

Algebra I Curriculum
Gasconade County R-2 School District

Grade Level: 9 - 12

Subject: Math -- Algebra 1

Month	Unit	Mathematics Missouri Learning Standards	Key Mathematics and Academic Vocabulary	MathLinks to New MLS	Essential Questions
August	Unit 1	SSE A 1 SSE A 2 REI A1 NQ B3 a NQ B5 NQ B3 b NQ B3 c NQ B4	algebraic expression variables term factors power product exponent base equivalent expressions reciprocals distributive property like terms simplest form coefficient	Item Specification Reports 6-12 Missouri Learning Standards 7-12 Math Glossary Missouri EOC Math Reference Sheet End of Course Blueprints MAP Grade Level Blueprints	The student will be able to interpret parts of an expression, such as terms, factors, and coefficients. The student will be able to use the structure of an expression to identify ways to rewrite it. The student will be able to identify equivalent equations. The student will be able to label quantities with appropriate terms such as rates, time, length, area and capacity with the appropriate level of accuracy. The student will be able to convert units.

September		<p>IF B4</p> <p>IF A1 a</p> <p>IF A1 b</p> <p>IF A2</p> <p>IF C7</p>	<p>coordinate system ordered pair x-coordinate y-coordinate relation mapping domain range independent variable dependent variable function discrete function continuous function vertical line test function notation nonlinear function intercepts y-intercept x-intercept line symmetry extrema relative minimum relative maximum end behavior</p>		<p>The student will relate the domain and range of a function to its graph.</p> <p>The student will represent a function using function notation, and understand that $f(x)$ denotes the elements of the range of a function f that correspond to the elements of the domain.</p> <p>The student will understand that the input and output values of a function correspond to (x,y) values on the Cartesian coordinate plane.</p> <p>The student will use function notation to evaluate functions for inputs in their domains.</p> <p>The student will understand the key features of a graph.</p>

November	UNIT 4	LQE B4 LQE B5 LQE B6 IF C7 IF B6 IF B5 NQ B3 d LQE A3 CED A2	sequence terms of a sequence arithmetic sequence common difference piecewise function constraint linear extrapolation standard form point-slope form		<p>The student will recognize arithmetic sequence and relate it to linear functions.</p> <p>The student will identify and graph piecewise-defined functions.</p> <p>The student will write an equation of a line in slope-intercept form given the slope and one point, or given two points. The students will use appropriate scales for the x & y axes.</p> <p>The student will write equations of lines in standard form and point-slope form.</p>
December		IF B5 IF B3	parallel lines perpendicular lines		The student will write an equation of the line that passes through a given point, and is parallel or perpendicular to a given line.

January	UNIT 5 6.6	DS A1 DS A4 b DS A5 a DS A5 b DS A6 DS A8 DS A4 a DS A5 a DS A7 CED A1 REI A1 CED A3 REI C7 REI C8	bivariate data scatter plot correlation association line of fit linear interpolation correlation causation best-fit line linear regression correlation coefficient residual median-fit line boundary		<p>The student will investigate relationships between quantities by using points on scatter plots, and use lines of fit to make and evaluate predictions.</p> <p>The student will determine whether a data set or situation illustrates correlation or causation.</p> <p>The student will write equations of best-fit lines using linear regression, and write equations of median-fit lines.</p> <p>The student will solve linear inequalities more than one operation and/or using the Distributive Property</p> <p>The student will graph linear inequalities on the coordinate plane. The student will solve inequalities by graphing.</p>
February	UNIT 6	REI B3 IF C9	systems of equations consistent		The student will determine the number of solutions a system of linear equations has. The student will solve systems of equations by

