

IAA Curriculum

Content Area	Mathematics	Grade	9/10
Course Name	Algebra 1		

Unit Number	Unit Topic	Instruction	Review/Reteach/Extension	Assessing	Buffer	Total
1	Expressions and Functions	7	1	1	2	11
2	Linear Equations	11	2	2	2	17
3	Linear and Nonlinear Functions	7	1	1	3	12
4	Equations of Linear Functions	7	2	1	3	13
5	Linear Inequalities	7	1	1	3	12
6	Systems of Linear Equations and Inequalities	9	3	2	4	18
7	Exponents and Exponential Functions	9	2	1	2	14
8	Polynomials	9	2	2	3	16
9	Quadratic Functions and Equations	10	2	1	3	16
10	Statistics	6	1	1	2	10
Extra Assessment Days/Days After Keystone						35
Total Time		82	17	13	27	174
School Days	174					
Free Days	0					

Unit / Concept	Unit 1. Expressions and Functions					
Big Ideas	<ul style="list-style-type: none"> Apply operations performed on whole numbers to expressions and functions Difference between expressions, functions, and equations 					
Essential Q.	How can mathematical ideas be represented?					
Competencies	Students will be able to: <ul style="list-style-type: none"> Write algebraic expressions and use the order of operations Define appropriate quantities for descriptive modeling Represent and interpret relations and functions Interpret the graphs of functions 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
1 DAY	SWBAT write algebraic expressions for verbal expressions.	Section 1.1	CC.2.2.HS.D.1	A1.1.1.5 A1.1.2.1	A1.1.1.5.3 A1.1.1.5.1 A1.1.2.1.2	Evaluate, Order of Operations, algebraic expression, variable, term, factor, product, power, exponent, base, equivalent expressions, additive identity, multiplicative identity, multiplicative identity, reciprocal, like terms, simplest form, coefficient, coordinate system, coordinate plane, x and y axes, origin, ordered pair, x and y coordinates, relation, mapping,
1 DAY	SWBAT evaluate numerical expressions using the order of operations.	Section 1.2	CC.2.2.HS.D.1	A1.1.1.5 A1.1.2.1	A1.1.1.5.3 A1.1.1.5.1 A1.1.2.1.2	
1 DAY	SWBAT recognize and apply the properties of equality.	Section 1.3-1.4	CC.2.2.8.C.2	A1.1.1.5 A1.1.2.1	A1.1.1.5.3 A1.1.1.5.1 A1.1.2.1.2	
1 DAY	SWBAT represent relations and interpret graphs of relations.	Section 1.6	CC.2.2.8.C.1 CC.2.2.8.C.2	A1.1.1.5 A1.1.2.1	A1.1.1.5.3 A1.1.1.5.1 A1.1.2.1.2	
2 DAYS	SWBAT determine if a relation is a function. SWBAT find linear equations.	Section 1.7 <ul style="list-style-type: none"> Focus on visually identifying functions on day 1 Spend 2nd day on function notation and evaluating functions 	CC.2.2.8.C.1 CC.2.2.8.C.2	A1.1.1.5 A1.1.2.1	A1.1.1.5.3 A1.1.1.5.1 A1.1.2.1.2	
1 DAY	SWBAT interpret intercepts and symmetry of graphs of functions.	Section 1.8	CC.2.2.HS.D.7	A1.1.1.5 A1.1.2.1	A1.1.1.5.3 A1.1.1.5.1 A1.1.2.1.2	

						domain, range, independent variable, dependent variable, function, discrete function, continuous function, vertical line test, function notation, nonlinear function, intercept, x and y intercept, line symmetry, positive, negative, increasing, decreasing, extrema, relative maximum, relative minimum, end behavior,
Resources	McGraw-Hill Algebra 1 Textbook (online and/or physical), calculators, worksheets through the online textbook, graph paper, Desmos.com					
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes					
Summative Assessments	Chapter 1 Test					
Strategies for ELL and IEP Support	Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.					

