Curriculum Map

Subject: Common Core 2 Year Algebra Math 9S

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Unit #1 – The Building Blocks of Algebra ➢ Rates, Patterns and Problem Solving ➢ Variables and Expressions ➢ The Commutative and Associative Properties ➢ The Distributive Property ➢ Equivalent Expressions ➢ Seeing Structure in Expressions ➢ Exponents as Repeated Multiplication ➢ More Complex Equivalency ➢ Structure Work ➢ Translating English to Algebra ➢ Algebraic Puzzles **Unit #2 – Linear Expressions,**	**Unit #3-Functions** ➢ Introduction to Functions ➢ Function Notation ➢ Graphs of Functions ➢ Graphical Features ➢ Exploring Functions Using the Graphing Calculator ➢ Average Rate of Change ➢ The Domain and Range of a Function **Unit #4 – Linear Functions** ➢ Proportional Relationships ➢ Unit Conversions ➢ Non-proportional Linear Relationships ➢ Graphing Linear Functions (Lines) ➢ Writing Equations in Slope-Intercept Form **Slope**	**Unit #5 – Systems of Linear Equations and Inequalities** ➢ Solutions to Systems and Solving by Graphing ➢ Solving Systems by Substitution ➢ Properties of Systems and Their Solutions ➢ The Elimination Method ➢ Modeling with Systems of Equations ➢ Solving Equations Graphically ➢ Solving Systems of Inequalities ➢ Modeling with Systems of Inequalities **Unit #6 – Exponents** ➢ Simplifying Exponents ➢ Zero and Negative Exponents ➢ Exponential Growth ➢ Intro to Exponential Functions	**Unit #7- Polynomials** ➢ Intro to Polynomials ➢ Multiplying Polynomials ➢ Factoring Polynomials ➢ Factoring Based on Conjugate Pairs ➢ Factoring Trinomials **Square Roots** ➢ Simplifying Square roots **Unit #10–** ➢ Graphical Displays of Data ➢ Quartiles and Box Plots ➢ Measures of Central Tendency **Regents review**

Equations and Inequalities ➢ Equations and Their Solutions ➢ Seeing Structure to Solve Equations ➢ A Linear Equation Solving Review ➢ Justifying Steps in Solving an Equation ➢ Linear Word Problems ➢ Linear Equations and Consecutive Integer Games. ➢ Solving Linear Equations with Unspecified Constants ➢ Inequalities ➢ Solving Linear Inequalities ➢ Compound Inequalities ➢ Interval Notation ➢ Modeling with Inequalities **Quarterly Review** **Quarterly Test**	➢ Finding slope from a graph ➢ Finding slope from two points ➢ Finding equation of slope ➢ Graphing lines using slope intercept ➢ Graphing lines using standard form ➢ Writing linear Equations **Quarterly Review** **Quarterly Test**	➢ Percent Review ➢ Percent Increase and Decrease **Quarterly Review** **Quarterly Test**	

Curriculum Map

Subject: Common Core Two Year Algebra Math 10S Second

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Unit #1 – The Building Blocks of Algebra Review all lessons with Supplemental Worksheets ➢ Rates, Patterns and Problem Solving ➢ Variables and Expressions ➢ The Commutative and Associative Properties ➢ The Distributive Property ➢ Equivalent Expressions ➢ Seeing Structure in Expressions ➢ Exponents as Repeated Multiplication ➢ More Complex Equivalency ➢ Structure Work ➢ Translating English to Algebra ➢ Algebraic Puzzles **Unit #2 – Linear Expressions, Equations and Inequalities Review all lessons with Supplemental Worksheets** ➢ Equations and Their Solutions ➢ Seeing Structure to	**Unit #4 – Linear Functions and Arithmetic Sequences Review Lessons 1-5 with Supplemental Worksheets** ➢ Proportional Relationships ➢ Unit Conversions ➢ Non-proportional Linear Relationships ➢ Graphing Linear Functions (Lines) ➢ Writing Equations in Slope-Intercept Form **Unit 4 Lessons 6-13** ➢ Modeling with Linear Functions ➢ Linear Modeling ➢ Strange Lines- Vertical and Horizontal ➢ Absolute Value and Step Functions ➢ The Truth about Graphs ➢ Graphs of Linear Inequalities ➢ Introduction to Sequences ➢ Arithmetic Sequences **Unit #5 – Systems of Linear**	**Unit #6 – Exponents Review Lessons 1-6 with Supplemental Worksheets** ➢ Simplifying Expressions Involving Exponents ➢ Zero and Negative Exponents ➢ Exponential Growth ➢ Intro to Exponential Functions ➢ Percent Review ➢ Percent Increase and Decrease **Lessons 7-9** ➢ Exponential Models Based on Percent Growth ➢ Linear versus Exponential ➢ Geometric Sequences **Unit #7- Polynomials Review Lessons 1-4 with Supplemental Worksheets** ➢ Intro to Polynomials ➢ Multiplying Polynomials ➢ Factoring Polynomials ➢ Factoring Based on	**Unit #9- Roots and Irrational Numbers** ➢ Square Roots ➢ Irrational Numbers ➢ Square Root Functions and Shifting ➢ Solving Quadratics Using Inverse Operations ➢ Finding Zeroes by Completing the Square ➢ The Quadratic Formula ➢ Cube Roots **Unit #10– Exponents** ➢ Graphical Displays of Data ➢ Quartiles and Box Plots ➢ Measures of Central Tendency ➢ Variation within a Data Set ➢ Two Way Frequency Tables ➢ Bivariate Data Analysis ➢ Linear Regression on the Calculator ➢ Other Types of Regression ➢ Quantifying Predictability ➢ Residuals

