Department: Math
Course Title: Algebra 1
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Unit Title	Unit Length (weeks)	Dates of Unit (Month - Month)	Essential Questions	Topics to be Covered Texts Used	Skills to be Assessed	Standard Alignment	Formative Assessments	Summative Assessments
Equalities and Inequalities	5	August - September	- What is an equation? - What is an expression? - What does equality mean? - What is an inequality? - How can we use linear equations and linear inequalities to solve real world problems? - What is a solution set for a linear equation or linear inequality? - How can models and technology aid in the solving of linear equations and linear inequalities?	Savvas Learning Company. (2010). enVision Algebra 1 Savvas Learning Company.. ISBN-13: 9781418401825 Chapter 1 Operations on Real Numbers Solving Linear Equations Solving Equations with a Variable on Both Sides Literal Equations and Formulas Solving Inequalities in One Variable Compound Inequalitites Absolute Value Equations and Inequalitites	Students will be able to: Obtain a solution to an equation, no matter how complex, always involves the process of undoing the operations. Interpret the structure of expressions. Write expressions in equivalent form to solve problems. Create equations that describe numbers or relationships. Solve equations and inequalities in one variable. Understand solving equations as a process of reasoning and explain the reasoning. Reason quantitatively and use units to solve problems.	8EE 7. A - SSE 1. A - SSE 3. A - CED 1 N - Q 3 A - REI 1. A - REI 3 N - Q 1 N - Q 2 A - CED 4.	Homework from each investigation of the chapter, including vocabulary, exercises and word problems. Chapter test includes free response Quick Quizzes – every 2 - 3 investigations in the chapter – gives immediate feedback to the student & teacher. Remediate accordingly. Performance Task: The Performance Task for this unit will involve the application of transformations to a work of art.	UNIT TEST
Functions	3	October - November	What is a function? What are the different ways in which functions may be represented? How can functions be used to model real world situations, make predictions, and solve problems?	Savvas Learning Company. (2010). enVision Algebra 1 Savvas Learning Company.. ISBN-13: 9781418401825 Chapter 2 Slope - Intercept Form Point - Slope Form Standard Form Parallel and Perpendicular Lines	Students will be able to: Know that functions are a mathematical way to describe relationships between two quantities that vary. Create equations that describe numbers or relationships. Represent and solve equations and inequalities graphically. Understand the concept of a function and use function notation. Interpret functions that arise in applications in terms of the context. Analyze functions using different representations.	8F 1. 8F 2. 8F 5. A - CED 2. A - CED 10 F - IF 1. F - IF 2 F - IF 4. F - IF 9. F - IF 7b. F - IF 5	Homework from each investigation of the chapter, including vocabulary, exercises and word problems. Chapter test includes free response Quick Quizzes – every 2 - 3 investigations in the chapter – gives immediate feedback to the student & teacher. Remediate accordingly. Performance Task: The Performance Task for this unit will involve the application of transformations to a work of art.	UNIT TEST

Linear Functions	6	Novemer - December	What is a linear function? What are the different ways that linear functions may be represented? What is the significance of a linear function's slope and y - intercept? How may linear functions model real world situations? How may linear functions help us analyze real world situations and solve practical problems?	Savvas Learning Company. (2010). enVision Algebra 1 Savvas Learning Company.. ISBN-13: 9781418401825 Chapter 3 Domain and Range of Functions Linear Functions Transforming Linear Functions Arithmetic Sequences	Students will be able to: Understand that linear functions are characterized by a constant average rate of change(or constant additive change). Interpret functions that arise in applications in terms of the context. Analyze functions using different representations. Construct and compare linear (and exponential) models and solve problems. Interpret expressions for functions in terms of the situation they model.	F - IF 6. F - IF 7 F - IF 8. F - LE 1 F - LE 2. F - LE 5.	Homework from each investigation of the chapter, including vocabulary, exercises and word problems. Chapter test includes free response Quick Quizzes – every 2 - 3 investigations in the chapter – gives immediate feedback to the student & teacher. Remediate accordingly. Performance Task: The Performance Task for this unit will involve the application of transformations to a work of art.	UNIT TEST
Scatter Plots and Trend Lines	4	December - January	What are the advantages and disadvantages of analyzing data by hand versus by using technology? What is the potential impact of making a decision from data that contains one or more outliers?	Savvas Learning Company. (2010). enVision Algebra 1 Savvas Learning Company.. ISBN-13: 9781418401825 Scatter Plots and Lines of Fit Analyzing Lines of Fit	Students will be able to: Understand that although scatterplots and trend lines may reveal a pattern, the relationship of the variables may indicate a correlation, but not causation. Analyze functions using different representations. Summarize, represent and interpret data on a single count or measurement variable. Summarize, represent and interpret data on two categorical and quantitative variables. Interpret linear models.	8 - SP 1,2,3. S - ID2,3,6,7,8 and 9.	Homework from each investigation of the chapter, including vocabulary, exercises and word problems. Chapter test includes free response Quick Quizzes – every 2 - 3 investigations in the chapter – gives immediate feedback to the student & teacher. Remediate accordingly. Performance Task: The Performance Task for this unit will involve the application of transformations to a work of art.	UNIT TEST
Systems of Linear Equations	3	January - February	What does the number of solutions(none, one or infinite) of a system of linear equations represent? What are the advantages and disadvantages of solving a system of linear equations graphically versus algebraically?	Savvas Learning Company. (2010). enVision Algebra 1 Savvas Learning Company. ISBN-13: 9781418401825 Chapter 4 Solviing by Graphing Solving by Subsitutions Solving by Elimination Linear Inequalities in Two Variables Systems of Linear Inequalities	A system of linear equations is an algebraic way to compare two equations that model a situation and find the breakeven point or choose the most efficient or economic plan. . Create equations that describe numbers or relationships. Solve systems of equations. Represent and solve equations and inequalities graphically.	A - CED 3 A - REI 5, 6, and 11.	Homework from each investigation of the chapter, including vocabulary, exercises and word problems. Chapter test includes free response Quick Quizzes – every 2 - 3 investigations in the chapter – gives immediate feedback to the student & teacher. Remediate accordingly. Performance Task: The Performance Task for this unit will involve the application of transformations to a work of art.	UNIT TEST

