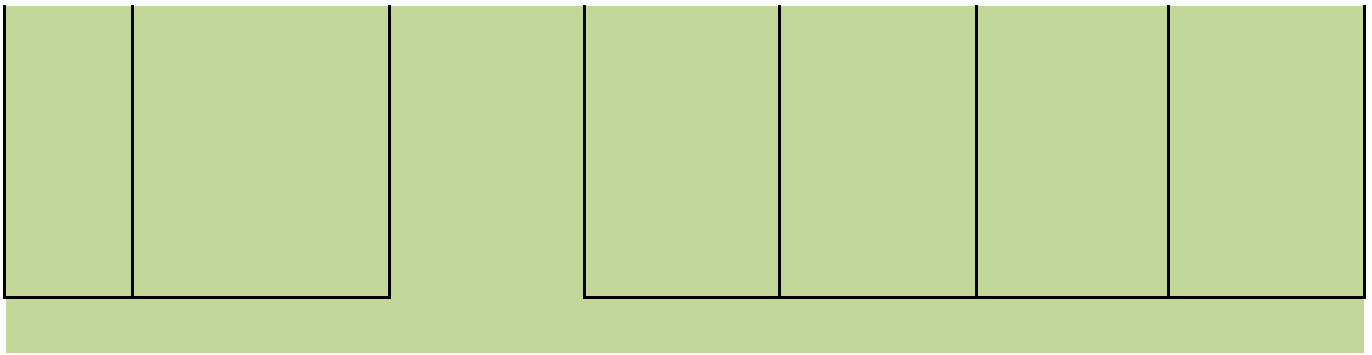# Algebra -1 (Curriculum -Map)

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** How mathematical ideas can be expressed with the help of numbers and variables? • How verbal expressions can be expressed in algebric expressiona. • 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? • How relation can be expressed tabular, graphical presentations.? • How can you determine that relation is a function or not? • How do you interpret positive, negitive, increasing, decreasing, maxima, and minimam and end behaviour of graph of a function. •	**A.SSE.1a** Interpret parts of an expression, such as terms, factors, and coefficients. **A.SSE.2** Use the structure of an expression to identify ways to rewrite it. **A.SSE.1b** 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.REI.3** Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. **A.REI.10** Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). **F.IF.1** Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$. **F.IF.2** Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. **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.	**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.	• 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.	**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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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October	**Essential Questions:** • How variables can be use to represent an unknown amount when writing equations from a verbal sentance? • How mathematical operations can be use to evaluate an expression? • How do we solve equations using addition or subtraction to find the unknown? • How do you use equation to solve real world problem? • How do you evaluate percents by using proportions? • What does that mean to solve an equation using mathematical operations? • How can you find percent of change ?+	A.CED.1 Create equations and inequalities in one variable and use them to solve problems. A.REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. A.REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	**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.	Evaluate and simplify algebric expressions. Translate equations into sentences Solve equations by using addition and subtraction Solve equations by using multiplication and divission. Solve equations involving more than one operation. Solve equations involving consecutive integers. Solve equations with the variable on each side of the equation. Solve equations involving grouping symbols. Evaluate absolute expressions.Solve absolute value equations. Evaluate percents by using a proportion. Compare ratios and solve proportions. Evaluate percent of change, solve problems involving percent of change. Solve proportions. Solve equations with variable on each side, and solve equations for given variables.Use formulas to solve real-world problems.	**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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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November	"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.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.7a** Graph linear and quadratic functions and show intercepts, maxima, and minima. **A.REI.10** Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). **F.IF.7a** Graph linear and quadratic functions and show intercepts, maxima, and minima. **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. **F.LE.1a** Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. **F.BF.2** Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. **F.LE.2** Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). **F.LE.1b** Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. **F.LE.2** Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	**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.	• Represent relationships among quantities using equations. • Identify linear equations, intercepts, and zeros.Graph Linear equations and solve linear equations by graphing. • Solve equations by graphing. Estimate solutions to an equations by graphing. • Graph ordered pairs in the coordinate plane. Use rate of change to solve problems. Find the slope of the line. • Write graph and solve direct variation equations. • Find rates of change of linear function. • Write and graph direct variation equations.Solve problem involving direct variation. • Identify linear functions.Recognize arithmatic sequence.Relate arithmetic sequence to linear functions. • 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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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December	**Essential Questions:** • What does slope mean when a graph represents real world data? • What does slope means in connection to direct variation? • Once an equation is written in y=mx+b form, how can you identify the slope? • How can you use slope and a point on the line to write the equation of a line? • What if you only have two points on a line, how can you determine the slope to write the equation of the line? • What can a line be used to describe a trend in a set of data? • Is there a special relationship between the slopes of lines and whether they are parallel or perpendicular?	F.IF.2Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. S.ID.6aFit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. S.ID.6cFit a linear function for a scatter plot that suggests a linear association. S.ID.6Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. b. Informally assess the fit of a function by plotting and analyzing residuals. c. Fit a linear function for a scatter plot that suggests a linear association. S.ID.8Compute (using technology) and interpret the correlation coefficient of a linear fit. 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.4aSolve 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.2Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. S.ID.6aFit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. S.ID.6cFit a linear function for a scatter plot that suggests a linear association. S.ID.6Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. b. Informally assess the fit of a function by plotting and analyzing residuals. c. Fit a linear function for a scatter plot that suggests a linear	**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.	.Write and graph linear equations in slope-intercept form. Model real-world data with equations in slope-intercept form. Write equations of lines in point-slope form. Write linear equations in different forms. Write an equation of the line that passes through a given point, parallel to a given line. Write an equation of the line that passes through a given point, perpendicular to a given line. Investigate relationships between quantities by using points on scatter plots. Use lines of fit to make and evaluate predictions Write equations of best-fit lines using linear regression. Write equations of median-fit lines. Find the inverse of a relation. Find the inverse of a linear 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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

