

HN Algebra 1

Unit:	Chapter 1 – Solving One Variable Equations (Days 1-21)						
Big Ideas:	Solve equations in one variable. Write and solve one-variable equations from word problems.						
Unit Essential Questions:	How can inverse operations be used to solve an equation for a variable? How can algebra be used to solve real-world problems involving weighted averages, uniform motion, and mixtures?						
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
Course Introduction and Prerequisites (3 days)	CC.2.1.8.E.1 CC.2.1.HS.F.2	real, rational, irrational, integer, whole, natural		Classify real numbers, Compare and order real numbers. Manipulate and analyze using a variable to represent an unknown on a physical numberline/"clothesline", Utilize a TI-30XIIS appropriately	"Clothesline" reasoning, Get to know you BINGO	Syllabus, Student Survey, Calculator Practice worksheet, "Clothesline"	
1.1 – Algebraic Properties (1 day)	CC.2.2.7.B.1	Identity, inverse, commutative, associative, equality, zero, distributive	How does one use the algebraic properties to simplify expressions and solve problems?	Recognize and use the commutative, associative, identity, inverse, equality, zero, and distributive properties when simplifying expressions.	Kahoot:Algebraic properties	Notes, calculators, Keystone formula sheet,	1.1 WS
1.2 – Solving Multi-Step Equations (2 days)	CC.2.2.HS.D.8		How are inverse operations used to isolate a variable in an equation?	Solve multi-step equations.		Notes, calculators, Find and Fix worksheet	1.2 WS,
Review and Evaluate (2 days)				Establish benchmark for Keystone learning objectives			1.1-1.2 Quiz CDT test
1.3 – Writing and Solve Equations from Word Problems (2 days)	CC.2.2.HS.D.10	consecutive	How does one translate a word problem to an algebraic equation?	Write and solve one variable equations from a problem-solving scenario. Interpret solutions to one variable equations.		Notes, calculators, Additional WP practice WS	1.3 WS
1.4 – Solving Equations with Variables on Both Sides (2 days)	CC.2.2.HS.D.8		How does one isolate a variable in a equation with variable terms on both sides?	Solve multi-step equations with variables on both sides. Solve equations that have no solutions or an infinite number of solutions.	Riddle WS	Notes, calculators,	1.4 WS
1.5 – Mixture and Uniform Motion (3 days)	CC.2.2.HS.D.10	concentration, uniform motion	How does one solve problems involving mixtures and uniform motion?	Write and solve problems involving mixtures. Write and solve problems involving uniform motion.		Notes, calculators, Additional WP practice WS (part 2)	1.5 WS
Review and Evaluate (1 day)							1.3 and 1.5 Word Problem Quiz
1.6 Ratios and Proportions (1 day)	CC.2.2.HS.D.8	proportion	How does one determine if two ratios are equivalent? How does one solve proportions?	Solve proportions. Write and solve applications that involve ratios and proportions.		Noes, calculators	1.6 WS
1.7 – Absolute Value Equations (2 days)	CC.2.2.HS.D.8	Absolute value	How does one solve equations involving absolute value?	Write and solve equations involving absolute value.		Notes, calculators	1.7 WS
Review and Evaluate (2 days)						Chapter 1 Study Guide	Chapter 1 Test

running day count: 21

Unit:	Chapter 2 – Solving One Variable Inequalities (Days 22-32)						
Big Ideas:	Solve and graph inequalities in one variable. Write and solve one-variable inequalities from word problems.						
Unit Essential Questions:	How can solutions to inequalities be represented? How can inverse operations be used to solve an inequality for a variable?						
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
2.1 – Solve and Graph Inequalities (1 day)	CC.2.2.HS.D.10	inequality	How does one use inverse operations to solve inequalities? How are solutions to inequalities represented?	Solve inequalities. Graph inequalities on a number line.		Notes, calculators	2.1 WS
2.2 – Compound Inequalities (4 days)	CC.2.2.HS.D.10	Compound inequality conjunction disjunction	How are solutions to “and” and “or” problems different?	Solve compound inequalities.		Notes, calculators,	2.2 WS Stations Maze Activity
Review and Evaluate (1 day)							2.1-2.2 Quiz
2.3 – Absolute Value Inequalities (2 days)	CC.2.2.HS.D.10		How does one solve absolute value inequalities? When will there be no solution to an absolute value inequality?	Solve inequalities involving absolute value.		Notes, calculators	2.3 WS
2.4 – Writing and Solving Inequalities from Word Problems (1 days)	CC.2.2.HS.D.10		How does one translate a word problem to an algebraic inequality?	Write and solve one variable inequalities from a problem-solving scenario.		Notes, calculators Inequality translation Kahoot	2.4 WS
Review and Evaluate (2 days)							Chapter 2 Study Guide Chapter 2 Test