Solve Equations ➢ A Linear Equation Solving Review ➢ Justifying Steps in Solving an Equation ➢ Linear Word Problems ➢ Linear Equations and Consecutive Integer Games. ➢ Solving Linear Equations with Unspecified Constants ➢ Inequalities ➢ Solving Linear Inequalities ➢ Compound Inequalities ➢ Interval Notation ➢ Modeling with Inequalities **Unit #3-Functions** ➢ Introduction to Functions ➢ Function Notation ➢ Graphs of Functions ➢ Graphical Features ➢ Exploring Functions Using the Graphing Calculator ➢ Average Rate of Change ➢ The Domain and Range of a Function **Quarterly Review** **Quarterly Test**	**Equations and Inequalities** ➢ Solutions to Systems and Solving by Graphing ➢ Solving Systems by Substitution ➢ Properties of Systems and Their Solutions ➢ The Elimination Method ➢ Modeling with Systems of Equations ➢ Solving Equations Graphically ➢ Solving Systems of Inequalities ➢ Modeling with Systems of Inequalities **Quarterly Review** **Quarterly Test**	Conjugate Pairs **Lessons 5 and 6** ➢ Factoring Trinomials ➢ More Factoring **Unit #8- Quadratic Functions and Their Algebra** ➢ Intro to Quadratic Functions ➢ More Work with Parabolas ➢ The Shifted Form of Parabolas ➢ Completing the Square ➢ Stretching the Parabola and more Completing the Square ➢ The Zeroes of Quadratics ➢ Zero Product Law **Quarterly Review** **Quarterly Test**	**Unit #11– Functions and Modeling** ➢ Function Transformations ➢ Horizontal Stretching of Functions ➢ Discrete Functions ➢ Linear and Exponential Models ➢ Step Functions Revisited ➢ Piecewise Linear Functions ➢ Quadratic Models ➢ Limits on the Accuracy of our Models **Regents review**

Curriculum Map

Subject: Common Core Two Year Algebra Math 10S Second Year

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Unit #1 – The Building Blocks of Algebra Review all lessons with Supplemental Worksheets ➢ Rates, Patterns and Problem Solving ➢ Variables and Expressions ➢ The Commutative and Associative Properties ➢ The Distributive Property ➢ Equivalent Expressions ➢ Seeing Structure in Expressions ➢ Exponents as Repeated Multiplication ➢ More Complex Equivalency ➢ Structure Work ➢ Translating English to Algebra ➢ Algebraic Puzzles **Unit #2 – Linear Expressions, Equations and Inequalities Review all lessons with Supplemental Worksheets** ➢ Equations and Their Solutions ➢ Seeing Structure to	**Unit #4 – Linear Functions and Arithmetic Sequences Review Lessons 1-5 with Supplemental Worksheets** ➢ Proportional Relationships ➢ Unit Conversions ➢ Non-proportional Linear Relationships ➢ Graphing Linear Functions (Lines) ➢ Writing Equations in Slope-Intercept Form **Unit 4 Lessons 6-13** ➢ Modeling with Linear Functions ➢ Linear Modeling ➢ Strange Lines- Vertical and Horizontal ➢ Absolute Value and Step Functions ➢ The Truth about Graphs ➢ Graphs of Linear Inequalities ➢ Introduction to Sequences ➢ Arithmetic Sequences **Review Unit 5 Systems of**	**Lessons 7-9** ➢ Exponential Models Based on Percent Growth ➢ Linear versus Exponential ➢ Geometric Sequences **Unit #7- Polynomials Review Lessons 1-4 with Supplemental Worksheets** ➢ Intro to Polynomials ➢ Multiplying Polynomials ➢ Factoring Polynomials ➢ Factoring Based on Conjugate Pairs **Lessons 5 and 6** ➢ Factoring Trinomials ➢ More Factoring **Unit #8- Quadratic Functions and Their Algebra** ➢ Intro to Quadratic Functions ➢ More Work with Parabolas ➢ The Shifted Form of Parabolas ➢ Completing the	**Unit #9- Roots and Irrational Numbers** ➢ Square Roots ➢ Irrational Numbers ➢ Square Root Functions and Shifting ➢ Solving Quadratics Using Inverse Operations ➢ Finding Zeroes by Completing the Square ➢ The Quadratic Formula ➢ Cube Roots **Unit #10– Exponents** ➢ Graphical Displays of Data ➢ Quartiles and Box Plots ➢ Measures of Central Tendency ➢ Variation within a Data Set ➢ Two Way Frequency Tables ➢ Bivariate Data Analysis ➢ Linear Regression on the Calculator ➢ Other Types of Regression ➢ Quantifying Predictability ➢ Residuals

