

HS Math Curriculum Maps -

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HS Math - Resources

Teacher Feedback Form

Algebra 1

Timeline	Themes/Enduring Understandings/Essential Questions for the Unit	Common Core State Standards Addressed	Assessments	Standards Based Skills and Concepts Targeted	Strategies/Practices Used to Teach Skills and Concepts	Resources/Texts Used
1st Quarter - Unit 1	Essential Questions How mathematical ideas can be expressed with the help of numbers and variables? - How verbal expressions can be expressed in algebraic expressions. - Why is the order of operations important and necessary? - How can properties be used to simplify 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?	A.SSE.1a A.SSE.2 A.SSE.1b A.REI.10 A.REI.3 F.IF.1 F.IF.2 F.IF.4	Formative Assessments: Homework/classwork checks Daily observations and class problems 5-minute checks Chapter quizzes Notebook/journal checks ACT practice Student self-assessment/reflection Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	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.
1st Quarter - Unit 2	Essential Questions: - How variables can be used to represent an unknown amount when writing equations from a verbal sentence? - How mathematical operations can be used 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.REI.1 A.CED.1 A.REI.3	Formative Assessments: Homework/classwork checks Daily observations and class problems 5-minute checks Chapter quizzes Notebook/journal checks ACT practice Student self-assessment/reflection Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Evaluate and simplify algebraic expressions. Translate equations into sentences Solve equations by using addition and subtraction Solve equations by using multiplication and division. 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 - 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 arithmetic 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.
2nd Quarter - Unit 3	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	F.IF.4 F.IF.7a A.REI.10 F.IF.6 F.IE.1a F.BF.2 F.IE.2 F.IE.1b	Formative Assessments: Homework/classwork checks Daily observations and class problems 5-minute checks Chapter quizzes Notebook/journal checks ACT practice Student self-assessment/reflection Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	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 arithmetic 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.

2nd Quarter - Unit 4	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.2 S.ID.6 S.ID.6a S.ID.6c S.ID.8 A.CED.2 F.BF.4a	Formative Assessments: Homework/classwork checks Daily observations and class problems 5-minute checks Chapter quizzes Notebook/journal checks ACT practice Student self-assessment/reflection Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	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.
3rd Quarter - Unit 5	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 A.CED.3 A.REI.12	Formative Assessments: Homework/classwork checks Daily observations and class problems 5-minute checks Chapter quizzes Notebook/journal checks ACT practice Student self-assessment/reflection Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Solve linear inequalities using addition, subtraction, multiplication, and division Solve multi-step linear inequalities Solve linear inequalities involving the Distributive Property Solve compound inequalities containing "and" and graph their solution sets Solve compound inequalities containing "or" and graph their solution sets Solve and graph absolute value inequalities Interpret inequality symbols, open/closed circles, dashed boundary lines, and shading when graphing inequalities Apply inequalities and systems of inequalities to 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.
3rd Quarter - Unit 6	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	A.CED.2 A.CED.3 A.REI.5 A.REI.6 A.REI.12	Formative Assessments: Homework/classwork checks Daily observations and class problems 5-minute checks Chapter quizzes Notebook/journal checks ACT practice Student self-assessment/reflection Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	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.

3rd Quarter - Unit 7	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 you 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 F.IF.3 F.IF.7e F.IF.8b F.LE.2 F.BF.2 N.RN.1 N.RN.2	Formative Assessments: Homework/classwork checks Daily observations and class problems 5-minute checks Chapter quizzes Notebook/journal checks ACT practice Student self-assessment/reflection Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Multiply monomials using the properties of exponents Simplify expressions using the multiplication properties of exponents Divide monomials using the properties of exponents 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 notation Graph exponential functions 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 functions 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.
4th Quarter - Unit 8	Essential Questions: How can polynomials be written, classified, combined, multiplied, and factored? How can the zero product property be used to solve equations? How can quadratic equations be solved by graphing, factoring, completing the square, and using the quadratic formula? How can the graph of a quadratic function be transformed? How can radical expressions be simplified, combined, multiplied, and used in equations? How can right triangles be used to solve problems involving distance, side lengths, and trigonometric ratios?	A.SSE.1a A.APR.1 A.REI.4a A.REI.4b F.IF.4 F.IF.7b	Formative Assessments: Homework/classwork checks Daily observations and class problems 5-minute checks Chapter quizzes Notebook/journal checks ACT practice Student self-assessment/reflection Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Write, add, subtract, and multiply polynomials Multiply monomials, binomials, and polynomials using exponent properties, FOIL, and the Distributive Property Factor polynomials using GCF, trinomial patterns, difference of squares, and perfect square trinomials Solve quadratic equations by graphing, factoring, completing the square, and using the quadratic formula Use the zero product property to solve equations Analyze quadratic functions, including roots, transformations, and number of solutions Identify linear, quadratic, and exponential functions from data Write equations to model data Identify and graph step functions, absolute value functions, piecewise-defined functions, and radical functions Simplify, add, subtract, and multiply radical expressions Solve radical equations Use the Pythagorean Theorem, distance formula, and right triangle relationships to solve problems Find and apply trigonometric ratios	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.
4th Quarter - Unit 9	Essential Questions: What is the difference between direct and inverse variation? When does a rational expression have excluded values? How can rational expressions be simplified, multiplied, divided, added, and subtracted? How is dividing rational expressions connected to multiplying rational expressions? How is dividing polynomials similar to long division in arithmetic? How can the least common denominator of rational expressions be found? How can complex fractions and rational equations be simplified and solved? How can statistics be used to compare center, spread, shape, and outliers in data sets? How can probability be used to make predictions and analyze events?	A.CED.2 S.ID.2 S.ID.3	Formative Assessments: Homework/classwork checks Daily observations and class problems 5-minute checks Chapter quizzes Notebook/journal checks ACT practice Student self-assessment/reflection Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Identify, use, and graph direct and inverse variation Identify excluded values and asymptotes in rational expressions and functions Simplify, multiply, divide, add, and subtract rational expressions Divide polynomials by monomials and binomials Simplify mixed expressions and complex fractions Solve rational equations, including equations solved with cross products Use rational equations to solve problems Classify and analyze samples and studies Identify sample statistics and population parameters Analyze and compare data sets using center, spread, shape, outliers, and variation Determine how transformations of data affect measures of center and variation Use permutations and combinations Find probabilities of independent, dependent, and mutually exclusive events Find probabilities using random variables and expected value Calculate experimental probabilities Design simulations and summarize simulation data	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.

