Curriculum Map

Content Area: Trigonometry

	Content	Skills	Benchmarks	Assessments	Essential Questions
September	• The Cartesian Coordinate System • Functions and their families • Function Transformations and Symmetry • Compositions and Inverses • Angles and Degree Measure • Radian Measure, Arc Length and Area • Reference Angles • Right Triangle Trig • The Trigonometric Functions	• Distance formula, Pythagorean theorem, and compositions • Radians, degrees, and revolutions • Lengths of an arc, area of a sector • Measurement of Angles, Arcs, and Sectors • Angular velocity, linear space • Begin the six trig functions	• G1.2.3 Know a proof of the Pythagorean Theorem, and use the Pythagorean Theorem and its converse to solve multistep problems. • G.1.7.1 Find an equation of a circle given its center and radius; given the equation of a circle, find its center and radius. • G3.1.1 Define reflection, rotation, translation, and glide reflection and find the image of a figure under a given isometry • G1.2.4 Prove and use the relationships among the side lengths and the angles of 30º- 60º- 90º triangles and 45º- 45º- 90º triangles. • G1.3.1 Define the sine, cosine, and tangent of acute angles in a right triangle as ratios of sides. Solve problems about angles, side lengths, or areas using trigonometric ratios in right triangles. • G1.6.1 Solve multistep problems involving circumference and area of circles. • G1.6.3 Solve problems and justify arguments about central angles, inscribed angles, and triangles in circles. • G1.6.4 Know and use properties of arcs and sectors and find lengths of arcs and areas of sectors.	• Quiz P.1-P.2 • Collins Writing Type 3: Graphing • Quiz P.3-P.4 • Collins Writing Type 3: Multiple Translations • Chapter P Test • Quiz 1.1-1.2	• How do we transform one graph to another? • What does an inverse do? • How are the six trig ratios different? • What are the real-world applications for radian measurement of angles?

October	• The Trigonometric Functions • Graphs of the Trig Functions	• Finish the six trig functions • Solve right triangles & applications • SOH CAH TOA • Unit circle • Graph sin, cos, tan, csc, sec, cot	• G1.3.3 Determine the exact values of sine, cosine, and tangent for 0°, 30°, 45°, 60°, and their integer multiples and apply in various contexts. • L1.1.6 Explain the importance of the irrational numbers and in basic right triangle trigonometry, and the importance of because of its role in circle relationships. • G1.3.1 Define the sine, cosine, and tangent of acute angles in a right triangle as ratios of sides. Solve problems about angles, side lengths, or areas using trigonometric ratios in right triangles. • G3.1.1 Define reflection, rotation, translation, and glide reflection and find the image of a figure under a given isometry.	• Quiz Unit Circle • Collins Writing Type 3: Angles from Unit Circle • Quiz 1.3-1.4 • Chapter 1 Test • Quiz 2.1-2.2 • Collins Writing Type 3: Graphing Trigonometric Functions • Quiz 2.3 • Chapter 2 Test	• When do we use the six trig ratios? • How can we use the unit circle to solve common values? • Why are right triangles important? • What are some real-world applications involving trigonometric functions? • How do the graphs of trig functions relate to astronomical data?
November	• Basic Trig Identities • Verifying Identities • Sum and Difference Identities for Sine, Cosine and Tangent • Double and Half Angle Identities	• Relations, functions, inverses • Trig Identities • Simplifying expressions using identities • Find exact values for double and half angles	• G1.3.3 Determine the exact values of sine, cosine, and tangent for 0°, 30°, 45°, 60°, and their integer multiples and apply in various contexts. • L2.1.4 Add, subtract, and multiply complex numbers; use conjugates to simplify quotients of complex numbers.	• Quiz 3.1-3.2 • Collins Writing Type 3: Simplifying Trig Functions • Quiz 3.3-3.4 • Quiz 3.5-3.6 • Chapter 3 Test	• How do the graphs of trig functions relate to sound/radar waves? • What are some examples of modeling trig functions?
December	• Inverse Trig Functions • Sine, Cosine and Tangent Equations • Multiple Angle Equations • Trig Equations of Quadratic Type	• Analyze inverses of sin, cosine, and tangent • Trig equations • The path of a projectile •	• G1.3.3 Determine the exact values of sine, cosine, and tangent for 0°, 30°, 45°, 60°, and their integer multiples and apply in various contexts. • L2.1.4 Add, subtract, and multiply complex numbers; use conjugates to simplify quotients of complex numbers.	• Quiz 4.1 • Quiz 4.2-4.3 • Chapter 4 Test • Collins Writing Type 3: Analyze Inverses Functions	• How can we prove trig identities? • How do we use sum and difference to find non-common angles? • What are some applications for trig identities?

January	• Solving Oblique Triangles • Law of Sines and Law of Cosines	• Law of Sines • Law of Cosines • Ambiguous Case • Review and final exam	• G1.3.2 Know and use the Law of Sines and the Law of Cosines and use them to solve problems. Find the area of a triangle with sides *a* and *b* and included angle q using the formula Area = (1/2) *ab*sin q.	• Quiz 5.1-5.2 • Collins Writing Type 2: When to use Law of Sines and Law of Cosines • Semester Exam	• How do we use double and half to find non-common angles? • When do we use the Law of Sines/Cosines?