Solve Equations ➢ A Linear Equation Solving Review ➢ Justifying Steps in Solving an Equation ➢ Linear Word Problems ➢ Linear Equations and Consecutive Integer Games. ➢ Solving Linear Equations with Unspecified Constants ➢ Inequalities ➢ Solving Linear Inequalities ➢ Compound Inequalities ➢ Interval Notation ➢ Modeling with Inequalities **Quarterly Review** **Quarterly Test**	**Linear Equations and Inequalities Lessons 1-8** **Unit #6 – Exponents Review Lessons 1-6 with Supplemental Worksheets** ➢ Simplifying Expressions Involving Exponents ➢ Zero and Negative Exponents ➢ Exponential Growth ➢ Intro to Exponential Functions ➢ Percent Review ➢ Percent Increase and Decrease **Quarterly Review** **Quarterly Test**	Square ➢ Stretching the Parabola and more Completing the Square ➢ The Zeroes of Quadratics ➢ Zero Product Law **Quarterly Review** **Quarterly Test**	**Unit #11– Functions and Modeling** ➢ Function Transformations ➢ Horizontal Stretching of Functions ➢ Discrete Functions ➢ Linear and Exponential Models ➢ Step Functions Revisited ➢ Piecewise Linear Functions ➢ Quadratic Models ➢ Limits on the Accuracy of our Models **Regents review**

CURRICULUM MAP

Subject: Common Core Algebra **Grade Level: 9** **8/14**

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Unit #1 – The Building Blocks of Algebra (11 Days) ➢ Rates, Patterns and Problem Solving ➢ Variables and Expressions ➢ The Commutative and Associative Properties ➢ The Distributive Property ➢ Equivalent Expressions ➢ Seeing Structure in Expressions ➢ Exponents as Repeated Multiplication ➢ More Complex Equivalency ➢ Structure Work ➢ Translating English to Algebra ➢ Algebraic Puzzles **Unit #2 – Linear Expressions, Equations and Inequalities (13 Days)** ➢ Equations and Their Solutions ➢ Seeing Structure to Solve Equations ➢ A Linear Equation Solving Review ➢ Justifying Steps in Solving an Equation ➢ Linear Word Problems ➢ Linear Equations and Consecutive Integer Games. ➢ Solving Linear	**Unit #4 – Linear Functions and Arithmetic Sequences (13 Days)** ➢ Proportional Relationships ➢ Unit Conversions ➢ Non-proportional Linear Relationships ➢ Graphing Linear Functions (Lines) ➢ Writing Equations in Slope-Intercept Form ➢ Modeling with Linear Functions ➢ Linear Modeling ➢ Strange Lines- Vertical and Horizontal ➢ Absolute Value and Step Functions ➢ The Truth about Graphs ➢ Graphs of Linear Inequalities ➢ Introduction to Sequences ➢ Arithmetic Sequences **Unit #5 – Systems of Linear Equations and Inequalities (8 Days)** ➢ Solutions to Systems and Solving by Graphing ➢ Solving Systems by Substitution ➢ Properties of Systems and Their Solutions	**Unit #6 – Exponents (9 Days)** ➢ Simplifying Expressions Involving Exponents ➢ Zero and Negative Exponents ➢ Exponential Growth ➢ Intro to Exponential Functions ➢ Percent Review ➢ Percent Increase and Decrease ➢ Exponential Models Based on Percent Growth ➢ Linear versus Exponential ➢ Geometric Sequences **Unit #7- Polynomials (6 days)** ➢ Intro to Polynomials ➢ Multiplying Polynomials ➢ Factoring Polynomials ➢ Factoring Based on Conjugate Pairs ➢ Factoring Trinomials **Unit #8- Quadratic Functions and Their Algebra (7 Days)** ➢ Intro to Quadratic Functions ➢ More Work with Parabolas ➢ The Shifted Form of	**Unit #10– Exponents (10 Days)** ➢ Graphical Displays of Data ➢ Quartiles and Box Plots ➢ Measures of Central Tendency ➢ Variation within a Data Set ➢ Two Way Frequency Tables ➢ Bivariate Data Analysis ➢ Linear Regression on the Calculator ➢ Other Types of Regression ➢ Quantifying Predictability ➢ Residuals **Unit #11– Functions and Modeling (8 Days)** ➢ Function Transformations ➢ Horizontal Stretching of Functions ➢ Discrete Functions ➢ Linear and Exponential Models ➢ Step Functions Revisited ➢ Piecewise Linear Functions ➢ Quadratic Models ➢ Limits on the Accuracy of our Models

