Timeline	Themes/Enduring Understandings/Essential Questions for the Unit	Common Core Standards Addressed	Assessments	Standards Based Skills and Concepts Targeted	Strategies/Practices Used to Teach Skills and Concepts	Resources/Texts Used
September	**Essential Questions** • What are the relationships among the number sets in the real number system? • How can the properties of real numbers be used in mathematics? • Why is the order of operations important and necessary? • How can properties be used to simply algebraic expressions? • Why is evaluating expressions important in the real world? • What does it mean to solve an equation? • How can you use an equation to solve a real world problem? • Why are inequalities necessary when solving some real world problems? • How does solving inequalities differ from solving equations? • How can compound inequalities help describe real world situations? • How do you write absolute value inequalities as compound inequalities? • How do you solve absolute value inequalities algebraically and graphically?	**A.SSE.1.a** Interpret parts of an expression, such as terms, factors, and coefficients. **A.SSE.1.b** Interpret complicated expressions by viewing one or more of their parts as a single entity. **A.SSE.2** Use the structure of an expression to identify ways to rewrite it. **A.CED.1** Create equations and inequalities in one variable and use them to solve problems. **A.CED.3** Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context	**To be assessed:** The students will be assessed on mathematical accuracy, the students' conceptual understanding and their ability to communicate mathematically. **Collection of evidence:** • 20-point quizzes-Homework quizzes will be given one per week to assess understanding of • homework. • 100-point test-A test will be given at the end of the unit. • Notebook-A notebook will be kept that includes journal entries, lesson notes, examples, student work, and corrections. **Types of assessment:** • Selected response • Academic prompt • Questions and Answer • Constructed response • Observation • Journal Entries • Work Sample **Assessment Values:** 15% Quizzes 50% Tests 20% Classwork and Homework 15% Project Criteria by which the student responses will be evaluated: • Homework will be graded in class each day by stating answers out loud, placing work on the board, or peer reviewing in cooperative learning groups • Homework quizzes will be graded on mathematical reasoning, accuracy, and presentation of	• Use the order of operations to evaluate expressions. Use formulas. • Classify real numbers. • Use the properties of real numbers to evaluate expressions. • Translate verbal expressions into algebraic expressions and equations, and vice versa. • Solve equations using the properties of equality. • Evaluate expressions involving absolute values. • Solve absolute value equations. • Solve one-step inequalities. • Solve multi-step inequalities. • Solve compound inequalities. Solve absolute value inequalities.	**Performance Tasks:** Collected homework and class work Class Review Chapter Quiz Chapter Test **Other evidence:** Daily observations – class problems 5-minute checks Daily homework checks ACT Practice **Student Self-Assessment/Reflection:** Independent class problems, 5-minute checks Homework Final Exams and review sheets	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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October	**Essential Questions:** • How can relations be represented? • How do we determine whether a given relation is a function? • How do we identify the domain and range of a relation or function? • How do you determine which form of a linear equation you should use? • How do you use the equation of the line to create the graph? • How can direct variation (proportional) relationships be represented using rules, tables, and graphs? • How can direct variation (proportions) be used to solve real-world problems? • How do you find a regression model for a given set of data? • How can you use regression models to make predictions? • How do you use transformations to help graph absolute value functions? • How is graphing inequalities similar to and different from graphing equations? • How can inequalities be used to model problems in the real world?	**F.IF.9** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). **F.IF.