vertical shift y-intercept	
LF.3.AI.2 Determine domain and range of a relation from an algebraic expression, graphs, set of ordered pairs, or table of data	Knowledge of algebraic expressions, graphs, sets of ordered pairs by identifying domain and range	Prerequisite Skills: ♦identify x- and y-coordinate of ordered pairs *identify domain and range of a relation from algebraic expressions, graphs, sets of ordered pairs, or tables of data	coordinate domain ordered pair range x-coordinate y-coordinate	
SEI.2.AI.1 Solve multi-step equations and inequalities with rational coefficients numerically, algebraically, graphically, and technologically (continued below)	A. Apply algebraic methods to solve multi-step equations with rational coefficients B. Apply numbers, graphs, and technology to solve multi-step equations with rational coefficients	Prerequisite Skills: ♦apply solving one- and two-step equations and check solutions ♦apply Distributive Property ♦apply the addition, subtraction, multiplication, and division properties of equality to multi-step equations with rational coefficients *solve multi-step equations and inequalities with rational coefficients numerically, algebraically, graphically, and technologically	rational numbers coefficient Distributive Property evaluate no solution rational numbers coefficient evaluate no solution x-y table	
LA.1.AI.6 Simplify algebraic fractions by factoring	Comprehend factoring by simplifying algebraic fractions	Prerequisite Skills: ♦simplify fractions *factor polynomials *recognize when an expression is undefined *simplify algebraic fractions by factoring	algebraic fraction coefficient factor factoring	
LA.1.AI.7 Recognize when an expression is undefined	Knowledge of expressions by recognizing an undefined expression	*determine that dividing by zero is undefined *factor polynomials in the denominator to find values where the denominator equals 0 *recognize when an expression is undefined	undefined expression	
Chapter 5				
DIP.5.AI.1 Construct and use scatter plots and line of best fit to make inferences in real-life situations	Construct and use scatter plots and line of best fit to make inferences in real-life situations	Prerequisite Skills: ♦graph on a coordinate plane ♦construct scatter plots and draw lines of best fit ♦write equation of a line in slope-intercept form *construct and use scatter plots and line of best fit *make inferences in real-life situations using the constructed scatter plot and line of best fit	axis coordinate system extrapolate inferences interpolate line of best fit regression scatter plot x-axis y-axis	