association.

S.ID.8Compute (using technology) and interpret the correlation coefficient of a linear fit.

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.4aSolve 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.2Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

S.ID.6aFit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.

S.ID.6cFit a linear function for a scatter plot that suggests a linear association.

S.ID.6Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.

a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.

b. Informally assess the fit of a function by plotting and analyzing residuals.

c. Fit a linear function for a scatter plot that suggests a linear association.

S.ID.8Compute (using

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January	**Essential Questions:** • How is using addition and subtraction to solve an inequality similar to solving equations using addition and subtraction? • How is using multiplication and division to solve an inequality different from solving equations using multiplication and division? • What is the solution set when the inequality results in a false statement? • How does the graph of a compound inequality containing and differ from one containing or ? • How do absolute values equations/inequalities relate to compound sentences/ inequalities? • What does the dash line, open circle, and shading mean when solving real world inequality? • Where on a graph would you find the solution to a system of inequalities?	A.CED.1 Create equations and inequalities in one variable and use them to solve problems. A.REI.3 Solve linear equations and inequalities in one variable,including equations with coefficients represented by letters. A.CED.3Represent 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. A.REI.12 Graph the solutions to a linear inequality in two variables as a halfplane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	**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.	Solve linear inequalities by using addition. Solve linear inequalities by using subtraction. Solve linear inequalities by using multiplication. Solve linear inequalities byusing division. Solve linear inequalities involving more than one operation. Solve linear inequalities involving the Distributive Property. Solve compound inequalities containing the word and, and graph their solution set. Solve compound inequalities containing the word or, and graph their solution set. Solve and graph absolute value inequalities (<). Solve and graph absolute value inequalities (>). Solve and graph absolute value inequalities (<). Solve and graph absolute value inequalities (>). Solve linear inequalities by using addition. Solve linear inequalities by using subtraction. Solve linear inequalities by using multiplication. Solve linear inequalities byusing division. Solve linear inequalities involving more than one operation. Solve linear inequalities involving the Distributive Property. Solve compound inequalities containing the word and, and graph their solution set. Solve compound inequalities containing the word or, and graph their solution set. Solve and graph absolute value inequalities (<). Solve and graph absolute value inequalities (>). Solve and graph absolute value inequalities (<). Solve and graph 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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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February	**Enduring Understandings:** • Solving Inequalities by addition, subtraction, multiplication and division. • Solving Multi-step Inequalities • Solving compound inequalities • Solving inequalities involving absolute values • Graphing inequalities in two variables • Graphing system of inequalities. **Essential Questions :** • How many solutions can a system of linear equations have? • How can a system of equations be solved using substitution? • When should a system of equations be solved by elimination using addition or subtraction? • What if addition or subtraction of the equations won't eliminate a variable, how can you use multiplication to solve real world problem? • What method is best to use? How can this method be used to solve real world problem?	**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.** **A.REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.** **A.CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.** **A.REI.5 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.** **A.REI.12 Graph the solutions to a linear inequality in two variables as a halfplane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-**	**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.	