Equations with Unspecified Constants ➢ Inequalities ➢ Solving Linear Inequalities ➢ Compound Inequalities ➢ Interval Notation ➢ Modeling with Inequalities **Unit #3-Functions (7 Days)** ➢ Introduction to Functions ➢ Function Notation ➢ Graphs of Functions ➢ Graphical Features ➢ Exploring Functions Using the Graphing Calculator ➢ Average Rate of Change ➢ The Domain and Range of a Function	➢ The Elimination Method ➢ Modeling with Systems of Equations ➢ Solving Equations Graphically ➢ Solving Systems of Inequalities ➢ Modeling with Systems of Inequalities **Midterm Review**	Parabolas ➢ Completing the Square ➢ Stretching the Parabola and more Completing the Square ➢ The Zeroes of Quadratics ➢ Zero Product Law **Unit #9- Roots and Irrational Numbers (8 Days)** ➢ Square Roots ➢ Irrational Numbers ➢ Square Root Functions and Shifting ➢ Solving Quadratics Using Inverse Operations ➢ Finding Zeroes by Completing the Square ➢ The Quadratic Formula ➢ Cube Roots	**Regents review**

CURRICULUM MAP

Subject: Common Core Geometry **Grade Level 10**

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Module 1: Congruence, proofs and constructions **Basic constructions (G-CO.1, G-CO.12, G-CO.13)** 1. Equilateral triangle 2. Bisect an angle 3. Perpendicular bisector 4. Points of concurrency **Unknown angles (G-CO.9)** 1. Angles and lines at a point 2. Transversals 3. Auxiliary Lines 4. Angles in a triangle 5. Writing proofs 6. Proofs with constructions 7. Proofs of geometric facts **Transformations and rigid motions (G-CO.2, G-CO.3, G-CO.4, G, CO.5, G-CO.6, G-CO.7, G-CO.12)** 1. Reflections on and off the coordinate plane 2. Translations on and off the coordinate plane	***Module 1 Continued…*** **Congruence (G-CO.7, G-CO.8)** 7. Proving properties of parallelograms 8. Mid-segment of a triangle 9. Proving points of concurrency ***Module 2: Similarity, proof and trigonometry*** **Similarity and dilations (G-SRT.A.2, G-SRT.A.3, G-SRT.B.5, G-MG.A.1)** 1. Dilations on the coordinate plane 2. Mapping segments and lines 3. Concentric circles 4. Dilations mapping angles 5. Similarity transformations 6. AA similarity 7. SAS and ASA similarity	**Trigonometry (G-SRT.C.6, G-SRT.C.7, G-SRT.C.8)** 1. The trigonometric ratios 2. Def. of sine, cosine and tangent 3. sine and cosine of complementary angles 4. Problem solving using sine and cosine 5. Applying tangents 6. Using trigonometry t find angle measures 7. Trigonometry and the Pythagorean theorem ***Module 3: Extending to three dimensions*** **Area (G-GMD.A.1)** 1. Properties of area 2. The scaling principle of area 3. Planes	***Module 4: Connecting Algebra and Geometry through coordinates*** **Slope Formula (G-GPE.5)** 1. Parallel and perpendicular lines 2. Equations of parallel and perpendicular lines **Distance Formula (G-GPE.7)** 1. Using the distance formula 2. Perimeter and area of polygons **Midpoint formula (G-GPE.6)** 1. Dividing segments proportionally 2. Perpendicular bisectors and distance from a line to a point **Coordinate Proofs (G-GPE.4)** 1. Squares and rectangles 2. Parallelograms and Rhombi 3. Trapezoids

3. Rotations on and off the coordinate plane 4. Symmetry 5. Compositions of rigid motions 6. Congruence in terms of rigid motions **Congruence (G-CO.7, G-CO.8)** 1. Introduction of proofs 2. SAS triangle proofs 3. Base angles of an isosceles triangle 4. ASA and SSS 5. AAS and HL 6. Triangle congruency proofs **Quarterly Assessment**	**Applying similarity to triangles (G-SRT.B.4)** 1. Side splitter theorem 2. Properties of similar triangles 3. Angle bisector theorem 4. Special relationships with right triangles 5. Operations with radicals 6. Pythagorean theorem 7. Special right triangles **Quarterly Assessment**	**Volume (G-GMD.A.1, G-GMD.A.3, G-GMD.B.4)** 1. General prisms and cylinders 2. General pyramids and cones 3. Properties of Volume 4. Cavalieri's Principle 5. Volumes of 3D figures **Quarterly Assessment**	***Module 5: Circles with and without coordinates*** **Similar circles (G-C.1)** 1. Proving circles are similar **Chords, tangents and angles in circles (G-C.2)** 1. Central angles 2. Inscribed angles 3. Intersecting chords 4. Parallel Chords 5. Angles exterior of a circle **Constructions in circles (G-C.3)** 1. Squares inscribed in a circle 2. Hexagons inscribed in a circle **Arc lengths and sectors of circles (G-C.1, G-C.2, G-C.5)** 1. Segment lengths of intersecting chords, tangents and secants. **Equation of a circle (G-GPE.1)** 1. Center-radius form 2. Standard form **Regents review**

