Precalculus/Trigonometry – Curriculum Map by Mr. Reed

Month	Unit	Topics of Lessons	Objectives	Standards	Resources	Assessments	Adaptations & Modifications	Vocabulary
August	Unit 1 – Review of Numbers, Equations, & Inequalities	Sets of Numbers, Closure, & Order of Operations Equations, Inequalities, & Compound Logic	Students will classify rational and irrational numbers. Students will simplify numerical expressions. Students will solve linear equations and inequalities. Students will use compound logic to solve equations.	CC.2.1.HS.F.2 CC.2.2.HS.D.2 CC.2.2.HS.D.3 CC.2.2.HS.D.8 CC.2.2.HS.D.9 CC.2.2.HS.D.10	Binder Worksheets	HW 1 – 2 HW 3 – 5 Test 1	Adaptations and modifications will be made on a class by class basis.	Rational Irrational Closure PEMDAS Equation Inequality Compound Logic And Or
September	Unit 2 – Factoring & Rational Expressions Unit 3 – Complex Fractions, Review of Exponents, & Multiplying and Dividing Polynomials	Factoring Rational Expressions Simplifying Rational Expressions & Complex Fractions Working with Exponents Multiplying Polynomials & Long Hand Division	Students will factor expressions. Students will simplify rational expressions. Students will simplify expressions involving complex fractions. Student will simplify expressions involving exponents and simplify products and quotients of polynomials.	CC.2.1.HS.F.1 CC.2.1.HS.F.2 CC.2.2.HS.D.2 CC.2.2.HS.D.3 CC.2.2.HS.D.5 CC.2.2.HS.D.6	Binder Worksheets	HW 6 HW 7 – 10 HW 11 – 15 Test 2 Test 3	Adaptations and modifications will be made on a class by class basis.	Monomial Binomial Trinomial Polynomial Factor Rational Expression Power/Exponent Polynomial Multiplication Polynomial Division

October	Unit 4 – Simplifying Sets and Solving Inequalities Unit 5 – Solving Quadratic Equations Unit 6 – Radical Equations, Concepts of Coordinate Geometry	Interval Notation Solving Inequalities (including Tough Inequalities) Factoring, Completing the Square, the Quadratic Formula, Nature of Roots & the Discriminant Radical Equations Distance & Midpoint Formulas Lines	Students will write solutions in both set and interval notation. Students will solve inequalities via compound logic. Students will solve quadratic equations by factoring, completing the square, and using the quadratic formula. Students will determine the nature of the roots of a quadratic equation via the discriminant. Students will solve quadratic equations. Students will solve radical equations. Students will find distance between two points and midpoint. Students will write the equation of lines. Students will find the	CC.2.1.HS.F.2 CC.2.1.HS.F.7 CC.2.2.HS.C.2 CC.2.2.HS.C.3 CC.2.2.HS.C.5 CC.2.2.HS.D.2 CC.2.2.HS.D.4 CC.2.2.HS.D.7	Binder Worksheets	HW 16 HW 17 – 20 HW 21 – 24 HW 25 HW 26 HW 27 – 30 Test 4 Test 5 Test 6	Adaptations and modifications will be made on a class by class basis.	Interval Notation Set Notation Completing the Square Quadratic Discriminant Nature of Roots Radical Distance Midpoint Linear Equation