Unit / Concept	Unit 2. Linear Equations					
Big Ideas	Applying the same step-by-step process to solve equations to find values of unknowns.					
Essential Q.	Why is it helpful to represent the same mathematical idea in different ways?					
Competencies	Students will be able to: <ul style="list-style-type: none"> • Create equations that describe relationships • Solve linear equations in one variable • Solve proportions • Use formulas to solve real-world problems 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
1 Day	SWBA to translate sentences into equations. SWBA to translate equations into sentences.	Section 2.1	CC.2.1.HS.F.4 CC.2.2.8.B.3 CC.2.2.HS.D.8	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	Formula, solve an equation, equivalent equations, linear equations, multi-step equation, consecutive integers, number theory, identity, ratio, proportion, means, extremes, rate, unit rate, scale, scale model, literal equation, dimensional analysis, unit analysis,
2 DAY	SWBA to solve one-step equations using addition and Subtraction. SWBA to solve one-step equations using multiplication and division.	Section 2.2 <ul style="list-style-type: none"> • Day 1: spend the day focusing on students identifying the opposite operation • Day 2: focus on one step equations. Can be presented as applying the opposite as an operation 	CC.2.1.HS.F.4 CC.2.2.8.B.3 CC.2.2.HS.D.8	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	
3 DAYS	SWBA to solve equations involving more than one step. SWBA to solve equations involving consecutive integers. SWBA to solve equations with the variable on each side. SWBA to solve equations involving grouping symbols.	Section 2.3-2.4 <ul style="list-style-type: none"> • Reverse order of operations • Variables on both sides 	CC.2.1.HS.F.4 CC.2.2.8.B.3 CC.2.2.HS.D.8	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	

1 DAY	SWBAT solve equations that utilize absolute value.	Section 2.5	CC.2.1.HS.F.4 CC.2.2.8.B.3 CC.2.2.HS.D.8	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3
2 DAYS	SWBA to compare ratios. SWBA to solve and apply proportions.	Section 2.6 <ul style="list-style-type: none"> • Scale factors • Ratios • Scale up/down 	CC.2.1.HS.F.4 CC.2.2.8.B.3 CC.2.2.HS.D.8	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3
2 DAYS	SWBA to solve equations for given variables. SWBA to use formulas to solve real world problems.	Section 2.7 <ul style="list-style-type: none"> • Literal equations is the main focus 	CC.2.1.HS.F.4 CC.2.2.8.B.3 CC.2.2.HS.D.8	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3
Resources	McGraw-Hill Algebra 1 Textbook (online and/or physical), calculators, worksheets through the online textbook				
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes				
Summative Assessments	Mid-Chapter Assessment Chapter 2 Test				
Strategies for ELL and IEP Support	Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.				

Unit / Concept	Unit 3. Linear and Nonlinear Functions					
Big Ideas	Express equations in a different form (graphically).					
Essential Q.	Why are graphs useful?					
Competencies	Students will be able to: <ul style="list-style-type: none"> • Identify linear equations, intercepts, and zeros • Graph and write linear equations • Use rate of change to solve problems 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
1 DAY	SWABT graph linear equations.	Section 3.1	CC.2.2.HS.D.7 CC.2.2.HS.D.10 CC.2.2.HS.C.2	A1.1.2.1	A1.1.2.1.3 A1.2.1.1.3	Linear equation, standard form, constant, x-intercept, y-intercept, linear function, parent function, family of graphs, root, zeros, rate of change, slope, slope-intercept form, constant function, transformation, translation, dilation, reflection, sequence, terms of the sequence, arithmetic sequence, common difference, step function, piecewise-linear function, greatest integer function, piecewise-define
1 DAY	SWABT find the zeros of linear functions.	Section 3.2	CC.2.2.HS.D.7 CC.2.2.HS.D.10 CC.2.2.HS.C.2	A1.1.2.1	A1.1.2.1.3 A1.2.1.1.3	
1 DAY	SWABT find the slope of a line. SWABT use rate of change to solve problems.	Section 3.3	CC.2.2.HS.D.7 CC.2.2.HS.D.10 CC.2.2.HS.C.2	A1.1.2.1 A1.2.2.1	A1.1.2.1.3 A1.2.1.1.3	
1 DAY	SWABT write and graph linear equations in slope-intercept form. SWABT model real-world data with equations in slope-intercept form.	Section 3.4	CC.2.2.HS.D.7 CC.2.2.HS.D.10 CC.2.2.HS.C.2	A1.1.2.1 A1.2.2.1	A1.1.2.1.3 A1.2.1.1.3	
1 DAY	SWABT recognize arithmetic sequences. SWABT relate arithmetic sequences to linear functions.	Section 3.6	CC.2.2.HS.D.7 CC.2.2.HS.D.10 CC.2.2.HS.C.2 CC.2.2.HS.C.3	A1.1.2.1 A1.2.2.1	A1.1.2.1.3 A1.2.1.1.3	
1 DAY	SWABT identify and graph step functions SWABT identify and graph piecewise-defined functions.	Section 3.7	CC.2.2.HS.D.7 CC.2.2.HS.D.10 CC.2.2.HS.C.2	A1.1.2.1	A1.1.2.1.3 A1.2.1.1.3	