Absolute Value Functions and Piecewise - Defined Functions	3	February - March	How can we represent real - world situations using piecewise and absolute value functions? In what ways do piecewise - defined and step functions differ from traditional functions? How do transformations affect the graphs and equations of piecewise and absolute value functions? What does the graph of an absolute value function tell us about its algebraic structure? How does the absolute value function behave differently from linear functions, and why? Why are piecewise - defined functions useful in modeling real - life scenarios? How do we interpret and construct functions that behave differently over different intervals? What is a step function, and how does it model real - life “jump” behavior (e.g., tax brackets, shipping rates)? How does the discontinuity in a step function influence its domain, range, and graph? How can transformations (shifts, stretches, reflections) be applied to complex, multi - rule functions? How do you predict the graph of a piecewise or absolute value function after a transformation?	Savvas Learning Company. (2010). enVision Algebra 1 Savvas Learning Company.. ISBN-13: 9781418401825 Chapter 5 Absolute Value Function Piecewise - Defined Function Step Functions Transformations of PWF	Students will be able to: Students will be able to graph and interpret absolute value functions and describe their key characteristics, including vertex, axis of symmetry, domain, and range. Students will construct and evaluate piecewise - defined and step functions, explaining how each rule applies over a given domain and how they model real - world situations. Students will apply transformations—including translations, reflections, and stretches/shrinks—to absolute value and piecewise - defined functions, and accurately describe the resulting changes in the graph. Students will analyze and compare different types of functions, including linear, absolute value, step, and piecewise - defined, to determine how structure influences behavior and application.	8EE2 A - SSE3 A - REI 4 A - APR1 A - CED 1 A - CED2 F - IF4 F - IF7a F - IF 8a F - BF3	Homework from each investigation of the chapter, including vocabulary, exercises and word problems. Chapter test includes free response Quick Quizzes – every 2 - 3 investigations in the chapter – gives immediate feedback to the student & teacher. Remediate accordingly. Performance Task: The Performance Task for this unit will involve the application of transformations to a work of art.	UNIT TEST
Introduction to Exponential Functions	4	March - April	What characterizes exponential growth and decay? What are real world models of exponential growth and decay? What are the limitations of exponential growth models? How can one differentiate an exponential model form a linear model given a real world data set?	Savvas Learning Company. (2010). enVision Algebra 1 Savvas Learning Company.. ISBN-13: 9781418401825 Chapter 6 Rational Exponents and Properties of Exponents Radical Expressions Exponential Functions Exponential Growth and Decay Geometric Sequences Translations of Exponential Functions	Students will be able to: When comparing an exponential model with a linear model, the question is not if the exponential model will generate very large or very small inputs, but rather when. With real data sometimes deciding whether data is linear or non - linear is more complex than just looking at a graph, differences(y to the n – y to the n - 1) or an r - value; it is important to examine differences that are approximately the same more carefully to see if there is a pattern of increasing or decreasing values that, because the pattern is exponential, soon begins to produce outputs of remarkable values.	N - RN1 N - RN2 A - SSE1b A - SSE3c F - IF7 F - BF2 F - LE1 F - LE2 F - LE3 F - LE5	Homework from each investigation of the chapter, including vocabulary, exercises and word problems. Chapter test includes free response Quick Quizzes – every 2 - 3 investigations in the chapter – gives immediate feedback to the student & teacher. Remediate accordingly. Performance Task: The Performance Task for this unit will involve the application of transformations to a work of art.	UNIT TEST

Quadratic Functions and Equations	5	April - May	What can the zeros, intercepts, vertex, maximum, minimum and other features of a quadratic function tell you about real world relationships? How is the polynomial system analogous to the system of integers? How can technology support investigation and experimentation of the way that parameters affect functions?	Savvas Learning Company. (2010). enVision Algebra 1 Savvas Learning Company.. ISBN-13: 9781418401825 Chapter 8 Key Features of a Quadratic Function Quadratic Functions in Vertex Form Modeling with Quadratic Functions Linear, Exponential, and Quadratic Models	Students will be able to: Know that quadratic functions can be used to model real world relationships and the key points in quadratic functions have meaning in the real world context. Polynomials are closed under addition, subtraction, and multiplication. Dynamic software, graphing calculators, and other technology can be used to explore and deepen our understanding of mathematics.	8EE2 A - SSE3 A - REI 4 A - APR1 A - CED 1 A - CED2 F - IF4 F - IF7a F - IF 8a F - BF3	Homework from each investigation of the chapter, including vocabulary, exercises and word problems. Chapter test includes free response Quick Quizzes – every 2 - 3 investigations in the chapter – gives immediate feedback to the student & teacher. Remediate accordingly. Performance Task: The Performance Task for this unit will involve the application of transformations to a work of art.	UNIT TEST