running day count: 32

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2022-2023

Unit:	Chapter 3 – Relations and Functions (Days 33-43)						
Big Ideas:	Determine the domain and range of a relation. Determine if a relation is a function. Evaluate functions.						
Unit Essential Questions:	What is a function and how can one determine if a relation is a function?						
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
3.1 – The Coordinate Plane (1 day)	CC.2.2.7.B.3	Cartesian coordinate plane, axes, ordered pair, origin, quadrants, Relation, cross product, domain and range	How does one graph points in the coordinate plane?	Graph ordered pairs on a coordinate plane. Find a cross product of two sets to create a relation		Notes, calculators	3.1 WS
3.2 – Domain, and Range and Interval Notation (4 days)	CC.2.2.HS.D.1	interval notation piece wise relation	How are domain and range determined from a graph? What are the different methods of representing a relation? How can we use interval notation to describe a set of numbers?	Identify the domain and range of relations as sets of ordered pairs, tables, mappings, and graphs. Identify the domain and range of a continuous relation. Write a continuous set of numbers with interval notation	Cut and paste matching interval notation activity	Notes, calculators Kahoot - Domain and range from relations	3.2 WS
Review and Evaluate (1 day)							3.1-3.2 Quiz
3.3 – Functions (1 day)	CC.2.2.HS.C.1	Function Vertical Line test	How does one determine if a relation is a function?	Determine if a given relation is a function.		Notes, calculators,	Progress Learning Assignment - Chapter 3 Section 3
3.4 – Linear Equations and Functions (1 day)	CC.2.2.HS.C.1	Linear equation	How do we determine if an ordered pair is a solution to an equation? What factors determine if an equation is linear?	Determine if a given equation is linear. Determine if an ordered pair is a solution for a linear equation.		Notes, calculators	3.4 WS
3.5 – Function Notation (3 days)	CC.2.2.HS.C.1	Function notation	What is function notation and how is it used?	Evaluate functions for a given value of the domain. Use a value in the range of a function to determine the corresponding value in the domain. Utilize function notation to evaluate expressions	Mystery Sum Activity	Notes, calculators,	3.5 WS
Review and Evaluate (2 days)						Kahoot - Chapter 3 Test Review	Chapter 3 Test

running day count: 45

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Unit:		Chapter 4 – Writing Linear Functions (Days 44-59)					
Big Ideas:		Use slope and rate of change to solve problems. Write linear equations in point-slope, slope-intercept, and standard forms.					
Unit Essential Questions:		How can given information be used to write a linear equation? How can one change between different forms of linear equations?					
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
4.1 – Slope and Rate of Change (3 days)	CC.2.1.HS.F.3	Slope, rate of change	How can slope be determined given two points in the plane? What does average rate of change mean and how can it be used to solve problems?	Find the slope of a line given the coordinates of two points on the line. Identify, describe, and/or use constant rates of change. Apply the concept of linear rate of change (slope) to solve problems.		Notes, calculators,	4.1 WS (slope formula) 4.1 WS (rate of change)
4.2 – Write Equations in Point-Slope Form (1 day)	CC.2.2.HS.C.6	Point-slope form	How does one write an equation in point-slope form?	Write a linear equation in point-slope form given the slope of a line and a point on the line or two points on the line.		Notes, calculators	Progress Learning assignment
4.3 – Write Equations in Slope-Intercept Form (4 days)	CC.2.2.HS.C.6	Slope-intercept form, y-intercept	How does one write an equation in slope-intercept form?	Write a linear equation in slope-intercept form given the slope of a line and a point on the line or two points on the line.		Notes, calculators	4.3 WS
Review and Evaluate (1 day)							4.1-4.3 Quiz
4.4 – Write Equations in Standard Form (1 days)	CC.2.2.HS.C.6	Standard form	What are the requirements for an equation to be considered in standard form? How does one write an equation in standard form?	Write a linear equation in standard form given the slope of the line and the y-intercept of the line, the slope of the line and a point on the line, or two points on the line. Include special cases where slope is zero or undefined		Notes, calculators	4.4 WS
4.5 – Applications of Linear Functions (3 days)	CC.2.2.HS.C.6		How does one write a linear equation from a word problem?	Create, interpret, and/or use the equation of a linear function.		Notes, calculators	4.5 WS
Review and Evaluate (2 days)						Jeopardy review game	Chapter 4 Test
4.6 – Write Equations from Patterns (1 day)	CC.2.2.HS.C.3		How can patterns be used to write a linear equation?	Write a linear equation from an arithmetic sequence.		Notes, calculators	4.6 WS