1 DAY	SWABT identify and graph translations of absolute value functions. SWABT identify and graph reflections and dilations of absolute value functions.	Section 3.8 <ul style="list-style-type: none"> Utilize desmos.com as a graphing calculator so that the shifts can be animated. Easier to visualize shifts from a, k, h 	CC.2.2.HS.D.7 CC.2.2.HS.D.10 CC.2.2.HS.C.2	A1.1.2.1	A1.1.2.1.3 A1.2.1.1.3	d function, absolute value function, vertex
Resources	McGraw-Hill Algebra 1 Textbook (online and/or physical), calculators, worksheets through the online textbook, graph paper, Desmos.com					
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes					
Summative Assessments	Chapter 3 Test					
Strategies for ELL and IEP Support	Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.					

Unit / Concept	Unit 4. Equations of Linear Functions					
Big Ideas	Apply the concepts in graphing to a wide range of problems.					
Essential Q.	Why is math used to model real-world situations?					
Competencies	Students will be able to: <ul style="list-style-type: none"> • Write and graph linear equations in various forms • Use scatter plots and lines of fit, and write equations of best-fit lines using linear regression • Find inverse linear functions • Explore causation and correlation 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
1 DAY	SWABT write equations of lines in standard form and point-slope form. SWABT write linear equations in different forms.	Section 4.2 <ul style="list-style-type: none"> • Point-slope done before slope intercept 	CC.2.2.HS.C.2 CC.2.2.HS.C.6	A1.2.2.1	A1.2.2.1.3 A1.2.2.1.4	Constraint, linear extrapolation, standard form, point-slope form, parallel lines, perpendicular lines, bivariate data, scatter plot, correlation, association, line of fit, linear interpolation, correlation, causation, inverse relation, inverse function
1 DAY	SWABT write an equation of a line in slope-intercept form given the slope and one point. SWABT write an equation of a line in slope-intercept form given two points.	Section 4.1 <ul style="list-style-type: none"> • Write slope intercept from point-slope is more straightforward that solving for b and completing the equation 	CC.2.2.HS.C.2 CC.2.2.HS.C.3	A1.2.2.1	A1.2.2.1.3 A1.2.2.1.4	
1 DAY	SWABT write an equation of the line that passes through a given point, parallel to a given line. SWABT write an equation of the line that passes through a given point, perpendicular to a given line.	Section 4.3	CC.2.2.HS.C.2 CC.2.2.HS.C.3	A1.2.2.1	A1.2.2.1.3 A1.2.2.1.4	
1 DAY	SWABT investigate relationships between quantities by using points on scatter plots. SWABT use lines of fit to make and evaluate predictions.	Section 4.4	CC.2.2.HS.C.6 CC.2.4.8.B.1	A1.2.2.1 A1.2.2.2	A1.2.2.1.3 A1.2.2.1.4 A1.2.2.2.1	