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. **F.IF.5** Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. **F.IF.6** Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. **A.SSE.1.b** Interpret complicated expressions by viewing one or more of their parts as a single entity. **A.CED.2** Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. F.IF.7.b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. F.BF.3 Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), andf(x + k) for specific values of k (both positive and negative); find the value of kgiven the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. **A.CED.3** Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or	**To be assessed:** The students will be assessed on mathematical accuracy, the students' conceptual understanding and their ability to communicate mathematically. **Collection of evidence:** • 20-point quizzes-Homework quizzes will be given one per week to assess understanding of • homework. • 100-point test-A test will be given at the end of the unit. • Notebook-A notebook will be kept that includes journal entries, lesson notes, examples, student work, and corrections. **Types of assessment:** • Selected response • Academic prompt • Questions and Answer • Constructed response • Observation • Journal Entries • Work Sample **Assessment Values:** 15% Quizzes 50% Tests 20% Classwork and Homework 15% Project Criteria by which the student responses will be evaluated: • Homework will be graded in class each day by stating answers out loud, placing work on the board, or peer reviewing in cooperative learning groups • Homework quizzes will be graded on mathematical reasoning, accuracy, and presentation of work. • Unit test will be graded on mathematical reasoning, accuracy, and presentation of work. • Notes and journal will be checked periodically for completion and accuracy.	• Graph a relation • Find the domain and range of a relation • Make a mapping diagram • Identify functions • Use the vertical-line test • Use function notation • Evaluate functions • Interpret function notation in real-world context • Graph a linear equation • Find the slope • Write equations of lines in point-slope form • Write equations of lines in slope-intercept form • Write equations of lines in standard form • Write equations of parallel and perpendicular lines • Identify direct variation from a graph • Identify direct variation from a table • Identify direct variation from an equation • Use proportions to solve direct variation problems • Use direct variation to solve real-world problems • Draw a scatter plot • Determine if a correlation of the data exists • Find the equation for a fitted line or trend line • Use the graphing calculator to find the line of best fit • Use the regression line to make predictions • Rewrite absolute value functions in the form . • Graph absolute value functions with and without a graphing calculator • Rewrite an absolute value function as a piecewise function • Write an equation of an absolute value function given the graph • Rewrite absolute value functions in the form . • Graph absolute value functions with and without a graphing	**Performance Tasks:** Collected homework and class work Class Review Chapter Quiz Chapter Test **Other evidence:** Daily observations – class problems 5-minute checks Daily homework checks ACT Practice **Student Self-Assessment/Reflection:** Independent class problems, 5-minute checks Homework Final Exams and review sheets	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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November	**Essential Questions:** • How can you solve a system of equations by graphing? • How can you solve a system of equations algebraically? • How can systems of equations be used to solve real-world problems? • How can you solve a system of inequalities by graphing? • How can systems of inequalities be used to model problems in the real world? • How can you solve a system of three equations and three unknowns algebraically? • How can systems of equations be used to solve real-world problems?	**A.CED.3** Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.	**To be assessed:** The students will be assessed on mathematical accuracy, the students' conceptual understanding and their ability to communicate mathematically. **Collection of evidence:** • 20-point quizzes-Homework quizzes will be given one per week to assess understanding of • homework. • 100-point test-A test will be given at the end of the unit. • Notebook-A notebook will be kept that includes journal entries, lesson notes, examples, student work, and corrections. **Types of assessment:** • Selected response • Academic prompt • Questions and Answer • Constructed response • Observation • Journal Entries • Work Sample **Assessment Values:** 15% Quizzes 50% Tests 20% Classwork and Homework 15% Project Criteria by which the student responses will be evaluated: • Homework will be graded in class each day by stating answers out loud, placing work on the board, or peer reviewing in cooperative learning groups • Homework quizzes will be graded on mathematical reasoning, accuracy, and presentation of work.	