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Unit:		Chapter 5 – Graphing Linear Functions (Days 60-85)					
Big Ideas:		Graph linear equations and use them to represent real-world scenarios.					
Unit Essential Questions:		What different methods can be used to graph a linear equation? How can one determine the solutions to a linear inequality?					
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
5.1 – Introduction to Graphing (1 day)	CC.2.2.HS.D.7		How can a chart be made that can be used to graph a linear equation?	Graph linear equations by making a chart and plotting points. Label axes of graphs appropriately		Notes, calculators, straightedge	5.1 WS
5.2 – Graphing with Slope Intercept and Point Slope Forms (3 days)	CC.2.2.HS.D.7		How does one graph equations if given in point-slope or slope-intercept form?	Graph a linear equation given in slope intercept form Graph a linear equation given in point slope form by identifying the point and slope given in the formula	DESMOS activity: Mario Kart Tracks	Notes, calculators, Graphic organizer for graphing with $y=mx+b$	5.2 WS
5.3 – Graph Standard Form Equations (1 day)	CC.2.2.HS.D.7	x-intercept y-intercept undefined slope	What methods can be used to graph equations given in standard form? How does one graph a line with only one intercept?	Find the x- and y-intercepts of a linear equation and use them to graph the equation. Convert equations in standard form to equations in slope-intercept form in order to graph them. Graph lines with only one intercept.		Notes, calculators,	5.3 WS
Review, Evaluate and Enrich (2 days)					DESMOS: Exploring parallel and perpendicular lines		5.1-5.3 Quiz
5.4 – Interpreting Graphs of Linear Functions (2 days)	CC.2.2.HS.D.7		How can we create a graph to represent a given situation? What information can we interpret from the slope and y-intercept of a graph?	Represent real-life situations with a linear graph. Interpret graphs of linear functions.		Notes, calculators	5.4 WS Extra Practice interpreting graphs
5.5 – Scatter Plots and Best-Fit Lines (2 days)	CC.2.2.HS.D.7	Scatter plot, line of best-fit, correlation	How can scatter plots be used to model data? How can one find predicted values given a scatter plot and line of best fit?	Graph and interpret plots on a scatter plot. Draw and write equations for best fit lines and make predictions using those equations. Solve problems by using models.		Notes, calculators	5.5 Progress learning Scatter Plots practice
5.6 – Graphing and Writing Linear Inequalities (2 days)	CC.2.2.HS.D.7	Linear inequality	What does the solution set for a linear inequality look like?	Graph linear inequalities.	Drag and drop Puzzle Doc	Notes, calculators,	5.6 WS
5.7 – Interpreting Graphs of Linear Inequalities (1 day)	CC.2.2.HS.D.7		What information can be obtained from the graph of a linear inequality?	Write linear inequalities to describe real-life situations. Interpret graphs of linear inequalities.		Notes, calculators	5.7 WS

Review and Evaluate (2 days)						Chapter 5 Study Guide	Chapter 5 Test
CDT Testing day Review and Mid-Term Exam (5 Days)						MidTerm Study Guide	Mid-Term Exam