1 DAY	SWABT distinguish between correlation and causation.	Section 4.5	CC.2.2.HS.C.6 CC.2.4.8.B.1	A1.2.2.1 A1.2.2.2	A1.2.2.1.3 A1.2.2.1.4 A1.2.2.2.1	
2 DAYS	SWABT find the inverse of a relation. SWABT find the inverse of a linear function.	Section 4.7	CC.2.2.HS.C.4	A1.2.2.1	A1.2.2.1.3 A1.2.2.1.4	
Resources	McGraw Hill Algebra 1 Textbook (online and/or physical), calculations, worksheets through the online textbook, graph paper, Desmos.com					
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes					
Summative Assessments	Mid-Chapter Assessment Chapter 4 Test					
Strategies for ELL and IEP Support	Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.					

Unit / Concept	Unit 5. Linear Inequalities					
Big Ideas	Apply the same concepts of equations to inequalities.					
Essential Q.	How are symbols useful in mathematics? What mathematical symbols do you know?					
Competencies	Students will be able to: <ul style="list-style-type: none"> • Solve one-step and multi-step inequalities • Solve compound inequalities and inequalities involving absolute value • Graph inequalities in two variables 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
1 DAY	SWBAT solve linear inequalities by using addition. SWBAT solve linear inequalities by using subtraction.	Section 5.1 <ul style="list-style-type: none"> • Compare to equations 	CC.2.2.HS.D.8 CC.2.2.HS.D.10	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	Inequality, set-builder notation, compound inequality, intersection, union, boundary, half-plane, closed half-plane, open half-plane
1 DAY	SWBAT solve linear inequalities by using multiplication. SWBAT solve linear inequalities by using division.	Section 5.2 <ul style="list-style-type: none"> • Division by negative is the only change from equations 	CC.2.2.HS.D.8 CC.2.2.HS.D.10	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	
1 DAY	SWBAT solve linear inequalities involving more than one operation. SWBAT solve linear inequalities involving the distributive property.	Section 5.3	CC.2.2.HS.D.8 CC.2.2.HS.D.10	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	
1 DAY	SWBAT solve compound inequalities containing the word and, and graph their solution. SWBAT solve compound inequalities containing the word or, and graph their solution set.	Section 5.4	CC.2.2.HS.D.8 CC.2.2.HS.D.10	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	
1 DAY	SWBAT solve and graph absolute value inequalities ($<$). SWBAT solve and graph absolute value inequalities ($>$).	Section 5.5	CC.2.2.HS.D.8 CC.2.2.HS.D.10	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	

2 DAY	SWBAT graph linear inequalities on the coordinate plane. SWBAT solve inequalities by graphing.	Section 5.6	CC.2.2.HS.D.7 CC.2.2.HS.D.10	A1.1.2.1	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	
Resources	McGraw-Hill Algebra 1 Textbook (online and/or physical), calculators, worksheets through the online textbook, graph paper, Desmos.com					
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes					
Summative Assessments	End of Chapter Test					
Strategies for ELL and IEP Support	Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.					

Unit / Concept	Unit 6. Systems of Linear Equations and Inequalities					
Big Ideas	Solve equations when there are 2 variables instead of only 1.					
Essential Q.	How can you find the solution to a math problem?					
Competencies	Students will be able to: <ul style="list-style-type: none"> • Solve systems of linear equations by graphing, substitution, and elimination • Solve systems of linear inequalities by graphing 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
1 DAYS	SWBAT determine the number of solutions a system of linear equations has. SWBAT solve systems of linear equations by graphing.	Section 6.1 <ul style="list-style-type: none"> • Utilize desmos.com to help with visualizing the solution 	CC.2.2.HS.D.10 CC.2.2.8.B.3 CC.2.2.HS.D.9 CC.2.2.HS.D.10	A1.1.2.2	A1.1.2.2.1 A1.1.2.2.2	System of equations, consistent, independent, dependent, inconsistent, substitution, elimination, system of inequalities
2 DAYS	SWBAT solve systems of equations by using substitution. SWBAT solve real-world problems involving systems of equations by using substitution.	Section 6.2	CC.2.2.HS.D.10 CC.2.2.8.B.3 CC.2.2.HS.D.9 CC.2.2.HS.D.10	A1.1.2.2	A1.1.2.2.1 A1.1.2.2.2	
3 DAYS	SWBAT solve systems of equations by using elimination with addition. SWBAT solve systems of equations by using elimination with subtraction. SWBAT solve systems of equations by using elimination with multiplication. SWBAT solve real-world problems involving systems of equations.	Section 6.3-6.4	CC.2.2.HS.D.10 CC.2.2.8.B.3 CC.2.2.HS.D.9 CC.2.2.HS.D.10	A1.1.2.2	A1.1.2.2.1 A1.1.2.2.2	
2 DAYS	SWBAT determine the best method	Section 6.5	CC.2.2.HS.D.10	A1.1.2.2	A1.1.2.2.1	