• Solve a system of equations by graphing • Classify a system without graphing • Solve a system of equations by substitution • Solve a system of equations by elimination • Solve a system without a unique solution • Use a system of equations to solve a real-world problem • Solve a system of inequalities by graphing • Solve a linear absolute value system of inequalities • Use a system of inequalities to solve a real-world problem • Solve a three-variable system of equations by elimination • Solve a three-variable system of equations by substitution • Solve a system without a unique solution • Use a system of three equations and three variables to solve a real-world problem • Solve a three-variable system using augmented matrices	**Performance Tasks:** Collected homework and class work Class Review Chapter Quiz Chapter Test **Other evidence:** Daily observations – class problems 5-minute checks Daily homework checks ACT Practice **Student Self-Assessment/Reflection:** Independent class problems, 5-minute checks Homework Final Exams and review sheets	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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December	**Essential Questions:** • What are some common characteristics of quadratic functions? • How can you graph a quadratic function using the properties of parabolas? • How can you use transformations to help graph quadratic functions? • Why do we factor quadratic expressions? • How can we solve quadratic equations? • What are complex numbers? • What are imaginary numbers and how are they used? • How can we rewrite a quadratic function in an equivalent form?	**A.SSE.1.a** Interpret parts of an expression, such as terms, factors, and coefficients. **F.IF.9** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). A.CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. **F.IF.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. **A.SSE.2** Use the structure of an expression to identify ways to rewrite it. **F.IF.8.a** Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. **N.CN.1** Know there is a complex number i such that i2 = –1, and every complex number has the form a + bi with a and b real. **N.CN.2** Use the relation i2 = –1 and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers. **F.IF.8.a** Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. **N.CN.7** Solve quadratic equations with real coefficients	**To be assessed:** The students will be assessed on mathematical accuracy, the students' conceptual understanding and their ability to communicate mathematically. **Collection of evidence:** • 20-point quizzes-Homework quizzes will be given one per week to assess understanding of • homework. • 100-point test-A test will be given at the end of the unit. • Notebook-A notebook will be kept that includes journal entries, lesson notes, examples, student work, and corrections. **Types of assessment:** • Selected response • Academic prompt • Questions and Answer • Constructed response • Observation • Journal Entries • Work Sample **Assessment Values:** 15% Quizzes 50% Tests 20% Classwork and Homework 15% Project Criteria by which the student responses will be evaluated: • Homework will be graded in class each day by stating answers out loud, placing work on the board, or peer reviewing in cooperative learning groups • Homework quizzes will be graded on mathematical reasoning, accuracy, and presentation of work. • Unit test will be graded on mathematical reasoning, accuracy, and presentation of work. • Notes and journal will be checked periodically for completion and accuracy.	• Classify a function as linear, quadratic, or neither. • Identify the vertex, the axis of symmetry, and the corresponding points of a parabola. • Find a quadratic function given three points on the function. • Find a quadratic function to model real-world data. • Graph a quadratic function of the form • Graph a quadratic function of the form • Find the vertex, axis of symmetry, and y-intercept of a parabola. • Find the minimum or maximum value of a quadratic function. • Solve real-world max/min problems using a quadratic function that models the situation. • Graph a quadratic function of the form . • Write the equation of a parabola given the vertex and a point on the parabola. • Convert a quadratic function from standard form to vertex form and vice versa. • Identify the reflection, the stretches or shrinks, and the vertical translations and horizontal translations of a quadratic function and use this information to graph the function. • Factor out a greatest common factor. • Factor a quadratic trinomial of the form . • Factor a perfect square trinomial. • Factor the difference of two squares ( ). • Solve a quadratic equation by factoring. • Solve a quadratic equation of the form by taking square roots. • Solve a quadratic equation by graphing on the graphing calculator. •Solve quadratic equations that represent real-world situations. • Simplify numbers using i.	**Performance Tasks:** Collected homework and class work Class Review Chapter Quiz Chapter Test **Other evidence:** Daily observations – class problems 5-minute checks Daily homework checks ACT Practice **Student Self-Assessment/Reflection:** Independent class problems, 5-minute checks Homework Final Exams and review sheets	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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January	**Essential Questions:** • How do you identify and classify a polynomial function? • How are the zeros of the polynomial function, the factors of the polynomial, and the solutions to the polynomial related? • How can synthetic division or long division of polynomials help graph or factor polynomials? • How do you solve polynomial equations? • What is the difference between a permutation and a combination?	