Algebra 2

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
1st Quarter - Unit 1	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 simplify 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	A.SSE.1a A.SSE.1b A.SSE.2 A.CED.1 A.CED.3	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	• 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	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
1st Quarter - Unit 2	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 F.IF.4 F.IF.5 F.IF.6 A.SSE.1b A.CED.2 F.IF.7b F.BF.3 A.CED.3	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	• 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 $y = a(x-h)^2 + k$	Performance Tasks: Collected homework	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
2nd Quarter - Unit 3	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	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, 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	Performance Tasks: Collected homework	• Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation

2nd Quarter - Unit 4	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.1a A.SSE.1b A.SSE.2 A.CED.1 A.CED.2 A.CED.3 F.IF.4 F.IF.8a F.IF.9 N.CN.1 N.CN.2 N.CN.7	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	• 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 $y = ax^2 + bx + c$. • Graph a quadratic function of the form $y = a(x - h)^2 + k$. • 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 $y = ax^2 + bx + c$. • 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 $x^2 + bx + c$. • Factor a perfect square trinomial. • Factor the difference of two squares.	Performance Tasks: Collected homework • Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
3rd Quarter - Unit 5	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 A.APR.2 A.APR.3 A.APR.6 F.IF.4 F.IF.7c N.CN.9	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	• 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 • Identify the root index.	Performance Tasks: Collected homework • Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
3rd Quarter - Unit 6	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	A.SSE.2 F.BF.1b F.BF.3 F.BF.4a F.IF.4 F.IF.7b F.IF.9	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	• 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 • Algebra 2 Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation

3rd Quarter - Unit 7	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?	A.APR.7 A.CED.1 A.CED.2 A.REI.2 A.REI.11 F.BF.3 F.IF.9	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	- 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 - Algebra 2 Text Book - Quality Core Resources - ACT Practice - Standardized Test Preparation
4th Quarter - Unit 8	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 than 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?	A.CED.1 A.SSE.2 F.BF.3 F.IF.7e F.IF.8b F.IE.4	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	- 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 - Algebra 2 Text Book - Quality Core Resources - ACT Practice - Standardized Test Preparation
4th Quarter - Unit 9	Essential Questions: What types of real-world problems can be modeled and solved using trigonometry?	A.CED.2 F.BF.3 F.IF.7e F.TF.1 F.TF.2 F.TF.5	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	- 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 - Algebra 2 Text Book - Quality Core Resources - ACT Practice - Standardized Test Preparation

Geometry

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
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1st Quarter - Unit 1	Essential Questions: • What are the building blocks of Geometry? • How can you describe the attributes of the geometric terms? • How can you describe angle pairs and their relationships? Enduring Understanding: • Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. • Spatial reasoning and visualization are ways to orient thinking about the physical world. • Mathematical statements can be justified through deductive and inductive reasoning. • Relations and functions are mathematical relationships that can be represented and analyzed using words and equations.	G.CO.1 G.CO.12 G.SRT.7 G.GPE.7 G.GMD.3	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	• Identify the vocabulary in geometric figures • Properly name the vocabulary using the correct symbolization • Set up and solve algebraic equations using this vocabulary	Performance Tasks: Collected homework Geometry Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
1st Quarter - Unit 2	Enduring Understanding: • Mathematical statements can be justified through deductive and inductive reasoning and proof. • Patterns exhibit relationships that can be extended, described and generalized. • Relations and functions are mathematical relationships that can be represented and analyzed using words and equations. Essential Questions: • What are the similarities and differences between inductive and deductive reasoning? • What are the building blocks of formal proof? • When is it appropriate to use each type of proof? • Why do we use formal proof?	G.MG.3 G.CO.9 G.CO.12	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	• Identify a hypothesis and conclusion, write conditional, converses, and bi-conditional statements • Use properties of equality, vocabulary, and theorems to justify steps. • Set up algebraic equations from theorems and postulates, to solve geometric problems.	Performance Tasks: Collected homework Geometry Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
2nd Quarter - Unit 3	Essential Questions: • What are the relationships of the angles formed by two lines and a transversal? • Does transitivity of parallel lines exist? • Does transitivity of perpendicular lines? • How can you prove the sum of the angles of a triangle is 180°? • What parts of triangle are used to classify them? • How are polygons classified? • What formulas do you use to find the sum of the interior and exterior angles of a regular polygon? • What are the three forms in which an equation can be written? • How can you write the equation of a line given two points? Enduring Understanding: • Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. • Some geometric relationships can be described and explored as functional relationships • There are some mathematical relationships that are always true and	G.CO.1 G.CO.9 G.GPE.5 G.CO.12 G.MG.3	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	• Identify angles from a diagram • draw conclusions about the measurements of the above angles if the lines are parallel. • Beginning proofs using above theorems. • Algebraic problems using the converse of the above theorems. • Proofs using the converse of the above theorems. • Classify a triangle based on its side and angle measure • Find the remote interior or exterior angle of a triangle • Find the sum of the interior angles of a triangle • Apply the polygon exterior and interior angle-sum theorems • Find the interior or exterior angle of a regular polygon • Identify an equation in the slope-intercept form, point slope form or standard form and be able to graph from these forms • Determine whether lines are parallel, perpendicular or neither based on their slopes. • Write equations of parallel and perpendicular lines.	Performance Tasks: Collected homework Geometry Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation

2nd Quarter - Unit 4	Enduring Understanding - Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. - Some geometric relationships can be described and explored as functional relationships - There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities. - Mathematical statements can be justified through deductive and inductive reasoning and proof. - Congruence describes a special similarity relationship between objects and is a form of equivalence. - Relations and functions are mathematical relationships that can be represented and analyzed using words and equations. - Objects can be transformed in a number of ways. Transformations can be described and analyzed mathematically.	G.CO.12 G.CO.7 G.SRT.5 G.CO.10 G.CO.6 G.GPE.4	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	- Name congruent parts - Find congruent triangles - Proving triangles congruent - Use SSS, SAS, ASA, AAS, HL to prove triangles congruent. - Use the Isosceles triangle theorems - Do proofs using HL theorem - Do proofs using CPCTC	Performance Tasks: Collected homework Geometry Text Book - Quality Core Resources - ACT Practice - Standardized Test Preparation
3rd Quarter - Unit 5	Essential Questions: - What is the relationship between a midsegment of a triangle and the third side? - How do you use properties of perpendicular bisector and angle bisector to solve problems? - What is the distance from a point to a line? - What is the median, and altitude of a triangle? - How do you use coordinate Geometry to find relationships within triangles? - What is the relationship between the three sides of a triangle? Big Ideas: - Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. - Some geometric relationships can be described and explored as functional relationships - There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	G.CO.12 G.CO.10 G.MG.3	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	- Find lengths of sides of a triangle using midsegment - Identify parallel segments using midsegment - Use the angle bisector theorem - Finding lengths of medians - Identifying medians and altitudes - Applying the corollary to the triangle exterior angle theorem - Using the triangle inequality theorem - Find possible side lengths	Performance Tasks: Collected homework Geometry Text Book - Quality Core Resources - ACT Practice - Standardized Test Preparation
3rd Quarter - Unit 6	Essential Questions: - How do you know that a figure is a specific special quadrilateral? - How do you classify quadrilaterals? - How can you use Coordinate Geometry to prove a special quadrilateral? - What are the applications of the distance, midpoint and slope formulas in relationship to coordinate Geometry? - How can you use the properties of the special quadrilaterals to solve for side Big Ideas: - Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. - Some geometric relationships can be described and explored as functional relationships - There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	G.MG.1 G.CO.11 G.GPE.4 G.MG.3	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	- Define and classify special types of quadrilaterals - Use relationships among sides and among angles of parallelograms - Use relationships involving diagonals or transversals - Determine whether a quadrilateral is a parallelogram - Use properties of diagonals of rhombuses and rectangles - Determine whether a parallelogram is a rhombus or rectangle - Verify and use properties of trapezoids and kites - Name special figures using coordinate Geometry	Performance Tasks: Collected homework Geometry Text Book - Quality Core Resources - ACT Practice - Standardized Test Preparation

3rd Quarter - Unit 7	Essential Questions: - How do you use similar proportions to find the side lengths in similar triangles? - What conditions must be true in order to prove two triangles similar? - How do you identify corresponding parts of similar triangles? - How do you use similar proportions to find the side lengths in similar quadrilaterals? - What conditions must be true for two quadrilaterals to be similar? - How do you use similar proportions to find the side lengths in similar polygons? - What conditions must be true for two polygons to be similar? - How do you find the height of a far away object? Big Ideas: - Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. - Some geometric relationships can be described and explored as functional relationships - There are some mathematical relationships that are always true and	G.MG.3 G.SRT.2 G.SRT.4 G.SRT.5	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	- Find the ratio between height and width. - Use the cross – product property to solve for variables. - Identify and determine whether figures are similar. - Find side lengths of similar figures. - Be able to use the AA-, SAS-, and SSS~ postulates and theorems to determine similarity. - Use proportional relationships to solve for missing side lengths in similar figures. - Use the side splitter theorem along with the triangle angle bisector theorem to prove similarity or find missing lengths in similar figures	Performance Tasks: Collected homework Geometry Text Book - Quality Core Resources - ACT Practice - Standardized Test Preparation
4th Quarter - Unit 8	Essential Questions: - What are special right triangles? - How do you find the height of a far away object? - How do you find the side length or angle measure in a right triangle? - What theorem is the foundation for all trigonometric functions? Big Ideas: - Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. - Some geometric relationships can be described and explored as functional relationships - There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities. - Mathematical statements can be justified through deductive and inductive reasoning and proof. - Congruence describes a special similarity relationship between objects and is a form of equivalence. - Relations and functions	G.SRT.4 G.SRT.5 G.SRT.8 G.MG.3 G.SRT.6 G.SRT.7 G.SRT.9 G.SRT.10	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	- Use the Pythagorean theorem to find side lengths of triangles - Put radical answers in simplest radical form - Determine the classification of triangles as acute, right or obtuse based on the side lengths. - Use sine, cosine and tangent to determine the side lengths of right triangles given an angle measure and a side length. - Use the inverse of sine, cosine and tangent to determine the angle measures of a right triangle given two side lengths. - Apply the trig ratios to word problems to determine angles of elevation and depression.	Performance Tasks: Collected homework Geometry Text Book - Quality Core Resources - ACT Practice - Standardized Test Preparation
4th Quarter - Unit 9	Essential Questions: - How do perimeters and areas of similar polygons compare? - How do you find the measure of a missing length given the perimeter, circumference or area? - How does a change in the value of one variable in area, perimeter and circumference formulas affect the value of the measurement? - How do you find the area of a regular polygon? - How do you find the probability that a randomly selected point will fall in the shaded area? Big Ideas: - Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. - Some geometric relationships can be described and explored as functional relationships - There are some mathematical relationships that are always true and these relationships are used as the rules of arithmetic and algebra and are useful for writing equivalent forms of expressions and solving equations and inequalities.	G.GPE.7 G.MG.3 G.C.5 G.GMD.1 G.MG.1	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	- Find the area of parallelogram, triangle, trapezoid, kite, rhombuses, regular polygons, circles. - Find the perimeter of similar figures. - Use coordinate geometry to find area and perimeter of figures. - Find the arc length and area of sectors in circles	Performance Tasks: Collected homework • Geometry Text Book - Quality Core Resources - ACT Practice - Standardized Test Preparation