Determine the number of solutions a system of linear equations has. Solve systems of linear equations by graphing. Solve systems of equations by using substitution. Solve real-world problems involving systems of equations by using substitution. Solve systems of equations by using elimination with addition. Solve systems of equations by using elimination with subtraction. Solve systems of equations by using elimination with multiplication. Solve real-world problems involving systems of equations. Determine the best method for solving systems of equations. Apply systems of equations. Solve systems of linear inequalities by graphing. Apply systems of linear 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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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March	**Enduring Understandings** • Multiplying Monomials • Dividing Monomials • Polynomials • Adding, subtracting, multiplying and dividing monomials • Multiplying polynomials **Essential Questions :** • How can you divide monomials and simplify expressions containing negative exponents? • What is a Polynomial? How do ypou find the degree of a polynomial? • What method can be used to add and subtract polynomials? • What property is used when polynomial is multiplied by a monomial? • How do you use FOIL method to multiply two polynomials (binomials)? • Which binomial products have patterns that make their multiplication simpler?	**A.SSE.2 Use the structure of an expression to identify ways to rewrite it.** **F.IF.8b Use the properties of exponents to interpret expressions for exponential functions** **N.RN.1 Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.** **N.RN.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents.** **F.IF.7e Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.** **F.LE.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).** **F.IF.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.** **F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to**	**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.	Multiply monomials using the properties of Simplify expressions using the multiplication properties of exponents. Divide monomials using the properties of Simplify expressions containing negative and zero exponents. Evaluate and rewrite expressions involving rational exponents. Solve equations involving expressions with rational exponents. Express numbers in scientific notation. Find products and quotients of numbers expressed in scientific Graph exponential Identify data that display exponential behavior. Solve problems involving exponential growth. Solve problems involving exponential decay. Identify and generate geometric sequences. Relate geometric sequences to exponential Use a recursive formula to list terms in a sequence. Write recursive formulas for arithmetic and geometric sequences.	**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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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April	• What is monomial? How you can multiply monomial and simplify expressions involving powers of monomials? • How can you divide monomials and simplify expressions containing negative exponents? • What is a polynomial? How do you find the degree of the polynomials? • What methods can be used to add and subtract polynomials? • What property is used when a polynomial is multiplied by a monomial? • How do you use FOIL method to multiply two polynomials? • Which binomial products have patterns that make their multiplication simpler?	A.SSE.1a Interpret parts of an expression, such as terms, factors, and coefficients. 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. A.APR.1:Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and	**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.	Write polynomials in standard form. Add and subtract polynomials. Multiply a polynomial by a monomial. Solve equations involving the products of monomials and polynomials. Multiply binomials by using the FOIL method. Multiply polynomials by using the Distributive Property. Find squares of sums and differences. Find the product of a sum and a difference. Use the Distributive Property to factor polynomials. Solve equations of the form $ax^2 + bx = 0$. Factor trinomials of the form $ax^2 + bx + c$. Solve equations of the form $ax^2 + bx + c = 0$. Factor binomials that are the difference of squares. Use the difference of squares to solve equations. Factor perfect square trinomials. Solve equations involving perfect squares.	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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.	