	for solving systems of equations. SWBAT apply systems of equations.	<ul style="list-style-type: none"> • Word Problem Review • Review Assignment 	CC.2.2.8.B.3 CC.2.2.HS.D.9 CC.2.2.HS.D.10		A1.1.2.2.2	
1 DAY	SWBAT solve systems of linear inequalities by graphing. SWBAT apply systems of linear inequalities.	Section 6.6 <ul style="list-style-type: none"> • BBQ Scenario activity • Graphing Inequalities Quiz 	CC.2.2.HS.D.7 CC.2.2.HS.D.10	A1.1.3.2	A1.1.3.2 A1.1.3.2.2	
Resources	McGraw-Hill Algebra 1 Textbook (online and/or physical), calculators, worksheets through the online textbook, graph paper, Desmos.com					
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes					
Summative Assessments	Assessment after Section 2 Assessment after Section 4 Chapter 6 Test					
Strategies for ELL and IEP Support	Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.					

Unit / Concept	Unit 7. Exponents and Exponential Functions					
Big Ideas	Apply properties to simplify exponents					
Essential Q.	How can you make good decisions? What factors can affect good decision making?					
Competencies	Students will be able to: <ul style="list-style-type: none"> • Simplify and perform operations on expressions involving exponents • Extend the properties of integer exponents to rational exponents • Write and transform exponential functions • Graph and use exponential functions 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
2 DAY	SWBAT multiply monomials using the properties of exponents. SWBAT simplify expressions using the multiplication properties of exponents. SWBAT divide monomials using the properties of exponents. SWBAT simplify expressions containing negative and zero exponents.	Section 7.1-7.2	CC.2.1.HS.F.1	A1.1.1.1 A1.1.1.3	A1.1.1.1.1 A1.1.1.3.1	Monomial, constant, order of magnitude, rational exponent, cube root, nth root, exponential equation, radical expression, rationalizing the denominator, conjugate, exponential function, asymptote, exponential growth function, exponential decay function, compound interest, geometric sequence, common ratio, recursive formula
1 DAY	SWBAT evaluate and rewrite expressions involving rational exponents. SWBAT solve equations involving expressions with rational exponents.	Section 7.3	CC.2.1.HS.F.1	A1.1.1.3	A1.1.1.1.1 A1.1.1.3.1	
2 DAY	SWBAT simplify square roots by using the Product and Quotient Properties of Square Roots. SWBAT add, subtract, and multiply radical expressions.	Section 7.4	CC.2.1.HS.F.1	A1.1.1.3	A1.1.1.1.1 A1.1.1.3.1	
1 DAY	SWBAT graph exponential functions.	Section 7.5-7.6	CC.2.1.HS.F.1	A1.2.2.1	A1.1.1.1.1	