Precalculus

Timeline	<u>Themes/Enduring Understandings/Essential Questions for the Unit</u>	<u>Common Core Standards Addressed</u>	Assessments	Standards Based Skills and Concepts Targeted	Strategies/Practices Used to Teach Skills and Concepts	Resources/Texts Used
1st Quarter - Unit 1	Algebra, Geometry, and Coordinate Foundations Students use algebraic, numeric, geometric, and coordinate tools as foundations for advanced mathematical reasoning. Number properties, roots, exponents, and undefined expressions help students interpret and manipulate mathematical relationships accurately. Coordinate and geometric formulas allow students to measure, represent, and analyze relationships between points, figures, and real-world quantities.	N 501 N 601 N 603 N 604 N 605 N 701 N 702 N 703 AF 402 A 401 A 509 A 510 A 513 G 403 G 404 G 405 G 505 G 506 G 507 G 508 G 511 G 602 G 605 G 704	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Apply number properties involving rational, irrational, real, positive, and negative numbers Order fractions and evaluate algebraic expressions Translate words into algebraic symbols Work with squares, square roots, cubes, cube roots, nth roots, and rational exponents Determine when expressions are undefined Apply geometric formulas for area, perimeter, circumference, and measurement problems Use right triangle relationships and the Pythagorean Theorem Use distance and midpoint formulas in the coordinate plane Analyze geometric and coordinate relationships	Performance Tasks: Collected homework	Precalculus Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
1st Quarter - Unit 2	Functions, Transformations, and Linear Models Functions describe relationships between quantities and can be represented, evaluated, combined, transformed, and interpreted in multiple ways. Graphs, equations, tables, and function notation provide different but connected views of the same mathematical relationship. Linear models and transformations help students analyze change, compare relationships, and connect algebraic rules to graphical behavior.	AF 403 AF 503 AF 603 AF 604 AF 703 AF 704 AF 705 AF 706 A 406 A 514 F 401 F 501 F 503 F 504 F 505 F 506 F 507 F 601 F 604 F 708 G 406 G 407 G 510 G 606 G 607	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Evaluate linear, quadratic, and polynomial functions Interpret function notation in context Understand domain and range from inputs, outputs, and graphs Analyze graphs and function properties Evaluate and write composite functions Identify one-to-one and inverse functions Distinguish between mathematical models and real-world situations Analyze parent functions, transformations, and piecewise-defined functions Translate and reflect points and graphs in the coordinate plane Interpret and write linear equations Determine slope from equations, points, and graphs Analyze parallel and perpendicular lines	Performance Tasks: Collected homework	Precalculus Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
2nd Quarter - Unit 3	Polynomial and Rational Functions Polynomial and rational functions can be analyzed through their algebraic structure, operations, graphs, and key features. Factoring, division, and the Remainder Theorem help students rewrite and interpret polynomial relationships. Rational functions require attention to domain, undefined values, asymptotes, and graphical behavior.	N 502 N 503 N 602 AF 603 AF 703 AF 704 AF 705 A 402 A 404 A 505 A 508 A 512 A 513 A 601 A 703 F 508 F 509 F 510 F 602 F 701 G 609	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Add, subtract, multiply, factor, and divide polynomial expressions Use positive integer exponents and numerical factors Apply synthetic division and the Remainder Theorem Analyze polynomial functions using graphs, domain, range, and key features Compare function models to actual values Use least common multiples with rational expressions Identify domains, undefined values, and vertical asymptotes of rational functions Analyze graphs of rational functions Build and interpret inverse variation functions Recognize key features of parabolas and other function graphs	Performance Tasks: Collected homework	Precalculus Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation

2nd Quarter - Unit 4	Equations, Inequalities, Systems, Matrices, and Conics	N 406 N 505 N 607 N 705 N 706 AF 603 AF 704 A 403 A 405 A 502 A 503 A 504 A 506 A 507 A 601 A 602 A 603 A 604 A 605 A 606 A 701 A 702 F 511 G 609	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks	Solve first-degree, quadratic, and absolute value equations Solve real-world problems using equations Solve and graph inequalities, compound inequalities, and absolute value inequalities Represent solutions using graphs and interval notation Solve systems of linear equations using substitution, elimination, and matrices Apply matrix operations, determinants, and properties of matrices Analyze systems of inequalities and linear programming situations Interpret coordinate-plane graphs and constraints Analyze circles, ellipses, hyperbolas, and systems of nonlinear equations Recognize key characteristics of conic sections	Performance Tasks: Collected homework Precalculus Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
	Equations, inequalities, systems, matrices, and graphs provide multiple ways to represent and solve mathematical relationships. Solution methods should be selected based on the structure of the problem and the type of relationship being modeled. Conic sections and nonlinear systems extend coordinate-plane reasoning beyond linear and quadratic relationships.		Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.		
3rd Quarter - Unit 5	Exponential and Logarithmic Functions	AF 501 AF 502 AF 601 AF 602 AF 603 AF 701 AF 702 AF 703 AF 704 A 501 F 602 F 707	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks	Solve multistep arithmetic and algebraic problems Build expressions, equations, inequalities, and functions from problem situations Solve problems involving rates, proportions, percentages, and rounded quantities Analyze algebraic and function properties Interpret exponential and logarithmic graphs Apply properties of logarithms Solve exponential and logarithmic equations Build exponential functions Model growth and decay situations Use inverse variation and exponential relationships in applied contexts	Performance Tasks: Collected homework Precalculus Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
	Exponential and logarithmic functions model relationships involving growth, decay, and inverse operations. Logarithms provide a way to interpret and solve exponential relationships. Students use functions, equations, graphs, and context to analyze change and build models for real-world and abstract situations.		Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.		
3rd Quarter - Unit 6	Trigonometric Functions and Applications	N 504 N 606 N 704 F 502 F 603 F 703 S 305 S 403 S 404 S 405 S 503 S 504 S 603 S 604 S 606	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks	Find terms in recursive sequences Write recursive expressions for sequences Analyze arithmetic and geometric sequences Apply knowledge of geometric sequences Use the Binomial Theorem Understand and operate with complex numbers Use complements, simple probability, and compound events Apply counting techniques, permutations, combinations, and Venn diagrams Compute probabilities when sample spaces are not obvious Recognize independence in probability contexts	Performance Tasks: Collected homework Precalculus Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
	Trigonometric relationships connect angle measure, right triangles, the unit circle, graphs, and periodic behavior. Trigonometric functions and identities provide tools for solving both abstract and applied problems. Students extend right triangle reasoning to broader trigonometric models, including non-right triangles and real-world measurement contexts.		Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.		
4th Quarter - Unit 7	Sequences, Series, Complex Numbers, and Probability	N 504 N 606 N 704 F 502 F 603 F 703 S 305 S 403 S 404 S 405 S 503 S 504 S 603 S 604 S 606	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks	Find terms in recursive sequences Write recursive expressions for sequences Analyze arithmetic and geometric sequences Apply knowledge of geometric sequences Use the Binomial Theorem Understand and operate with complex numbers Use complements, simple probability, and compound events Apply counting techniques, permutations, combinations, and Venn diagrams Compute probabilities when sample spaces are not obvious Recognize independence in probability contexts	Performance Tasks: Collected homework Precalculus Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
	Sequences and series describe patterns that can be represented recursively, algebraically, and graphically. Complex numbers extend the number system and allow students to operate within a broader mathematical framework. Counting and probability methods help students analyze uncertainty, sample spaces, and relationships between events.		Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.		