CURRICULUM MAP

Subject: Algebra 2/Trig(Common Core) **Grade Level: 11**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Unit 1-Algebraic Essentials Review (6 Lessons) • Lesson 1- Variables, Terms and Expressions • Lesson 2-Solving Linear Equations **A-CED.1** • Lesson 3-Common Algebraic Expressions • Lesson 4-Basic Exponent Manipulation **N-RN.2** • Lesson 5-Multiplying Polynomials **A-SSE.2** • Lesson 6-Using Tables on Your Calculator **Unit 2**-Functions as the Cornerstones of Algebra (7 Lessons) • Lesson 1-Introduction to Functions • Lesson 2-Function Notation • Lesson 3-Function Composition • Lesson 4-The Domain and Range of a Function • Lesson 5-One to One Functions • Lesson 6-Inverse Functions **F-BF.4** • Lesson 7-Key Features of Functions **F-IF.9, F-IF.4** **Unit 3**-Linear Functions, Equations, and Their Algebra (7 lessons) • Lesson 1-Direct Variation • Lesson 2-Average Rate of Change **F-IF.6** • Lesson 3-Forms of a Line **F-LE.2** • Lesson 4-Linear Modeling **F-LE.5** • Lesson 5-Inverses of Linear Functions **F-BF.4** • Lesson 6-Piecewise Linear Functions • Lesson 7-Systems of Linear Equations **A-REI.6** (Primarily 3 by 3) **Unit 4**-Exponential and Logarithmic	**Unit 5**-Sequences and Series (6 lessons) • Lesson 1-Sequences **F-IF.3, F-BF.2** • Lesson 2-Arithmetic and Geometric Sequences **F-BF.2, F-LE.2** • Lesson 3-Summation Notation **A-SSE.4** • Lesson 4-Arithmetic Series • Lesson 5-Geometric Series **A-SSE.4** • Lesson 6-Mortgage Payments **A-SSE.4** **Unit 6**-Quadratic Functions and Their Algebra (11 lessons) • Lesson 1-Quadratic Function Review **F-IF.4** • Lesson 2-Factoring **A-SSE.2** • Lesson 3-Factoring Trinomials **A-SSE.2** • Lesson 4-Complete Factoring **A-SSE.2** • Lesson 5-Factoring by Grouping **A-SSE.2** • Lesson 6-The Zero Product Law **A-APR.3, A-REI.4** • Lesson 7-Quadratic Inequalities in One Variable **A-CED.1** • Lesson 8-Completing the Square and Shifting Parabolas **F-BF.3** • Lesson 9-Modeling with Quadratic Functions **A-CED.1** • Lesson 10-Equations of Circles **A-REI.7** • Lesson 11-The Locus Definition of a Parabola **G-GPE** **Unit 7**-Transformations of Functions (5 lessons) • Lesson 1-Shifting Functions **F-BF.3** • Lesson 2-Reflecting Parabolas **F-BF.3**	**Unit 9**-Complex Numbers (4 lessons) • Lesson 1-Imaginary Numbers **N-CN.1** • Lesson 2-Complex Numbers **N-CN.1, N-CN.2** • Lesson 3-Solving Quadratic Equations with Complex Solutions **A-REI.4, N-CN.7** • Lesson 4-The Discriminant of a Quadratic **A-REI.4, N-CN.7** **Unit 10**-Polynomial and Rational Functions (14 lessons) • Lesson 1-Power Functions **F-IF.4, F-BF.3** • Lesson 2-Graphs and Zeroes of a Polynomial **A-APR.3, F-IF.4, F-IF.7** • Lesson 3-Creating Polynomial Equations **F-IF.7** • Lesson 4-Polynomial Identities **A-APR.4** • Lesson 5-Introduction to Rational Functions **F-IF.4** • Lesson 6-Simplifying Rational Expressions **A-APR.6** • Lesson 7-Multiplying and Dividing Rational Expressions **A-APR.6** • Lesson 8-Combining Rational Expressions Using Addition and Subtraction **A-APR.6** • Lesson 9-Complex Fractions • Lesson 10-Polynomial Long Division **A-APR.6** • Lesson 11-The Remainder Theorem **A-APR.2, A-APR.6** • Lesson 12-Solving Rational Equations **A-REI.2** • Lesson 13-Solving Rational Inequalities **A-CED.1** • Lesson 14-Reasoning About Radical and Rational Equations **A-REI.1**	**Unit 12**-Probability (6lessons) • Lesson 1-Introduction to Probability • Lesson 2-Sets and Probability **S-CP.1** • Lesson 3-Adding Probabilities **S-CP.7** • Lesson 4-Conditional Probability **S-CP.3, S-CP.4, S-CP.5, S-CP.6** • Lesson 5-Independent and Dependent Events **S-CP.2, S-CP.4, S-CP.5** • Lesson 6-Multiplying Probabilities **S-CP.2, S-CP.4** **Unit 13**-Statistics (9 lessons) • Lesson 1-Variability and Sampling **S-IC.3** • Lesson 2-Population Parameters • Lesson 3-The Normal Distributions **S-ID.4** • Lesson 4-The Normal Distribution and Z-Scores **S-ID.4** • Lesson 5-Sample Means **S-IC.1, S-IC.2, S-IC.5** • Lesson 6-Sample Proportions **S-IC.1, S-IC.4** • Lesson 7-The Difference in Sample Means **S-IC.5** • Lesson 8-Linear Regression and Lines of Best Fit **S-ID.6(a)** • Lesson 9-Other Types of Regression **S-ID.6(a)**