	<p>SWBAT identify data that display exponential behavior.</p> <p>SWBAT identify the effects on the graphs of exponential functions by replacing $f(x)$ with $f(x)+k$ and $f(x-h)$ for positive negative values.</p> <p>SWBAT identify the effect on the graphs of exponential functions by replacing $f(x)$ with $af(x)$, $f(ax)$, $-af(x)$ and $f(-ax)$.</p>		CC.2.2.HS.C.5		A1.1.1.3.1	
1 DAY	<p>SWBAT write exponential functions by using a graph, a description, or two points.</p> <p>SWBAT solve problems involving exponential growth and decay.</p>	Section 7.7	CC.2.1.HS.F.1 CC.2.2.HS.C.5	A1.2.2.1	A1.1.1.1.1 A1.1.1.3.1	
1 DAY	SWBAT transform and interpret expressions of exponential functions by applying the properties of exponents.	Section 7.8	CC.2.1.HS.F.1 CC.2.2.HS.C.5	A1.2.2.1	A1.1.1.1.1 A1.1.1.3.1	
1 DAY	<p>SWBAT identify and generate geometric sequences.</p> <p>SWBAT relate geometric sequences to exponential functions.</p>	Section 7.9	CC.2.1.HS.F.1	A1.1.1.3	A1.1.1.1.1 A1.1.1.3.1	
1 DAY	<p>SWBAT use a recursive formula to list terms in a sequence.</p> <p>SWBAT write recursive formulas for arithmetic and geometric sequences.</p>	Section 7.10	CC.2.1.HS.F.1	A1.1.1.3	A1.1.1.1.1 A1.1.1.3.1	
Resources	McGraw-Hill Algebra 1 Textbook (online and/or physical), calculators, worksheets through the online textbook, graph paper, Desmos.com					
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes					
Summative Assessments	Mid-Chapter Assessment after Section 4 Chapter 7 Test					

Strategies for ELL and IEP Support

Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.



Unit / Concept	Unit 8. Polynomials					
Big Ideas	Manipulating polynomials is very similar to the idea of combining like terms.					
Essential Q.	When could a nonlinear function be used to model a real-world situation?					
Competencies	Students will be able to: <ul style="list-style-type: none"> • Add, subtract, and multiply polynomials • Factor trinomials • Factor differences of squares • Factor perfect squares 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
1 DAY	SWBAT write polynomials in standard form. SWBAT add and subtract polynomials.	Section 8.1	CC.2.2.HS.D.1 CC.2.2.HS.D.3 CC.2.2.HS.D.5 CC.2.2.HS.D.6	A1.1.1.5	A1.1.1.5.1 A1.1.1.5.2 A1.1.1.5.3	Polynomial, binomial, trinomial, degree of a monomial, degree of a polynomial, standard form of a polynomial, leading coefficient, FOIL method, quadratic expression, factoring, factoring by grouping, Zero Product Property, prime polynomial, difference of two squares, perfect square trinomial
1 DAY	SWBAT multiply a polynomial by a monomial. SWBAT solve equations involving the products of monomials and polynomials.	Section 8.2	CC.2.2.HS.D.1 CC.2.2.HS.D.3 CC.2.2.HS.D.5 CC.2.2.HS.D.6	A1.1.1.5	A1.1.1.5.1 A1.1.1.5.2 A1.1.1.5.3	
1 DAY	SWBAT multiply binomials by using the FOIL method. SWBAT multiply polynomials by using the Distributive Property.	Section 8.3	CC.2.2.HS.D.1 CC.2.2.HS.D.3 CC.2.2.HS.D.5 CC.2.2.HS.D.6	A1.1.1.5	A1.1.1.5.1 A1.1.1.5.2 A1.1.1.5.3	
1 DAY	SWBAT find squares of sums and differences. SWBAT find the product of a sum and a difference.	Section 8.4	CC.2.2.HS.D.1 CC.2.2.HS.D.3 CC.2.2.HS.D.5 CC.2.2.HS.D.6	A1.1.1.5	A1.1.1.5.1 A1.1.1.5.2 A1.1.1.5.3	
1 DAY	SWBAT use the distributive property to factor polynomials. SWBAT factor polynomials by grouping.	Section 8.5	CC.2.2.HS.D.1 CC.2.2.HS.D.3 CC.2.2.HS.D.5 CC.2.2.HS.D.6	A1.1.1.5	A1.1.1.5.1 A1.1.1.5.2 A1.1.1.5.3	