4th Quarter - Unit 8	Introductory Limits, Polar Coordinates, and Vectors Limits, polar coordinates, and vectors introduce students to mathematical representations commonly used in advanced mathematics. Tables and graphs can be used to describe limiting behavior and prepare students for calculus concepts. Vectors and polar coordinates offer alternate ways to represent direction, magnitude, location, and relationships.	N 607	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Find limits using tables and graphs Represent relationships using polar coordinates Use vectors to represent magnitude and direction Apply vector addition, subtraction, and scalar multiplication Connect vector operations to broader coordinate and modeling situations	Performance Tasks: Collected homework Precalculus Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
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Statistics/Intro to Statistics

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
1st Quarter - Unit 1	Exploring Data Students use graphs, tables, charts, and numerical summaries to organize, describe, and interpret data. Different representations of data reveal different patterns, relationships, and limitations. Measures of center, data displays, and context help students make sense of real-world information.	S 201 S 202 S 301 S 302 S 303 S 304 S 401 S 402 S 501 S 502 S 505 S 506 S 601 S 701	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Analyze categorical data Display quantitative data with graphs Read and interpret basic tables and charts Extract relevant data from tables and charts Translate data from one representation to another Manipulate data from tables and charts Calculate and use averages, including weighted averages Find missing data values when an average is known Distinguish between mean, median, and mode Recognize rounding and precision in real-world data summaries Recognize that statistical model values may differ from actual values	Performance Tasks: Collected homework Statistics Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation	• Quality Core Resources • ACT Practice • Standardized Test Preparation
2nd Quarter - Unit 2	Modeling Distributions of Data Distributions help students understand how data values are spread, clustered, and positioned. Location within a distribution provides context for interpreting individual data values. Normal distributions provide a model for analyzing patterns and making comparisons within data.		Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Describe location in a distribution Analyze normal distributions Interpret position within a data set Use distribution shape to understand data patterns Connect data displays and numerical summaries to distribution behavior	Performance Tasks: Collected homework Statistics Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation	• Quality Core Resources • ACT Practice • Standardized Test Preparation
3rd Quarter - Unit 3	Describing Relationships Relationships between variables can be described using scatterplots, correlation, and regression models. Statistical models help students make predictions, but model values may differ from actual data values. Residuals and patterns in data help students evaluate the strength and usefulness of a model.	S 705	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Analyze scatterplots Describe correlation Use least-squares regression Recognize patterns in residuals Compare actual values to model values Use statistical models to describe relationships between variables	Performance Tasks: Collected homework Statistics Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation	• Quality Core Resources • ACT Practice • Standardized Test Preparation

3rd Quarter - Unit 4	Designing Studies The design of a study affects the quality, reliability, and usefulness of the conclusions drawn from data. Randomization plays an important role in surveys, experiments, and observational studies. Students evaluate studies by considering how data were collected and what conclusions are supported.	S 703	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Analyze samples and surveys Analyze experiments Use studies wisely Understand the role of randomization in surveys, experiments, and observational studies Evaluate how study design affects conclusions Distinguish between different types of statistical studies	Performance Tasks: Collected homework Statistics Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation
4th Quarter - Unit 5	Probability Probability provides tools for analyzing chance, uncertainty, and patterns in random events. Counting techniques, simulations, tables, and diagrams help students represent and solve probability problems. Conditional probability, joint probability, and independence help students interpret relationships between events in real-world contexts.	S 305 S 403 S 404 S 405 S 503 S 504 S 602 S 603 S 604 S 605 S 606 S 702 S 704	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Find limits using tables and graphs Represent relationships using polar coordinates Use vectors to represent magnitude and direction Apply vector addition, subtraction, and scalar multiplication Connect vector operations to broader coordinate and modeling situations	Performance Tasks: Collected homework Statistics Text Book • Quality Core Resources • ACT Practice • Standardized Test Preparation