**A.APR.1** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. **N.CN.9** Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials. **A.APR.3** Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. **A.APR.6** Rewrite simple rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or, for the more complicated examples, a computer algebra system. **F.IF.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. **F.IF.7.c** Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. **A.APR.2** Know and apply the Remainder Theorem: For a polynomial p(x) and a numbera, the remainder on division by x − a is p(a), so p(a) = 0 if and only if (x − a) is a factor of p(x).	**To be assessed:** The students will be assessed on mathematical accuracy, the students' conceptual understanding and their ability to communicate mathematically. **Collection of evidence:** • 20-point quizzes-Homework quizzes will be given one per week to assess understanding of • homework. • 100-point test-A test will be given at the end of the unit. • Notebook-A notebook will be kept that includes journal entries, lesson notes, examples, student work, and corrections. **Types of assessment:** • Selected response • Academic prompt • Questions and Answer • Constructed response • Observation • Journal Entries • Work Sample **Assessment Values:** 15% Quizzes 50% Tests 20% Classwork and Homework 15% Project Criteria by which the student responses will be evaluated: • Homework will be graded in class each day by stating answers out loud, placing work on the board, or peer reviewing in cooperative learning groups • Homework quizzes will be graded on mathematical reasoning, accuracy, and presentation of work. • Unit test will be graded on mathematical reasoning, accuracy, and presentation of work. • Notes and journal will be checked periodically for completion and accuracy.	• Identify a polynomial. • Classify a polynomial by degree and number of terms. • Find a polynomial function that models real-world data and use it to make predictions. • Write a polynomial in standard form. • Write a polynomial in factored form. • Find the zeros of a polynomial function. • Write a polynomial function form its zeros. • Find the multiplicity of a zero. • Divide a polynomial by a binomial using long division. • Determine if a binomial is a factor of a trinomial. • Divide a polynomial by a binomial using synthetic division. • Evaluate a polynomial using synthetic division and the Remainder Theorem. • Solve a polynomial equation by graphing. • Solve polynomial equations by factoring and using the Zero Product Property. • Factor a sum or difference of cubes. • Use the Rational Root Theorem to find a list of all the possible rational roots of a polynomial function • Find irrational and imaginary roots using conjugates or complex conjugates. • Write a polynomial equation from its roots. • For a given polynomial equation, find the number of complex roots and the possible number of real roots. • Find all of the complex zeros of a polynomial function.	**Performance Tasks:** Collected homework and class work Class Review Chapter Quiz Chapter Test **Other evidence:** Daily observations – class problems 5-minute checks Daily homework checks ACT Practice **Student Self-Assessment/Reflection:** Independent class problems, 5-minute checks Homework Final Exams and review sheets	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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February	**Enduring Understandings:** • Realize that radicals are the inverse operation of exponents. • How a root index affects the problem. • Manipulate (use addition, subtraction, multiplication and division) radical expressions and complex numbers to solve equations. • The complex number system. **Essential Questions :** • Why are radicals needed to assist in finding solutions? • What is an imaginary solution and why is it important?	**F.IF.9** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). **F.BF.1.b** Combine standard function types using arithmetic operations. **F.IF.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. **F.BF.4.a** Find inverse functions. - Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse. **F.IF.7.b** Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. **F.BF.3** Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), andf(x + k) for specific values of k (both positive and negative); find the value ofk given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. **A.SSE.2** Use the structure of an expression to identify ways to rewrite it.	**To be assessed:** The students will be assessed on mathematical accuracy, the students' conceptual understanding and their ability to communicate mathematically. **Collection of evidence:** • 20-point quizzes-Homework quizzes will be given one per week to assess understanding of • homework. • 100-point test-A test will be given at the end of the unit. • Notebook-A notebook will be kept that includes journal entries, lesson notes, examples, student work, and corrections. **Types of assessment:** • Selected response • Academic prompt • Questions and Answer • Constructed response • Observation • Journal Entries • Work Sample **Assessment Values:** 15% Quizzes 50% Tests 20% Classwork and Homework 15% Project Criteria by which the student responses will be evaluated: • Homework will be graded in class each day by stating answers out loud, placing work on the board, or peer reviewing in cooperative learning groups • Homework quizzes will be graded on mathematical reasoning, accuracy, and presentation of work. • Unit test will be graded on mathematical reasoning, accuracy, and presentation of work. • Notes and journal will be checked periodically for completion and accuracy.	