2 DAYS	SWBAT factor quadratic trinomials.	Section 8.6	CC.2.2.HS.D.1 CC.2.2.HS.D.3 CC.2.2.HS.D.5 CC.2.2.HS.D.6	A1.1.1.5	A1.1.1.5.1 A1.1.1.5.2 A1.1.1.5.3	
1 DAY	SWBAT factor binomials that are differences of squares. SWBAT factor trinomials that are perfect squares.	Section 8.7	CC.2.2.HS.D.1 CC.2.2.HS.D.3 CC.2.2.HS.D.5 CC.2.2.HS.D.6	A1.1.1.5	A1.1.1.5.1 A1.1.1.5.2 A1.1.1.5.3	
Resources	McGraw-Hill Algebra 1 Textbook (online and/or physical), calculators, worksheets through the online textbook, graph paper, Desmos.com					
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes					
Summative Assessments	Mid-Chapter Assessment Chapter 8 Test					
Strategies for ELL and IEP Support	Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.					

Unit / Concept	Unit 9. Quadratic Functions and Equations					
Big Ideas	Apply the concept of factoring to examining quadratic functions more closely.					
Essential Q.	Why do we use different methods to solve math problems?					
Competencies	Students will be able to: <ul style="list-style-type: none"> • Solve quadratic equations by factoring, graphing, completing the square, and using the Quadratic Formula • Analyze functions with successive differences and ratios • Identify and graph special functions • Solve systems of linear and quadratic equations 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
2 DAYS	SWBAT analyze the characteristics of graphs of quadratic functions. SWBAT graph quadratic functions. SWBAT apply translations to quadratic functions. SWBAT apply dilations and reflections to quadratic functions.	Section 9.1-9.2	CC.2.2.HS.D.3 CC.2.2.HS.D.5	A1.1.1.5	A1.1.1.5.2	Quadratic function, standard form, parabola, axis of symmetry, vertex, minimum, maximum, vertex form, double root, square root property, zero product property, completing the square, quadratic formula,
1 DAY	SWBAT solve quadratic equations by graphing. SWBAT estimate solutions of quadratic equations by graphing.	Section 9.3	CC.2.2.HS.D.3 CC.2.2.HS.D.5	A1.1.1.5	A1.1.1.5.2	
2 DAY	SWBAT solve quadratic equations by using the square root property. SWBAT solve quadratic equations by factoring.	Section 9.4	CC.2.2.HS.D.3 CC.2.2.HS.D.5	A1.1.1.5	A1.1.1.5.2	
1 DAY	SWBAT solve quadratic equations by completing the square. SWBAT identify key features of quadratic functions by writing quadratic equations in vertex form.	Section 9.5	CC.2.2.HS.D.3 CC.2.2.HS.D.5	A1.1.1.5	A1.1.1.5.2	

1 DAY	SWBAT solve quadratic equations by using the Quadratic Formula. SWBAT use the discriminant to determine the number of solutions of a quadratic equation.	Section 9.6	CC.2.2.HS.D.3 CC.2.2.HS.D.5	A1.1.1.5	A1.1.1.5.2	
2 DAYS	SWBAT solve systems of linear and quadratic equations by graphing. SWBAT solve systems of linear and quadratic equations by using algebraic methods.	Section 9.7	CC.2.2.HS.D.3 CC.2.2.HS.D.5	A1.1.1.5	A1.1.1.5.2	
1 DAY	SWBAT combine functions by using addition and subtraction. SWBAT combine functions by using multiplication.	Section 9.9	CC.2.2.HS.D.3 CC.2.2.HS.D.5	A1.1.1.5	A1.1.1.5.2	
Resources	McGraw-Hill Algebra 1 Textbook (online and/or physical), calculators, worksheets through the online textbook, graph paper, Desmos.com					
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes					
Summative Assessments	Mid-Chapter Assessment End of Chapter Test					
Strategies for ELL and IEP Support	Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.					