Functions (14 lessons) • Lesson 1-Integer Exponents **N-RN.2** • Lesson 2-Rational Exponents **N-RN.1, N-RN.2** • Lesson 3-Exponential Function Basics **F-LE.5** • Lesson 4-Finding Equations of Exponentials **F-LE.2** • Lesson 5-The Method of Common Bases **A-CED.2** • Lesson 6-Exponential Modeling with Percent Growth and Decay **A-CED.1, A-SSE.3** • Lesson 7-Mindful Percent Manipulatives **A-SSE.3** • Lesson 8-Introduction to Logarithms • Lesson 9-Graphs of Logarithms **F-IF.4, F-IF.7(e)** • Lesson 10-Logarithm Laws • Lesson 11-Solving Exponential Equations Using Logarithms **F-LE.4** • Lesson 12-The number *e* and the Natural Logarithm **F-LE.4** • Lesson 13-Compound Interest **F-IF.8, F-BF.1(a), A-SSE.3** • Lesson 14-Newton's Law of Cooling **F-BF.1(b)**	• Lesson 3-Vertical Stretching of Functions **F-BF.3** • Lesson 4-Horizontal Stretching of Functions **F-BF.3** • Lesson 5-Even and Odd Functions **F-BF.3** **Unit 8**-Radicals and Their Quadratic Formula (7 lessons) • Lesson 1-Square Root Functions **F-IF.4** • Lesson 2-Solving Square Root Equations **A-REI.2** • Lesson 3-The Basic Exponent Properties **N-RN.2** • Lesson 4-Fractional Exponents Revisited **N-RN.1, N-RN.2** • Lesson 5-More Exponent Practice **N-RN.2** • Lesson 6-The Quadratic Formula **A-REI.4(b)** • Lesson 7-More Work with the Quadratic Formula **A-REI.4(b)**	**Unit 11**-The Circular Functions (11 lessons) • Lesson 1-Rotations and Angle Terminology • Lesson 2-Radian Angle Measurement **F-TF.1** • Lesson 3-The Unit Circle **F-TF.2** • Lesson 4-The Definition of the Sine and Cosine Functions **F-TF.2, F-TF.8** • Lesson 5-More Work with the Sine and Cosine Functions **F-TF.2, F-TF.8** • Lesson 6-Basic Graphs of Sine and Cosine **F-TF.5, F-TF.7(e)** • Lesson 7-Vertical Shifting of Sinusoidal Graphs **F-TF.5, F-TF.7(e)** • Lesson 8-The Frequency and Period of a Sinusoidal Graph **F-TF.5, F-IF.7(e)** • Lesson 9-Sinusoidal Modeling **F-TF.5, F-IF.7(e)** • Lesson 10-The Tangent Function **F-TF.8** • Lesson 11-The Reciprocal Functions **F-TF.8**	

CURRICULUM MAP

Subject: Algebra II **Grade Level: 11** **8/13**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
REAL NUMBER SYSTEM & IT'S PROPERTIES (2) • Solving Linear Equations • Solving linear Inequalities • Solving and Graphing Compound Inequalities • Solving Absolute value equations • Solving Absolute value inequalities • **Rational Expressions (3, 5)** • Review Basic Operations and Factoring • Reducing rational expressions • Multiplying rational expressions • Dividing rational expressions • Adding rational expressions • Subtracting rational expressions • Complex Fractions • Solving Rational Equations	**Radicals (3)** • **Roots and Radicals** • **Simplifying Radicals** • **Adding and Subtracting Radicals** • **Multiplying Radicals** • **Dividing Radicals** • **Rationalizing Denominators** • **Solving Equations with Radicals**	**Quadratics and Complex Numbers (2,4)** • Quadratic Formula • Parabolas • Quadratic Inequalities • Imaginary Numbers • Complex Numbers • Adding and Subtracting Complex Numbers • Multiplying Complex Numbers Multiplicative Inverse and Division of Complex Numbers	**Relations and Functions (3, 4, 7)** • Relations • Functions • Function Notation • Types of Functions • Quadratic Functions • Absolute Value Functions • Circle • Ellipse • Hyperbola • Name the Curve • Inverse Variation • Composition of Functions