	6.1	LQE A3 REI C6 REI B4	independent dependent inconsistent		graphing.
	6.2	CED A3 REI B4 REI B5	substitution		The student will solve systems of equations by using substitution.
	6.3 6.4	REI B4 REI B5 CED A3	elimination		The student will solve systems of equations by using elimination with addition.
	6.5	IF C8			The student will apply systems of equations to solve real-world problem, and label answers with appropriate units.
March	UNIT 7 7.1	SSE A2 NQ A1 APR A1	monomial constant properties of exponents *product, power, power of products		The student will simplify monomials using the multiplication properties of exponents.
	7.2	SSE A2 NQ A1 NQ B5	properties of exponents *quotient, power of quotient, zero power, neg. exponent scientific notation		The student will divide monomials using the properties of exponents. The student will simplify monomials containing negative and zero exponents.
	7.3	NQ A1 NQ A2 SSE A2 CED A1	rational exponents radicals exponential equations		The student will evaluate and rewrite expressions involving rational exponents. The student will solve equations involving expressions with rational exponents.
					The student will identify parts of an expression such as terms, factors,

	<p>UNIT 8 8.1</p>	<p>SSE A1</p>	<p>polynomial binomial trinomial degree standard form leading coefficient</p>		<p>and coefficients. The student will write polynomials in standard form. The student will add and subtract polynomials.</p> <p>The student will multiply a polynomial by a monomial. The student will solve equations involving the products of monomials and polynomials. The student will multiply binomials by using the FOIL method. The student will multiply polynomials by using the Distributive Property.</p> <p>The student will find square of sums and differences.</p>
	<p>8.2-3</p>	<p>SSE A2 APR A1</p>	<p>FOIL</p>		<p>The student will use the Distributive Property to factor polynomials. The student will factor polynomials by grouping.</p> <p>The student will factor trinomials with or without a leading coefficient.</p>
	<p>8.4</p>	<p>SSE A1 SSE A2</p>	<p>sum of square difference of square</p>		
	<p>8.5</p>	<p>APR A2</p>	<p>factoring GCF factor by grouping</p>		
	<p>8.6</p>	<p>SSE A2</p>			

		REI A2c			
April	8.7	REI A2c SSE A2	difference of squares perfect square trinomials		<p>The student will factor binomials that are difference of squares. The students will factor trinomials that are perfect squares.</p>
	UNIT 9 9.1	SSE A3b CED A1 CED A2 IF C7 IF B5	quadratic functions standard form of a quadratic parabola line of symmetry vertex minimum/maximum		<p>The student will analyze the characteristics of graphs of quadratic functions. The student will graph quadratic functions.</p>
	9.3	CED A2 REI A2c	root		<p>The student will solve quadratic equations by graphing.</p>
	9.4	SSE A2 SSE A3a	square root		<p>The student will solve quadratic equations by using the Square Root Property. The student will solve quadratic equations by factoring.</p>
	9.5	REI A2a REI A2c	complete the square		<p>The student will solve quadratic equations by completing the square. The student will identify key features of quadratic functions by writing quadratic equations in vertex form.</p>
	9.6	REI A2b REI A2c	quadratic formula		<p>The student will solve quadratic equations by using the Quadratic Formula.</p>
					<p>The student will graph exponential functions. The student will recognize that the data displayed has exponential behavior.</p>
					<p>The student will solve systems of linear and quadratic or linear and exponential equations by graphing or by using algebraic methods.</p>

	7.5	LQE A1a LQE A1b LQE A3	exponential equations		
	9.7	REI B4 IF C9 LQE A2	solve linear/quad systems solve linear/exp. systems		
May	10.1	DS A2 DS A3 DS A4a	quantitative data qualitative data mean median mode range		The student will represent sets of data by using measures of center. The student will represent sets of data by using percentiles.
	10.2	DS A1	scatter plot frequency table bar graph histogram		The student will represent data with plots on the real number line (using dot plots, histograms, and box plots). The student will identify and interpret factors affecting variation. The students will analyze data sets using statistics.
	10.3	DS A2 NQ B3d	box and whisker plot quartile interquartile range outlier variance distribution standard deviation		The student will interpret relative frequencies based on data in a two-way frequency table.
	10.6	DS A4a DS A4b	two way frequency table relative frequency		