• Identify the root index. • Use formulas involving radicals. • Convert expressions from radical form and rational exponents and vice versa. • Solve equations and inequalities containing radicals. • Add, subtract and multiply complex numbers. • Use radicals and complex numbers to solve quadratic equations.	**Performance Tasks:** Collected homework and class work Class Review Chapter Quiz Chapter Test **Other evidence:** Daily observations – class problems 5-minute checks Daily homework checks ACT Practice **Student Self-Assessment/Reflection:** Independent class problems, 5-minute checks Homework Final Exams and review sheets	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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March	**Enduring Understandings** • Composite functions and how they work. • Inverse and direct variations and the applications of them. • The implications of graphing rational functions, i.e. holes and asymptotes. • Add, subtract, multiply and divide rational expressions. • Manipulate (use the operations listed above) rational expressions to solve equations. **Essential Questions :** • What is a composite function? • What do the restrictions of a rational function mean? How do they affect the solution? • What real world situations involve inverse or direct variations?	**A.APR.7** Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions. **A.CED.2** Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. **F.BF.3** Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), andf(x + k) for specific values of k (both positive and negative); find the value ofk given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. **A.CED.2** Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. **F.IF.9** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). **A.CED.1** Create equations and inequalities in one variable and use them to solve problems. **A.REI.2** Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	**To be assessed:** The students will be assessed on mathematical accuracy, the students' conceptual understanding and their ability to communicate mathematically. **Collection of evidence:** • 20-point quizzes-Homework quizzes will be given one per week to assess understanding of • homework. • 100-point test-A test will be given at the end of the unit. • Notebook-A notebook will be kept that includes journal entries, lesson notes, examples, student work, and corrections. **Types of assessment:** • Selected response • Academic prompt • Questions and Answer • Constructed response • Observation • Journal Entries • Work Sample **Assessment Values:** 15% Quizzes 50% Tests 20% Classwork and Homework 15% Project Criteria by which the student responses will be evaluated: • Homework will be graded in class each day by stating answers out loud, placing work on the board, or peer reviewing in cooperative learning groups • Homework quizzes will be graded on mathematical reasoning, accuracy, and presentation of work. • Unit test will be graded on mathematical reasoning, accuracy, and presentation of work. • Notes and journal will be checked periodically for completion and accuracy.	• Manipulate composite functions. • Explain the difference between a direct and inverse variation. • Provide examples of both direct and inverse variations. • Graph rational functions. • Solve rational equations.	**Performance Tasks:** Collected homework and class work Class Review Chapter Quiz Chapter Test **Other evidence:** Daily observations – class problems 5-minute checks Daily homework checks ACT Practice **Student Self-Assessment/Reflection:** Independent class problems, 5-minute checks Homework Final Exams and review sheets	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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April	**Enduring Understandings :** • An exponential equation is an equation with a variable in the exponent. • Properties of logarithms help us identify expressions and solve exponential equations. • Simplifying an expression is different that solving an equation. **Essential Questions**: • How do properties of logarithms help us simplify expressions and solve exponential equations? • Why do we need logarithms? • How do logarithms make calculations easier?	