CURRICULUM MAP

Subject: Trigonometry **grade level: 12** **8/14**

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Unit #1 – Exponential Functions (14 Days) ➢ Laws of Exponents ➢ Zero and negative exponents ➢ Fractional Exponents ➢ Exponential Functions and their graphs ➢ Solving Exponential Equations ➢ Applications of Exponential Functions **Unit #2 – Logarithmic Functions (15 Days)** ➢ Inverse of an Exponential Function ➢ Logarithmic Form vs. Exponential From ➢ Properties of Logs ➢ Solving Logarithmic Equation ➢ Applications of Logarithmic Functions **Unit #3 – Trigonometric Functions (4 Days)** ➢ Angles and Arcs as Rotations ➢ The Unit Circle ➢ Trig of the Right Triangle (sin, cos, tan)	**Unit #3 Con't– Trigonometric Functions(18 Days)** ➢ Reciprocal Trig Functions ➢ Trig Function Values ➢ Reference Angles ➢ Radian Measurement ➢ Inverse Trig Functions ➢ Co-Functions **Unit #4 – Graphs of Trigonometric Functions (17 Days)** ➢ Domain and Range of Trig Functions ➢ Graphs of all Trig Functions ➢ Sketching Trig Functions **Midterm Review**	**Unit #5 – Trigonometric Identities (11 Days)** ➢ Basic Trig Identities ➢ Proving Trig Identities ➢ Applying Trig Identities **Unit #6- Trigonometric Equations (10 days)** ➢ Solving First and Second Degree Equations ➢ Solving Trig Equations using Substitution **Unit #7- Applications of Trigonometry (13 Days)** ➢ Area of a Triangle ➢ Law of Sines ➢ Law of Cosines ➢ Forces	**Unit #8– Statistics (13 Days)** ➢ Measures of Central Tendency ➢ Measures of Dispersion ➢ Normal Distribution ➢ Regressions **Unit #9– Probability (10 Days)** ➢ Counting Principle ➢ Permutations and Combinations ➢ Binomial Probability **Unit #10– Sequences and Series (8 Days)** ➢ Sigma Notation ➢ Arithmetic Sequences and Series ➢ Geometric Sequences and Series **Final Review**

CURRICULUM MAP

Subject: Math: Pre-calculus (1stt and 2nd Quarters)/Introduction to Calculus(3rd and 4th Quarters) **Grade Level: 12** **rev 11/07**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
FUNCTIONS AND GRAPHS (1,6) • Domain and Range • Functions and their Properties • Classifications of Basic Functions • Applications of Piecewise Functions • Transformations including Vertical/Horizontal Shifts, Line Reflections • Horizontal and Vertical Asymptotes • Symmetries • Modeling with Functions **POLNOMIAL, POWER AND RATIONAL FUNCTIONS (1,6)** • Slope-intercept and point-slope formulas • Modeling with Linear and Quadratic Functions • Modeling with Power Functions • Finding Roots of Higher Degree Functions • Pattern, Degree, End Behavior • Intervals where Functions are Inc/Dec • Local and Global Max and Min • Optimizations Problems	**LINEAR PROGRAMMING (1,4,5)** • Graphing inequalities • Finding Max and Min values of a function • Solving Linear Programming Word Problems **MATRICES (1,5)** • add, subtract, multiply • inverse • equations • applications **CONIC SECTIONS (1,5)** • circle • parabola • hyperbola • ellipse • application problems **PARAMETRIC EQUATIONS (1,4,6)** • algebraic solution • graphical solution • use to model motion	**EXPONENTIAL AND LOGISTIC MODELING (1, 4,5,6)** • Euler Number • In e • Exponential Growth and Decay Problems • Math Finance **INTRODUCTION TO CALCULUS (1,3,4,5,6,9,13)** • limits • delta process • differentiation o power o product rule o quotient rules o max - min problems o related rate problems o Motion, Velocity, Acceleration	**INTRODUCTION TO CALCULUS (1,3,4,5,6,9,13)** DERIVATIVES • Graphically • Concavity, POI, Inc/Dec Intervals • Integration o indefinite integral o definite integral o area under curve o area between two curves