Personal Financial Literacy

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
1st Quarter - Unit 1	Financial Mindset, Consumer Awareness, and Decision-Making Personal values, habits, outside influences, and cognitive biases shape financial decision-making. Consumers make stronger financial choices when they understand their rights, responsibilities, protections, and risks. Advertising, promotions, and scams can influence spending decisions, so financial plans should be evaluated with awareness and skepticism.	FM2.a.h FM1.a.h FM2.c.h	Formative Assessments: Classwork and homework checks Scenario-based practice Budgeting practice tasks Financial decision-making reflections Vocabulary/concept checks Exit tickets Class discussion checks Quizzes Student self-assessment/reflection Summative Assessments: Unit tests or quizzes Budget/spending plan project Financial plan critique Consumer awareness or scam analysis task Credit/loan comparison task Tax form or paycheck analysis task Insurance comparison task Assessment Criteria: Students are assessed on financial reasoning, accuracy of calculations, application of personal finance concepts, decision-making, and communication of financial choices.	Assess how individual values and behaviors influence financial decisions and goals Summarize consumer rights, responsibilities, protections, and consumer vigilance Analyze how advertising techniques, promotions, packaging, and placement influence consumer spending Identify potential deception in advertising and consumer messaging Critique a financial plan and identify areas influenced by external sources Recognize cognitive bias in consumer spending and scams	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation	
2nd Quarter - Unit 2	Financial Institutions, Paychecks, Salaries, and Compensation Financial institutions, service providers, and regulations shape how individuals manage and access money. Paychecks, salaries, taxes, and deductions affect take-home pay and personal financial planning. Understanding compensation and government services helps students connect work, income, taxation, and public systems.	MM2.a.h EE1.a.h EE1.b.h EE1.a.e	Formative Assessments: Classwork and homework checks Scenario-based practice Budgeting practice tasks Financial decision-making reflections Vocabulary/concept checks Exit tickets Class discussion checks Quizzes Student self-assessment/reflection Summative Assessments: Unit tests or quizzes Budget/spending plan project Financial plan critique Consumer awareness or scam analysis task Credit/loan comparison task Tax form or paycheck analysis task Insurance comparison task Assessment Criteria: Students are assessed on financial reasoning, accuracy of calculations, application of personal finance concepts, decision-making, and communication of financial choices.	Compare financial institutions and service providers Analyze the reasons for financial regulations and the roles of financial regulators Evaluate a paycheck, including payroll taxes and other deductions Assess ways workers are compensated in different industries and sectors Analyze salaries and compensation structures Summarize goods and services that the government provides	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation	

3rd Quarter - Unit 3	Taxes and Tax Forms Taxes fund government goods, services, and public benefits. Tax liability, deductions, credits, and payroll taxes affect individual income and financial planning. Understanding tax forms and filing requirements helps individuals meet financial responsibilities and make informed decisions.	EE1.a.i EE1.a.m EE1.a.h	Formative Assessments: Classwork and homework checks Scenario-based practice Budgeting practice tasks Financial decision-making reflections Vocabulary/concept checks Exit tickets Class discussion checks Quizzes Student self-assessment/reflection Summative Assessments: Unit tests or quizzes Budget/spending plan project Financial plan critique Consumer awareness or scam analysis task Credit/loan comparison task Tax form or paycheck analysis task Insurance comparison task Assessment Criteria: Students are assessed on financial reasoning, accuracy of calculations, application of personal finance concepts, decision-making, and communication of financial choices.	List reasons governments tax people Identify payroll taxes deducted from a paycheck Analyze how tax liability affects income Identify potential deductions and credits that affect state and federal income tax Evaluate types of taxes, including progressive and regressive taxes Understand earned benefits and eligibility criteria, including Social Security, Medicare, and Medicaid Understand and follow requirements for filing income taxes	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation
3rd Quarter - Unit 4	Loans, Credit, and Paying for Major Expenses Borrowing money creates both opportunities and financial obligations. The total cost of a loan depends on interest, fees, repayment terms, and payment choices. Credit cards, student loans, car loans, and mortgages require careful comparison because short-term choices can have long-term financial consequences.	CD1.b.h CD1.a.e CD1.g.ch	Formative Assessments: Classwork and homework checks Scenario-based practice Budgeting practice tasks Financial decision-making reflections Vocabulary/concept checks Exit tickets Class discussion checks Quizzes Student self-assessment/reflection Summative Assessments: Unit tests or quizzes Budget/spending plan project Financial plan critique Consumer awareness or scam analysis task Credit/loan comparison task Tax form or paycheck analysis task Insurance comparison task Assessment Criteria: Students are assessed on financial reasoning, accuracy of calculations, application of personal finance concepts, decision-making, and communication of financial choices.	Assess the total cost of incurring a loan Analyze how interest rates, loan origination fees, early payoff, and term length affect loan costs Evaluate the cost of paying for college Analyze the uses of credit that provide financial and personal benefits Evaluate credit card payment options and the consequences of each option Analyze credit cards, car loans, and mortgages as financial tools	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation
4th Quarter - Unit 5	Insurance and Budgeting Insurance helps individuals manage financial risk, but coverage choices affect cost and protection. Budgets help individuals plan for income, saving, taxes, fixed expenses, and variable spending. Financial stability depends on balancing risk management, spending choices, and long-term planning.	RMI2.a.h RMI2.c.h MM1.a.h	Formative Assessments: Classwork and homework checks Scenario-based practice Budgeting practice tasks Financial decision-making reflections Vocabulary/concept checks Exit tickets Class discussion checks Quizzes Student self-assessment/reflection Summative Assessments: Unit tests or quizzes Budget/spending plan project Financial plan critique Consumer awareness or scam analysis task Credit/loan comparison task Tax form or paycheck analysis task Insurance comparison task Assessment Criteria: Students are assessed on financial reasoning, accuracy of calculations, application of personal finance concepts, decision-making, and communication of financial choices.	Evaluate why some types of insurance are required by law Analyze insurance coverage needs that can increase or decrease costs Compare insurance policies, rates, premiums, and deductibles Prepare a budget or spending plan Identify sources of income Plan saving strategies Account for taxes, fixed expenses, and variable spending	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation

Transition to College Math

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
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1st Quarter - Unit 1	Trigonometric Functions, Identities, and Equations Trigonometric relationships connect angle measure, right triangles, the unit circle, graphs, and periodic behavior. Trigonometric functions, identities, and equations provide tools for solving both abstract and applied problems. Students use trigonometric models to analyze relationships involving angles, side lengths, transformations, and real-world measurement.	A 501 F 704 F 705 F 706 G 402 G 504 G 509 G 603 G 604	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Use trigonometric functions in right triangles Apply angle and angle measure relationships Use trigonometric functions of general angles Apply the Law of Sines and Law of Cosines Graph trigonometric functions Analyze translations of trigonometric graphs Use inverse trigonometric functions Use and verify trigonometric identities Apply sum and difference identities Apply double-angle and half-angle identities Solve trigonometric equations	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation
2nd Quarter - Unit 2	Financial Mathematics Financial mathematics uses rates, proportions, and repeated calculations to model real-world money decisions. Interest, credit, loans, and annuities affect the total cost or value of financial choices over time. Students use mathematical reasoning to compare financial options and understand long-term consequences.	AF 401	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Calculate simple interest Calculate compound interest Analyze time value of money Analyze credit card situations Perform loan calculations Analyze annuities Solve routine multistep problems involving rates, proportions, tax, discounts, and averages	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation
2nd Quarter - Unit 3	Systems of Linear Equations Systems of linear equations represent situations where multiple conditions must be true at the same time. Solutions to systems can be interpreted algebraically, graphically, and in context. Students use systems to model and solve problems involving shared relationships or constraints.	A 604	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Solve systems of linear equations Interpret solutions to systems Use systems to represent relationships involving two linear equations Connect algebraic solutions to points of intersection	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation
3rd Quarter - Unit 4	Quadratic Functions Quadratic functions can be represented and analyzed through equations, graphs, transformations, and solutions. Different solution methods, including graphing, factoring, completing the square, and the quadratic formula, reveal different features of quadratic relationships. Complex numbers and the discriminant extend students' understanding of quadratic solutions.	N 503 N 504 N 602 N 606 AF 603 AF 704 AF 705 A 506 A 507 A 508 A 601 A 605 A 702 F 401	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Graph quadratic functions Solve quadratic equations by graphing Solve quadratic equations by factoring Work with numerical factors and number properties Identify solutions to simple quadratic equations Factor simple quadratics Manipulate expressions and equations Solve quadratic equations using multiple methods Work with complex numbers Complete the square Use the quadratic formula and discriminant Analyze transformations of quadratic graphs Analyze quadratic inequalities Evaluate quadratic functions in function notation Interpret and analyze quadratic graphs in the coordinate plane	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation

3rd Quarter - Unit 5	Exponential and Logarithmic Functions Exponential and logarithmic functions model relationships involving growth, decay, and inverse operations. Logarithms provide a way to interpret, rewrite, and solve exponential relationships. Students use exponential and logarithmic functions to analyze graphs, solve equations, and model real-world situations.	AF 603 AF 703 AF 704 A 501 F 702 F 707	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Graph exponential functions Solve exponential equations and inequalities Understand logarithms and logarithmic functions Solve logarithmic equations and inequalities Use properties of logarithms Use common logarithms Use base e and natural logarithms Apply exponential and logarithmic functions Analyze exponential and logarithmic graphs Build exponential functions Recognize rounded quantities in real-world contexts	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation
4th Quarter - Unit 6	Polynomial Functions Polynomial functions can be analyzed through operations, graphs, roots, zeros, and key function features. Algebraic structure helps students rewrite polynomial expressions and solve polynomial equations. The Remainder Theorem, Factor Theorem, and Rational Zero Theorem provide tools for connecting polynomial equations, factors, and graph behavior.	AF 603 AF 703 AF 704 AF 705 A 402 A 404 A 505 A 512 A 703 F 501 F 509	Formative Assessments: Collected homework and classwork Class review Chapter quizzes Daily observations and class problems 5-minute checks Daily homework checks ACT practice Student self-assessment/reflection Notebook/journal checks Summative Assessments: Chapter/unit tests Performance tasks or projects Final exam/review sheets as applicable Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, mathematical reasoning, communication, and presentation of work.	Evaluate why some types of insurance are required by law Analyze insurance coverage needs that can increase or decrease costs Compare insurance policies, rates, premiums, and deductibles Prepare a budget or spending plan Identify sources of income Plan saving strategies Account for taxes, fixed expenses, and variable spending	Performance Tasks: Collected homework • Quality Core Resources • ACT Practice • Standardized Test Preparation

AP Calculus AB/BC

Timeline	Themes/Enduring Understandings/Essential Questions for the Unit	AP Learning Objectives Addressed	Assessments	Standards Based Skills and Concepts Targeted	Strategies/Practices Used to Teach Skills and Concepts	Resources/Texts Used
1st Quarter - Unit 1	Unit 1: Limits and Continuity Limits describe function behavior near a point or as values grow without bound. Continuity depends on how function values, limits, and graphical behavior connect. Students use numerical, graphical, analytical, and verbal representations to evaluate limits and analyze continuity.	1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 1.10 1.11 1.12 1.13 1.14 1.15 1.16	Formative Assessments: Classwork and homework checks AP-style practice problems Exit tickets Short quizzes Free-response practice Multiple-choice practice Graphical, numerical, analytical, and verbal reasoning tasks Student self-assessment/reflection Summative Assessments: Unit tests AP-style multiple-choice assessments AP-style free-response assessments Performance tasks or applied problem-solving tasks Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, procedural fluency, reasoning and justification, use of multiple representations, and communication of calculus concepts.	Represent limits using proper notation Interpret limits graphically, numerically, analytically, and verbally Evaluate limits using algebraic techniques Select appropriate techniques for finding limits Determine whether limits exist Determine continuity at a point and over intervals Classify discontinuities Connect infinite limits with vertical asymptotes Connect limits at infinity with horizontal asymptotes Apply the Intermediate Value Theorem	Performance Tasks: Collected homework	Core Resource: AP Calculus AB/BC course materials aligned to the AP Calculus Course and Exam Description Supplemental Resource: AP-style multiple-choice and free-response practice; released AP Calculus practice problems; graphing calculator activities; teacher-created, standards-aligned calculus practice materials
1st Quarter - Unit 2	Unit 2: Differentiation: Definition and Fundamental Properties Derivatives describe instantaneous rates of change and local function behavior. Differentiability connects algebraic, graphical, and numerical representations of change. Derivative rules provide efficient methods for analyzing many types of functions.	2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 2.10	Formative Assessments: Classwork and homework checks AP-style practice problems Exit tickets Short quizzes Free-response practice Multiple-choice practice Graphical, numerical, analytical, and verbal reasoning tasks Student self-assessment/reflection Summative Assessments: Unit tests AP-style multiple-choice assessments AP-style free-response assessments Performance tasks or applied problem-solving tasks Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, procedural fluency, reasoning and justification, use of multiple representations, and communication of calculus concepts.	Interpret derivatives as rates of change Interpret derivatives graphically Estimate derivatives numerically Compute derivatives using the limit definition Determine differentiability Explain the relationship between differentiability and continuity Apply basic differentiation rules Differentiate trigonometric, exponential, and logarithmic functions Differentiate products and quotients	Performance Tasks: Collected homework	Core Resource: AP Calculus AB/BC course materials aligned to the AP Calculus Course and Exam Description Supplemental Resource: AP-style multiple-choice and free-response practice; released AP Calculus practice problems; graphing calculator activities; teacher-created, standards-aligned calculus practice materials