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Unit:	Chapter 6 – Systems of Equations and Inequalities (Days 86-100)						
Big Ideas:	Write and solve systems of equations in two variables.						
Unit Essential Questions:	What are the different methods that can be used to solve a system of equations and how does one determine what method would be best to use in a given scenario?						
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
6.1 – Solve Systems of Equations by Graphing (2 days)	CC.2.2.HS.D.10	System of equations point of intersection consistent system inconsistent system	How does one solve a system of equations by graphing? When will there not be one solution to a system of linear equations?	Solve systems of equations by graphing. Recognize special cases where there is no solution or an infinite number of solutions		Notes, calculators, graph paper, straightedge, Desmos.com	6.1 WS
6.2 – Solve Systems of Equations by Substitution (2 days)	CC.2.2.HS.D.10	Substitution	What form must an equation be in in order to use solve a system using substitution?	Solve systems of equations using substitution.		Notes, calculators,	6.2 WS
6.3 – Solve Systems of Equations by Elimination (2 days)	CC.2.2.HS.D.10	elimination additive inverse	How does one solve a system of equations using elimination?	Solve systems of equations using elimination.	BOOM cards	Notes, calculators	6.3 WS
Review and Evaluate (2 day)				Choose an appropriate method to solve a given system of equations		Blooket	6.1-6.3 Quiz
6.4 – Applications of Systems of Equations (1 days)	CC.2.2.HS.D.10		How does one translate a word problem to a system of equations?	Write and/or solve a system of linear equations from a problem situation. Interpret solutions to systems of linear equations.		Notes, calculators	Progress Learning assignment
6.5 – Solve Systems of Inequalities (2 days)	CC.2.2.HS.D.10		What does the solution to a system of linear inequalities look like?	Solve systems of inequalities by graphing. Naming solutions to a given graph of linear inequalities		Notes, calculators	Mad Math Activity
6.6 – Applications of Systems of Inequalities (2 days)	CC.2.2.HS.D.10	Linear programming minimize maximize	How does one translate a word problem to a system of inequalities? How are maximum or minimum values determined from the graph of a system of inequalities?	Write and/or solve a system of linear inequalities from a problem situation		Notes, calculators	6.6 WS
Review and Evaluate (3 days)						Kahoot Ch. 6 Test Review	Chapter 6 Test

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Unit:		Chapter 7 – Exploring Polynomials (Days 101-113)					
Big Ideas:		Perform operations with polynomials.					
Unit Essential Questions:		What are polynomials and how does one add, subtract, multiply, and divide polynomials?					
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
7.1 – Classify Polynomials (1 day)	CC.2.2.HS.D.3	Polynomial, monomial, binomial, trinomial, degree, coefficient, leading term, leading coefficient		Classify polynomials. Find the degree of a polynomial. Arrange the terms of a polynomial so that the degree of the terms are in ascending or descending order. Identify the leading coefficient.		Notes	7.1 Crossword puzzle
7.2 – Multiply Monomials (3 days)	CC.2.2.HS.D.3			Multiply monomials. Simplify expressions involving powers of monomials.	Exponent Battleship	Notes, calculators,	7.2 WS
Review and Evaluate (1 day)							7.1-7.2 Quiz
7.3 – Divide Monomials (1 day)	CC.2.2.HS.D.3			Simplify expressions involving polynomials divided by monomials. Simplify expressions containing zero and negative exponents.		Notes, calculators	7.3 WS
7.4 – Add and Subtract Polynomials (2 days)	CC.2.2.HS.D.3			Add and subtract polynomials. Apply addition and subtraction of polynomials to answer word problems involving perimeter, area, and profit		Notes, calculators, Polynomials choice board	7.4 WS
7.5 – Multiply Polynomials (3 days)	CC.2.2.HS.D.3	FOIL method		Multiply a polynomial by a monomial. Multiply polynomials.	Differentiated Task Cards on Multiplying Polynomials	Notes, calculators,	7.5 WS
Review and Evaluate (0.5 day)							Lessons 4 and 5 Canvas quiz
7.6 – Special Products (0.5 day)	CC.2.2.HS.D.3	difference of two squares perfect square trinomials		Use patterns to find $(a + b)^2$, $(a - b)^2$, and $(a + b)(a - b)$.		Notes, calculators	7.6 Practice
Review and Evaluate (2 days)						Jeopardy review game	Chapter 7 Test