Unit / Concept	Unit 10. Statistics					
Big Ideas	Utilizing mathematics to analyze real-world data					
Essential Q.	How are statistics used in the real world?					
Competencies	Students will be able to: <ul style="list-style-type: none"> • Determine which measure of center best describes a set of data • Represent data using dot plots, histograms, bar graphs, and box plots and analyze their shapes • Summarize data in two-way frequency tables • Describe the effects linear transformations have on measures of center and spread 					
Dates (estimates only)	Smart Objectives	Instructional Strategies and Activities	PA CC Standards	Keystone or PSSA Anchors	Keystone / PSSA Eligible Content	Vocabulary
1 DAY	SWBAT represent sets of data by using measures of center. SWBAT represent sets of data by using percentiles.	Section 10.1	CC.2.4.HS.B.1 CC.2.4.HS.B.3	A1.2.3.1 A1.2.3.2	A1.2.3.1.1 A1.2.3.2.1 A1.2.3.2.2 A1.2.3.2.3	Variable, quantitative data, qualitative data, measures of center, measures of central tendency, mean, median, mode, percentiles, dot plot, frequency table, bar graph, cumulative frequency, histogram, measures of spread or variation, range, quartiles, measure of position, lower quartile, upper quartile, five-number summary, interquartile range, outlier, standard
1 DAY	SWBAT represent data by using dot plots. SWBAT determine whether a discrete or continuous graphical representation is appropriate, and then create the bar graph or histogram.	Section 10.2	CC.2.4.HS.B.1 CC.2.4.HS.B.3	A1.2.3.1 A1.2.3.2	A1.2.3.1.1 A1.2.3.2.1 A1.2.3.2.2 A1.2.3.2.3	
1 DAY	SWBAT identify and interpret factors affecting variation. SWBAT analyze data sets using statistics.	Section 10.3	CC.2.4.HS.B.1 CC.2.4.HS.B.3	A1.2.3.1 A1.2.3.2	A1.2.3.1.1 A1.2.3.2.1 A1.2.3.2.2 A1.2.3.2.3	
1 DAY	SWBAT describe the shape of a distribution. SWBAT use the shapes of distributions to select appropriate statistics.	Section 10.4	CC.2.4.HS.B.1 CC.2.4.HS.B.3	A1.2.3.1 A1.2.3.2	A1.2.3.1.1 A1.2.3.2.1 A1.2.3.2.2 A1.2.3.2.3	

1 DAY	<p>SWBAT determine the effect that transformations of data have on measures of central tendency and variation.</p> <p>SWBAT compare data using measures of central tendency and variation.</p>	Section 10.5	CC.2.4.HS.B.1 CC.2.4.HS.B.3	A1.2.3.1 A1.2.3.2	A1.2.3.1.1 A1.2.3.2.1 A1.2.3.2.2 A1.2.3.2.3	deviation, variance, distribution, negatively skewed distribution, symmetric distribution, positively skewed distribution,
1 DAY	<p>SWBAT summarize data in two-way frequency tables.</p> <p>SWBAT summarize data in two-way relative frequency tables.</p>	Section 10.6	CC.2.4.HS.B.1 CC.2.4.HS.B.3	A1.2.3.1 A1.2.3.2	A1.2.3.1.1 A1.2.3.2.1 A1.2.3.2.2 A1.2.3.2.3	linear transformation, two-way frequency table, relative frequency, two-way relative frequency table, marginal frequency, joint frequency, conditional relative frequency, association
Resources	McGraw-Hill Algebra 1 Textbook (online and/or physical), calculators, worksheets through the online textbook, graph paper, Desmos.com					
Formative Assessments	Continual ongoing assessment through homework assignments, classwork assignments, exit tickets, Do Nows, and quizzes					
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Strategies for ELL and IEP Support	Built in reteaching/extension days to show real world application. Textbook resources provide video lessons in both Spanish and English to help support ELL students. Resources in the textbook that facilitate interventions based on percentage of students that get questions right/wrong. Scaffolded problems to provide each student with appropriate rigor.					