CURRICULUM MAP

Subject: Math: Pre-calculus(1stt and 2nd Quarters)/Introduction to Calculus(3rd and 4th Quarters) ACCELERATED **Grade Level: 11** **rev 11/07**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
FUNCTIONS AND GRAPHS (1,6) • Domain and Range • Functions and their Properties • Classifications of Basic Functions • Applications of Piecewise Functions • Transformations including Vertical/Horizontal Shifts, Line Reflections • Horizontal ,Vertical, Slant and End Behavior Asymptotes • Symmetries • Modeling with Functions **POLNOMIAL, POWER AND RATIONAL FUNCTIONS (1,6)** • Slope-intercept and point-slope formulas • Modeling with Linear and Quadratic Functions • Modeling with Power Functions • Finding Roots of Higher Degree Functions • Complex Roots • Pattern, Degree, End Behavior • Intervals where Functions are Inc/Dec • Local and Global Max and Min • Optimizations Problems	**EXPONENTIAL AND LOGISTIC MODELING (1, 4,5,6)** • Euler Number • In e • Exponential Growth and Decay Problems • Math Finance **MATRICES (1,5)** • add, subtract, multiply • inverse • equations • applications **CONIC SECTIONS (1,5)** • circle • parabola • hyperbola • ellipse • application problems **PARAMETRIC EQUATIONS (1,4,6)** • algebraic solution • graphical solution • use to model motion	**POLAR COORDINATES (1,5)** • Conversion into Polar Coordinates • Graphs of Polars **INTRODUCTION TO CALCULUS (1,3,4,5,6,9,13)** **BASIC DERIVATIVES** • limits • differentiation ○ power ○ product rule ○ quotient rules ○ chain rule ○ implicit differentiation ○ max - min problems ○ related rate problems ○ Motion, Velocity, Acceleration **TRIGONOMETRY DERIVATIVES** • Basic Trig Derivatives/Rules • Chain Rule • Implicit Differentiation • Derivatives of Inverse Sine and Tangent	**INTRODUCTION TO CALCULUS (1,3,4,5,6,9,13)** **TRIGONOMETRY DERIVATIVES** • Basic Trig Derivatives/Rules • Chain Rule • Implicit Differentiation • Derivatives of Inverse Sine and Tangent **DERIVATIVES OF EXPONTIAL AND LOGARITHMIC FUNCTIONS** • Derivatives of Exponential Functions • Derivatives of Logarithmic Functions

CURRICULUM MAP

Subject: Math: Calculus AB **Grade Level: 12** **rev 11/07**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
FUNCTIONS & GRAPHS • inequalities • absolute value • distance & midpoint • equation of line • symmetry • domain & range • classifying functions **LIMITS & CONTINUITY** • limits to infinity • right and left hand limits • constant, sum, product and quotient limits • asymptotes • non-existent limits **CONTINUITY** • definition • graphical interpretation • absolute extrema • intermediate value theorem **DIFFERENTIAL CALCULUS** • definition of derivative • derivative of algebraic functions product, quotient rule, chain rule • derivative of trig function • implicit differentiation	• higher order derivative • differentiability & continuity • exponential and log derivatives • inverse sine and tangent derivative **APPLICATIONS OF DERIVATIVE** • slope of tangent & normal intervals of increase & decrease • concavity • point of inflection • curve sketching • linear approximation • Rolle's theorem • mean value theorem • related rate problems • absolute extrema • curve sketching • applied extrema problems • average & instantaneous rate of change • rectilinear motion	**INTEGRAL CALCULUS** • antiderivative • applications to distance and velocity • definite integral • Fundamental Theorem of Calculus • approx of definite integral • slope fields • rectangular approximation LRAM,RRAM,MRAM, Trapezoidal	**APPLICATIONS OF INTEGRATION** • Continuous growth problems • Integrals as an accumulator • areas • average value of function • volumes of solids - cross sections • volumes of revolution –discs, washers and shells **REVIEW FOR AP EXAM** • Long term project

CURRICULUM MAP

Subject: Math: AP Statistics **Grade Level: 11 or 12** **rev 11/07**

FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Exploring Data I. Interpreting graphical displays of distributions of univariate data • Center, spread, shape • Outliers and other unusual features II. Summarizing distributions of univariate data • Center; median, mean • Spread, range, IQR, standard deviation quartiles, percentiles, standardized scores boxplots III. Comparing distributions of univariate data • Comparing center and spread; within group and between groups, clusters and gaps, outliers and other unusual features • Comparing shapes IV. Exploring bivariate data • Scatterplots • Correlation, linearity, LSRL • Residual plots • Outliers, influential points • Transformations V. Exploring categorical data	**Planning a Study** I. Overview of methods of data collection II. Planning & conducting surveys • Well designed and conducted surveys • Populations, samples, and random selection, bias III. Plan & conduct experiments • Treatments, control groups, experimental units, random assignments, and replication • Sources of bias and confounding, including placebo effect and blinding • Randomization IV. Generalizing results from observational and experimental studies, and surveys **Anticipating Patterns** I. Probability as relative frequency • "Law of large numbers" • Addition rule, multiplication rule, conditional probability, and independence • Discrete random variables • Simulation • Expected value	II. Combining independent random variables • Independence, mean & standard deviation of random variables sums III. The normal distribution IV. Sampling distributions • Sample proportions, means • Central limit theorem • Difference between two independent sample proportions and means • Simulations **Statistical Inference** I. Large Sample Confidence intervals • Proportions and means II. Tests of significance • Logic of significance testing, null & alternative hypotheses; *p*-values; one- and two-sided tests; concepts of Type I and Type II errors; concept of power • Large sample test for a proportions and means	• Chi-squares test for goodness of fit, homogeneity of proportions, and independence (one- and two-way tables) III. Special case of normally distributed data • T-distribution • Single sample t procedures • Two sample (independent and matched pairs) t procedures • Inference for the slope of least-squares regression line from computer outputs **Review for AP Exam** **Long term statistical project**