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Unit:		Chapter 8 – Factoring Polynomials (Days 114-127)					
Big Ideas:		Factor polynomials.					
Unit Essential Questions:		What does factoring mean in the context of polynomials? How does one know what method to use to factor a polynomial?					
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
8.1 – GCF and LCM of Monomials (2 days)	CC.2.2.HS.D.3	Greatest common factor, least common multiple	How does one determine GCF and LCM for a set of monomials?	Find greatest common factors (GCF) and least common multiples (LCM) for sets of monomials.		Notes, calculators	8.1 WS
8.2 – Factoring Polynomials Using GCF (2 days)	CC.2.2.HS.D.3		How is factoring a polynomial using GCF similar to using the distributive property?	Use the GCF and the distributive property to factor polynomials.		Notes, calculators,	Gridwords WS
8.3 – Factor by Grouping (1 day)	CC.2.2.HS.D.3	grouping	How can one determine if a polynomial will factor using grouping?	Factor polynomials by grouping.		Notes, calculators,	Gridwords WS
8.4 – Factoring Difference of Squares (1 days)	CC.2.2.HS.D.3		How can one determine if a binomial can be factored as a difference of squares?	Identify and factor binomials that are differences of squares		Notes, calculators,	Gridwords WS
8.5 – Factoring Trinomials(3 days)	CC.2.2.HS.D.3		How does one factor a trinomial with a leading coefficient of 1? What aspects of factoring trinomials change when the leading coefficient is not 1?	Identify and factor trinomials	Figure out Factoring Google Sheet exploration	Notes, calculators	Wksht. 84
Review and Evaluate (2 day)						“I Have, Who Has” card game	Quiz Lessons 1-5 (only a=1 in trinomials)
8.6 – Simplifying Rational Expressions (1 day)	CC.2.2.HS.D.6	Rational expression	How is factoring involved in simplifying rational expressions?	Simplify rational expressions.		Notes, calculators,	Independent practice in notes
Review and Evaluate (2 days)						Kahoot - Factor review	Chapter 8 study guide Chapter 8 Test

running day count:128

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Unit:		Chapter 9 – Radical Expressions (Days 128-138)					
Big Ideas:		Perform operations with radical expressions.					
Unit Essential Questions:		How does one simplify and perform operations with radical expressions?					
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
9.1 – Simplifying Radical Expressions (1 day)	CC.2.1.HS.F.2	Radical expression, perfect square	What does it mean to simplify a radical expression?	Simplify square roots. Simplify radical expressions.		Notes, calculators, Algebra with Pizazz Worksheets	Wksht. 207
9.2 – Adding and Subtracting Radical Expressions (1 day)	CC.2.1.HS.F.2		How does one determine if two radical expressions are like terms and can be combined by addition or subtraction?	Add and subtract radical expressions.		Notes, calculators, Algebra with Pizazz Worksheets	Wksht. 210
Review and Evaluate (1 day)							9.1-9.2 Quiz
9.3 – Multiplying Radical Expressions (2 days)	CC.2.1.HS.F.2		How does one multiply radical expressions?	Multiply radical expressions.		Notes, calculators, Algebra with Pizazz Worksheets	Wksht. 215
9.4 – Dividing Radical Expressions (2 days)	CC.2.1.HS.F.2		What does it mean to rationalize the denominator of a fraction?	Divide rational expressions and rationalize denominators.		Notes, calculators, Algebra with Pizazz Worksheets	Wksht. 211
9.5 – The Pythagorean Theorem (2 days)	CC.2.3.8.A.3	Pythagorean Theorem	What is the Pythagorean Theorem and how does it involve radical expressions?	Use the Pythagorean Theorem to solve problems.		Notes, calculators, Algebra with Pizazz Worksheets	Wksht. 206
Review and Evaluate (2 days)							Chapter 9 Multiple Choice Test Chapter 9 Free Response Test