			equation of a line through a median. Students will find the equation of a perpendicular bisecting line.					
November	Unit 7 – Circles & Circle Equations Unit 8 – Linear & Circular Systems, Functions & Relations	Circles Solving Systems of Equations (Linear & Circular) Distance from a Point to a Line Functions & Relations, Domain & Range, & Finding Roots	Students will graph circles. Students will write the equation of circles. Students will solve linear and circular systems of equations. Students will find the distance from a point to a line. Students will find the domain and range of a function. Students will find the roots of a function.	CC.2.1.HS.F.2 CC.2.2.HS.C.1 CC.2.2.HS.C.2 CC.2.2.HS.C.3 CC.2.2.HS.D.2 CC.2.2.HS.D.4 CC.2.2.HS.D.7 CC.2.2.HS.D.10	Binder Worksheets	HW 31 – 33 HW 34 – 35 HW 36 HW 37 – 40 Test 7 Test 8	Adaptations and modifications will be made on a class by class basis.	Circle Center Radius Perpendicular Distance Relationship Function Domain Range Extraneous Root
December	Unit 9 – Special Functions Unit 10 – Solving Polynomial Inequalities & Graphing Rational Functions	Special Functions & Using Graphs to Solve Equations Addition of Functions, Multiplying Functions, Powers of x, Even and Odd Functions, & Transformations	Students will memorize six special functions. Students will use graphs to solve equations. Students will add and multiply functions.	CC.2.1.HS.F.2 CC.2.2.HS.C.2 CC.2.2.HS.C.3 CC.2.2.HS.C.4 CC.2.2.HS.D.2 CC.2.2.HS.D.3 CC.2.2.HS.D.4 CC.2.2.HS.D.7	Binder Worksheets	HW 41 – 42 HW 43 – 47 HW 48 – 50 Test 9 Test 10	Adaptations and modifications will be made on a class by class basis.	Identity Constant Reciprocal Signum Greatest Integer Absolute Value Even Function Odd Function Transformation y-intercept x-intercept asymptote root

		Solving Polynomial Inequalities, Fractional Inequalities, & Graphing Polynomials	Students will take powers of the identity function. Students will transform functions graphically. Students will solve rational inequalities. Students will graph rational functions.					
January	Unit 11 – Inverse Functions Unit 12 – Introduction to Trigonometry Unit 13 – Special Geometry Triangles & Trigonometric Applications	Inverse Functions & Graphing Inverse Functions Introduction to Trigonometry (including Unit Circle Definitions of the Trig Functions) Special Geometry Triangles, Trig on the Calculator, & Common Angles	Students will find the inverse of a function. Students will graph the inverse of a function. Students will convert degrees to radians and vice versa. Students will calculate basic trigonometric ratios using right triangles. Students will calculate trigonometric ratios via the unit circle. Students will calculate trigonometric ratios using 30-60-90 and 45-45-90 triangles.	CC.2.1.HS.F.2 CC.2.2.HS.C.2 CC.2.2.HS.C.3 CC.2.2.HS.C.4 CC.2.2.HS.C.7 CC.2.2.HS.C.8 CC.2.2.HS.C.9 CC.2.2.HS.D.3 CC.2.2.HS.D.8 CC.2.3.HS.A.7 CC.2.3.HS.A.9	Binder Worksheets	HW 51 – 53 Note: HW 54 – 59 omitted HW 60 – 63 HW 64 – 66 Test 11 Test 12 Test 13	Adaptations and modifications will be made on a class by class basis.	Inverse Sine Cosine Tangent Unit Circle SOHCAHTOA Radian Degree 30-60-90 45-45-90 CAST System

February	Unit 14 – Trigonometric Graphs Unit 15 – Triangle Reading Problems	Graphing Sine & Cosine Graphing Secant, Cosecant, Tangent, & Cotangent Solving Right Triangles & Triangle Reading Problems (including Bearing, Elevation, & Depression Problems)	Students will graph sine and cosine functions. Students will graph secant and cosecant functions. Students will graph tangent and cotangent functions. Students will solve reading problems involving right triangles.	CC.2.1.HS.F.2 CC.2.1.HS.F.4 CC.2.2.HS.C.2 CC.2.2.HS.C.3 CC.2.2.HS.C.4 CC.2.2.HS.C.6 CC.2.2.HS.C.8 CC.2.2.HS.C.9 CC.2.3.HS.A.7	Binder Worksheets	HW 67 – 71 HW 72 – 73 HW 74 – 78 Test 14 Test 15	Adaptations and modifications will be made on a class by class basis.	Amplitude Period Center line Asymptote Angle of Elevation Angle of Depression Bearing
March	Unit 16 – The Law of Cosines & The Law of Sines Unit 16.5 – The Polar Coordinate System Unit 17 – Trigonometric Identities & Trigonometric Equations	Law of Cosines, Law of Sines, & Area of Triangles (including Heron's Formula) Polar Coordinate System Trig Identities	Students will solve triangles using the law of cosines. Students will solve triangles using the law of sines. Students will find the area of triangles using Heron's formula. Students will graph points in the polar coordinate system. Students will use trigonometric identities to solve problems. Students will solve elementary	CC.2.1.HS.F.2 CC.2.1.HS.F.4 CC.2.2.HS.C.7 CC.2.2.HS.C.8 CC.2.2.HS.C.9 CC.2.3.HS.A.7	Binder Worksheets	HW 79 – 82 HW 83 – 84 HW 85 – 87 Test 16 Test 17	Adaptations and modifications will be made on a class by class basis.	Law of Sines Law of Cosines Heron's Formula Semiperimeter Polar Coordinate System Rectangular Coordinate System Reciprocal Identities Cofunction Identities Pythagorean Identities