**F.IF.8.b** Use the properties of exponents to interpret expressions for exponential functions. **A.CED.1** Create equations and inequalities in one variable and use them to solve problems. **F.LE.4** For exponential models, express as a logarithm the solution to abct = d wherea, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology. **F.IF.7.e** Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. **F.BF.3** Identify the effect on the graph of replacing f(x) by f(x) + k, kf(x), f(kx), andf(x + k) for specific values of k (both positive and negative); find the value ofk given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. A.SSE.2 Use the structure of an expression to identify ways to rewrite it. A.CED.1 Create equations and inequalities in one variable and use them to solve problems. F.LE.4 For exponential models, express as a logarithm the solution to abct = d wherea, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.	**To be assessed:** The students will be assessed on mathematical accuracy, the students' conceptual understanding and their ability to communicate mathematically. **Collection of evidence:** • 20-point quizzes-Homework quizzes will be given one per week to assess understanding of • homework. • 100-point test-A test will be given at the end of the unit. • Notebook-A notebook will be kept that includes journal entries, lesson notes, examples, student work, and corrections. **Types of assessment:** • Selected response • Academic prompt • Questions and Answer • Constructed response • Observation • Journal Entries • Work Sample **Assessment Values:** 15% Quizzes 50% Tests 20% Classwork and Homework 15% Project Criteria by which the student responses will be evaluated: • Homework will be graded in class each day by stating answers out loud, placing work on the board, or peer reviewing in cooperative learning groups • Homework quizzes will be graded on mathematical reasoning, accuracy, and presentation of work. • Unit test will be graded on mathematical reasoning, accuracy, and presentation of work. • Notes and journal will be checked periodically for completion and accuracy.	• Apply the laws of logarithms in order to simplify expressions and solve equations • Simplify problems involving rational exponents • Change problems between log form and exponential form • Write exponential equations and graph them on a coordinate plane.	**Performance Tasks:** Collected homework and class work Class Review Chapter Quiz Chapter Test **Other evidence:** Daily observations – class problems 5-minute checks Daily homework checks ACT Practice **Student Self-Assessment/Reflection:** Independent class problems, 5-minute checks Homework Final Exams and review sheets	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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May	**Essential Questions:** What types of real-world problems can be modeled and solved using trigonometry?	**F.TF.1** Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle. **F.TF.2** Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle. **F.TF.5** Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline. **F.IF.7.e** Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. **F.BF.3** Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), andf(x + k) for specific values of k (both positive and negative); find the value ofk given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. A.CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	**To be assessed:** The students will be assessed on mathematical accuracy, the students' conceptual understanding and their ability to communicate mathematically. **Collection of evidence:** • 20-point quizzes-Homework quizzes will be given one per week to assess understanding of • homework. • 100-point test-A test will be given at the end of the unit. • Notebook-A notebook will be kept that includes journal entries, lesson notes, examples, student work, and corrections. **Types of assessment:** • Selected response • Academic prompt • Questions and Answer • Constructed response • Observation • Journal Entries • Work Sample **Assessment Values:** 15% Quizzes 50% Tests 20% Classwork and Homework 15% Project Criteria by which the student responses will be evaluated: • Homework will be graded in class each day by stating answers out loud, placing work on the board, or peer reviewing in cooperative learning groups • Homework quizzes will be graded on mathematical reasoning, accuracy, and presentation of work. • Unit test will be graded on mathematical reasoning, accuracy, and presentation of work. • Notes and journal will be checked periodically for completion and accuracy.	• explore trigonometric functions, first in acute angles in standard form, and also for points on the unit circle • derive and use the Law of Sines and the Law of Cosines as applications of trigonometric functions • develop inverses for the sine, cosine, and tangent functions • use trigonometric functions to explore amplitude and period • investigate phase shifts and vertical shifts in the graphs of trigonometric functions	Performance Tasks: Collected homework and class work Class Review Chapter Quiz Chapter Test Other evidence: Daily observations – class problems 5-minute checks Daily homework checks ACT Practice Student Self-Assessment/Reflection: Independent class problems, 5-minute checks Homework Final Exams and review sheets	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.