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2022-2023

Unit:		Chapter 10 – Data Analysis and Probability (Days 139-160)					
Big Ideas:		Analyze data from various types of displays. Find probabilities of simple and compound events.					
Unit Essential Questions:		What are different methods of displaying data and how can the different displays be used to analyze the data? What is probability and how can one determine the probability of simple and compound events?					
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
10.1 – Measures of Central Tendency (1 day)	CC.2.4.HS.B.1 CC.2.4.HS.B.2	Measure of central tendency, mean, median mode	What are the different ways that central tendency is measured in a set of data?	Find the mean, median, and/or mode of a given set of data.		Notes, calculators, Algebra with Pizazz Worksheets	Wksht. CC-61
10.2 – Five Number Summary and Range (2 days)	CC.2.4.HS.B.1 CC.2.4.HS.B.2	Quartiles, extreme values, outlier	What are quartiles and how are they determined for a data set?	Calculate and/or interpret the range, quartiles, and interquartile range of data.		Notes, calculators	10.2 Practice
Review and Evaluate (1 day)							10.1-10.2 Quiz
10.3 – Interpret Circle, Line, and Bar Graphs (1 day)	CC.2.4.HS.B.1 CC.2.4.HS.B.2	Circle graph, line graph, bar graph, line plot	How can information be attained from circle, line, and bar graphs?	Estimate or calculate to make predictions based on a circle, line, or bar graph.		Notes, calculators, Algebra with Pizazz Worksheets	Wksht. CC-62, CC-63, and CC-65
10.4 – Analyze Box-and-Whisker, Stem-and-Leaf, and Scatter Plots (2 days)	CC.2.4.HS.B.1 CC.2.4.HS.B.2	Box-and-whisker plot, stem-and-leaf plot	How can information be attained from box-and-whisker, stem-and-leaf, and scatter plots?	Analyze data, make predictions, and/or answer questions based on data displayed in box-and-whisker plots, stem-and-leaf plots, and scatter plots.		Notes, calculators, Algebra with Pizazz Worksheets	10.4 Practice, wksht. 36
Review and Evaluate (1 day)							
10.5 – Single Event Probability (1 day)		Probability, mutually exclusive, inclusive	What is the difference between finding probabilities of mutually exclusive events as opposed to inclusive events?	Find probabilities of single events.		Notes, calculators	Single Event Probability Wksht.
10.6 – Compound Probability (1 day)		Independent, dependent	What is the difference between finding probabilities of independent events as opposed to dependent events?	Find probabilities for compound events.		Notes, calculators	Independent and Dependent Events Wksht.
Review and Evaluate (6 days)					Probability Project		Chapter 10 Multiple Choice Test Chapter 10 Free Response Test
Course Review and Keystone Preparation (6 days)							

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Unit:		Chapter 11 – Non-linear Equations (Days 162-180)					
Big Ideas:		Graph non-linear equations. Solve quadratic and exponential equations.					
Unit Essential Questions:		What are exponential functions and what do they look like graphically? What are quadratic functions and what do they look like graphically?					
Concept & Pacing	Pa Core Standard	Key Vocabulary	Essential Questions	Competencies (skills, knowledge, abilities)	Mini-Lessons/ Activities	Instructional Materials	Assessments
11.1 – Exponential Equations (2 days)	CC.2.2.HS.C.5	Exponential function, exponential growth, exponential decay	How can formulas involving exponential growth, exponential decay, and compound interest be used to solve problems?	Solve problems involving exponential growth and decay.		Notes, calculators	11.1 Practice
11.2 – Graphing Exponential Functions (1 day)	CC.2.2.HS.C.5		What do the graphs of exponential functions look like?	Graph exponential functions.		Notes, calculators	11.2 Practice
Review and Evaluate (1 day)							
11.3 – Arithmetic and Geometric Sequences (2 days)	CC.2.2.HS.D.7	Arithmetic sequence, geometric sequence	How can arithmetic and geometric sequences be used to solve problems?	Determine if a given sequence represents an arithmetic or geometric sequence. Solve problems involving arithmetic and geometric sequences.		Notes, calculators	11.3 Practice
11.4 – Graphing Quadratic Functions (2 days)	CC.2.2.HS.C.2	Quadratic function, vertex, axis of symmetry, parabola	What do the graphs of quadratic functions look like?	Graph quadratic functions.		Notes, calculators	11.4 Practice
11.5 – Solving Quadratic Equations (2 days)	CC.2.2.HS.D.4	Quadratic formula	How do the factors/roots of a quadratic function relate to the graph of the function?	Solve quadratic equations by factoring, graphing, and the quadratic formula.		Notes, calculators	11.5 Practice
Review and Evaluate (1 day)							
11.6 – Other Non-linear Equations (2 days)	CC.2.2.HS.C.5	Piecewise function, absolute value function, greatest integer function	What are piecewise, greatest integer, and absolute value functions and how are they graphed?	Graph absolute value, greatest integer, and piecewise functions.		Notes, calculators	11.6 Practice
Review and Evaluate (2 days)							Chapter 11 Multiple Choice Test Chapter 11 Free Response Test
Course conclusion and Final Exam (4 days)							Final Exam