			trigonometric equations.					
April	Unit 17.5 – Additional Trigonometric Identities Unit 18 – Equations with Multiple Angles	Trig Equations More Trig Identities (including Sum & Difference, Double Angle, & Half Angle) Equations with Multiple Angles	Students will use double angle, half angle, and sum and difference identities to solve problems. Students will solve equations involving multiple angles.	CC.2.1.HS.F.2 CC.2.2.HS.C.7 CC.2.2.HS.C.9 CC.2.2.HS.D.8 CC.2.2.HS.D.9 CC.2.3.HS.A.7	Binder Worksheets	HW 88 – 91 HW 92 – 95 HW 96 – 99 Test 18	Adaptations and modifications will be made on a class by class basis.	Radian Degree Domain Range Sum & Difference Identities Double Angle Identity Half Angle Identity
May	Unit 19 – Inverse Trigonometric Functions Unit 20 – Exponential & Logarithmic Functions	Inverse Trig Functions (arc functions) & Trig Compositions Exponential Functions, Logarithmic Functions, Log Laws, & Log Equations Graphing Logs & Solving Exponential Equations via Logs	Students will use inverse trig functions to solve problems. Students will graph exponential and logarithmic functions. Students will simplify logarithmic expressions using log laws. Students will solve logarithmic equations. Students will solve exponential equations using logs.	CC.2.1.HS.F.1 CC.2.1.HS.F.2 CC.2.2.HS.C.1 CC.2.2.HS.C.2 CC.2.2.HS.C.3 CC.2.2.HS.C.4 CC.2.2.HS.C.5 CC.2.2.HS.C.7 CC.2.2.HS.C.8 CC.2.3.HS.A.7	Binder Worksheets	HW 100 – 104 HW 105 – 111 HW 112 – 113 Test 19 Test 20	Adaptations and modifications will be made on a class by class basis.	Arcfunction Algebraic Transcendental Exponential Logarithmic Base Exponent
June	Unit 21 – Sequences & Series	Sequences & Series Degrees, Minutes, & Seconds	Students will construct sequences.	CC.2.1.HS.F.2 CC.2.1.HS.F.4 CC.2.2.HS.D.4	Binder Worksheets	HW 114 – 115 HW 116 HW 117 – 119	Adaptations and modifications will be made on a class by class	Sequence Series

	Unit 22 – Degrees, Minutes, & Seconds	The Factor Theorem & Finding Rational Roots Miscellaneous Review Topics (Trig. Graphs, Even/Odd Functions, Inverse Functions, and Asymptotes)	Students will construct series. Students will convert decimal degrees to DMS and vice versa.			Test 21 Test 22	basis.	Degree, Minute, Second

Big Ideas:

- Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.
- Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.
- Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.
- Mathematical relationships and functions can be modeled through multiple representations and analyzed to raise and answer questions.
- Mathematical relationships between numbers can be represented, compared, and communicated.
- Measurement attributes can be quantified and estimated using customary and non-customary units of measurement.
- Patterns exhibit relationships that can be extended, described, and generalized.

Note: Topics and assignments are subject to change at the teacher's discretion.

Revision History:
5/3/2020 – Color added to columns.