3rd Quarter - Unit 7	Unit 7: Differential Equations	7.1	Formative Assessments: Classwork and homework checks AP-style practice problems Exit tickets Short quizzes Free-response practice Multiple-choice practice Graphical, numerical, analytical, and verbal reasoning tasks Student self-assessment/reflection	Model real situations with differential equations Verify solutions Interpret slope fields Approximate solutions graphically Use Euler's Method Solve separable differential equations Solve initial value problems Model exponential growth Model logistic growth	Performance Tasks: Collected homework	Core Resource: AP Calculus AB/BC course materials aligned to the AP Calculus Course and Exam Description Supplemental Resource: AP-style multiple-choice and free-response practice; released AP Calculus practice problems; graphing calculator activities; teacher-created, standards-aligned calculus practice materials
	Differential equations model relationships involving rates of change. Slope fields, graphical approximations, and analytical methods help students understand solution behavior. Initial conditions and differential equation models can be used to describe growth, change, and real-world phenomena.	7.2 7.3 7.4 7.5 7.6 7.7 7.8 7.9	Summative Assessments: Unit tests AP-style multiple-choice assessments AP-style free-response assessments Performance tasks or applied problem-solving tasks Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, procedural fluency, reasoning and justification, use of multiple representations, and communication of calculus concepts.			
3rd Quarter - Unit 8	Unit 8: Applications of Integration	8.1	Formative Assessments: Classwork and homework checks AP-style practice problems Exit tickets Short quizzes Free-response practice Multiple-choice practice Graphical, numerical, analytical, and verbal reasoning tasks Student self-assessment/reflection	Find average value of a function Interpret motion using integration Solve applied accumulation problems Compute areas between curves Compute volumes using cross sections Compute volumes using discs and washers Compute arc length	Performance Tasks: Collected homework	Core Resource: AP Calculus AB/BC course materials aligned to the AP Calculus Course and Exam Description Supplemental Resource: AP-style multiple-choice and free-response practice; released AP Calculus practice problems; graphing calculator activities; teacher-created, standards-aligned calculus practice materials
	Define integrals can be used to solve applied problems involving accumulation, area, volume, motion, and average value. Integration connects geometric, physical, and contextual interpretations of total change. Students select and apply integration methods based on the structure of the region, solid, or applied situation.	8.2 8.3 8.4 8.5 8.6 8.7 8.8 8.9 8.10 8.11 8.12 8.13	Summative Assessments: Unit tests AP-style multiple-choice assessments AP-style free-response assessments Performance tasks or applied problem-solving tasks Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, procedural fluency, reasoning and justification, use of multiple representations, and communication of calculus concepts.			
4th Quarter - Unit 9	Unit 9: Parametric Equations, Polar Coordinates, and Vector-Valued Functions	9.1	Formative Assessments: Classwork and homework checks AP-style practice problems Exit tickets Short quizzes Free-response practice Multiple-choice practice Graphical, numerical, analytical, and verbal reasoning tasks Student self-assessment/reflection	Differentiate parametric equations Compute second derivatives of parametric curves Find parametric arc length Differentiate vector-valued functions Integrate vector-valued functions Solve motion problems Differentiate polar equations Compute areas in polar coordinates Find area between polar curves	Performance Tasks: Collected homework	Core Resource: AP Calculus AB/BC course materials aligned to the AP Calculus Course and Exam Description Supplemental Resource: AP-style multiple-choice and free-response practice; released AP Calculus practice problems; graphing calculator activities; teacher-created, standards-aligned calculus practice materials
	Calculus techniques can be extended beyond rectangular functions to analyze more complex relationships. Students use differentiation and integration to study motion, area, arc length, and curve behavior in multiple coordinate systems.	9.2 9.3 9.4 9.5 9.6 9.7 9.8 9.9	Summative Assessments: Unit tests AP-style multiple-choice assessments AP-style free-response assessments Performance tasks or applied problem-solving tasks Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, procedural fluency, reasoning and justification, use of multiple representations, and communication of calculus concepts.			
4th Quarter - Unit 10	Unit 10: Infinite Sequences and Series	10.1	Formative Assessments: Classwork and homework checks AP-style practice problems Exit tickets Short quizzes Free-response practice Multiple-choice practice Graphical, numerical, analytical, and verbal reasoning tasks Student self-assessment/reflection	Determine convergence or divergence of series Analyze geometric series Apply the nth-Term Test Apply the Integral Test Analyze harmonic and p-series Apply comparison tests Apply the Alternating Series Test Apply the Ratio Test Distinguish absolute and conditional convergence Estimate series error Construct Taylor polynomials Use the Lagrange Error Bound Determine radius and interval of convergence Work with Taylor and Maclaurin series Represent functions using power series	Performance Tasks: Collected homework	Core Resource: AP Calculus AB/BC course materials aligned to the AP Calculus Course and Exam Description Supplemental Resource: AP-style multiple-choice and free-response practice; released AP Calculus practice problems; graphing calculator activities; teacher-created, standards-aligned calculus practice materials
	Infinite series can be analyzed by determining whether they converge or diverge. Convergence tests provide structured methods for justifying the behavior of series. Taylor, Maclaurin, and power series allow students to represent functions using polynomial approximations.	10.2 10.3 10.4 10.5 10.6 10.7 10.8 10.9 10.10 10.11 10.12 10.13 10.14 10.15	Summative Assessments: Unit tests AP-style multiple-choice assessments AP-style free-response assessments Performance tasks or applied problem-solving tasks Final exam/review assessment Assessment Criteria: Students are assessed on mathematical accuracy, conceptual understanding, procedural fluency, reasoning and justification, use of multiple representations, and communication of calculus concepts.			