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April	**Essential Questions** • How do you find GCF of set of polynomials? • What is zero Product property and how is it used to solve equations? • How do you factor a Quadratic expressions of the form $x^2 + bx + c$? • How do you factor quadratic expression of the form $ax^2 + bx + c$ where is not equal to zero? • How can the difference of two squares be factored? • What pattern is used to determine whether an expression is perfect square trinomial? • What is parabola? • How many roots does a quadratic equation have and how do you find them? • How do you complete the square for the quadratic expression of the form $x^2 + bx$? • According to the Quadratic Formula, what are the solutions of a equation in the form of $ax^2 + bx + c = 0$? • How can you determine whether a set of data displays exponential behavior? • What is the difference between exponential growth and exponential decay?	A.REI.4b:Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a $\pm$ bi for real numbers a and b. F.BF.3 . Identify the effect on the graph of replacing f(x) by f(x) + k, kf(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases	**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.	Solve quadratic equations by graphing. Estimate solutions of quadratic equations by graphing. Apply translations to quadratic functions. Apply dilations and reflections to quadratic functions. Complete the square to write perfect square trinomials. Solve quadratic equations by completing the square. Solve quadratic equations by using the Quadratic Formula. Use the discriminant to determine the number of solutions of a quadratic equation. Identify linear, quadratic, and exponential functions from given data. Write equations that model data. Identify and graph step functions. Identify and graph absolute value and piecewise-defined 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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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
April	• How do you know that the expression is radical expression? • What must be true of radicands before you can add or subtract radical exprssions? • What is the first step in solving radical equations? • How does knowing how to simplify radical expressions help you find the length of the sides of triangles? • How can wright triangles help you find the distance between two points on a coordinate plane? • What do you know about the sides of similar triangles?	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.7b: Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. A.REI.4a: Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)2 = q$ that has the same solutions. Derive the quadratic	**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% Test	Graph and analyze reflections and translations of radical functions. Simplify radical expressions by using the Product Property of Square Roots. Simplify radical expressions by using the Quotient Property of Square Roots. Add and subtract radical expressions. Multiply radical expressions. Solve problems by using the Pythagorean Theorem. Determine whether a triangle is a right triangle. Find trigonometric ratios of angles. Use trigonometry to solve triangles.	**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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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May	• What is the difference between direct and inverse variation? • When might a rational expressions have excluded values? • Once you have multiplied rational expressions, how do you simplify the product? • How is dividing rational expressions connected to multiply rational expressions? • How is dividing polynomials similar to long division process used in arithmetic? • How is adding and subtracting rational expressions with like denominators similar to adding and subtracting rational numbers? • How can you find the least common denominator of two rational expressions? • How do you simplify an algebraic complex fraction? • When can you use cross products to solve rational equations?	**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	Identify and use inverse variations. Graph inverse variations. Identify excluded values. Identify and use asymptotes to graph rational functions. Identify values excluded from the domain of a rational expression. Simplify rational expressions. Multiply rational expressions. Divide rational expressions. Divide a polynomial by a monomial. Divide a polynomial by a binomial. Simplify mixed expressions. Simplify complex fractions. Solve rational equations. Use rational equations to solve problems.	**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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.

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May	• What is the difference between direct and inverse variation? • When might a rational expressions have excluded values? • Once you have multiplied rational expressions, how do you simplify the product? • How is dividing rational expressions connected to multiply rational expressions? • How is dividing polynomials similar to long division process used in arithmetic? • How is adding and subtracting rational expressions with like denominators similar to adding and subtracting rational numbers? • How can you find the least common denominator of two rational expressions? • How do you simplify an algebraic complex fraction? • When can you use cross products to solve rational equations?	**S.ID.2** Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. **S.ID.3** Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	**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	.• Classify and analyze samples. • Classify and analyze studies. • Identify sample statistics and population parameters. • Analyze data sets using statistics. • Describe the shape of a distribution. • Use the shapes of distributions to select appropriate statistics. • Determine the effect that transformations of data have on measures of central tendency and variation. • Compare data using measures of central tendency and variation. • Use permutations. • Use combinations. • Find probabilities of independent and dependent events. • Find probabilities of mutually exclusive events. • Find probabilities by using random variables. • Find the expected value of a probability distribution. • Calculate experimental probabilities. • Design simulations and summarize data from simulations. .	**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 1 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation.