TRIGONOMETRY CURRICULUM MAP 2007-08

UNITS OF STUDY	STANDARDS, BENCHMARKS, GLCEs OR HSCEs	BIG IDEAS / KEY CONCEPTS	ASSESSMENTS FOR LEARNING *(Formative)*	ASSESSMENTS OF LEARNING *(Summative)*	LEARNING STRATEGIES *Skills*	CONTENT ACTIVITIES *Knowledge*	VOCABULARY	INSTRUCTIONAL RESOURCES
UNIT 1 **Review Of Geometry Concepts** *Pacing:1 week*	Geometry HSCE	Basic Geometry			Review concepts of angle measure, angle relationships, and similar triangles	Determine vertical, corresponding, supplementary, alternate interior, and alternate exterior angle measures Ability to solve proportions of similar triangles	Angle Types Transversal Vertex Initial Side Terminal Side Positive/Negative Angles	**Textbook:** **Trigonometry 7th Edition** **Authors: Lial, Hornsby, and Schneider** **Published by: Addison Wesley, 2001** Ch. 1 Sec. 1 – 3 Pgs: 2 – 33 Exercise Pgs: 55 – 57
UNIT 2 **Trig Functions** *Pacing:1 week*	A2.10.1 Use the unit circle to define sine and cosine; approximate values of sine and cosine (e.g., sin 3, or cos 0.5); use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic.	Definition of Trig Functions	Homework Quizzes	End of Trimester Assessment	Discuss trig functions and their relationships to each other	Display knowledge of trig functions Explain sine and cosine, and their relationship	Value Sine Cosine	Ch. 1 Sec. 4 & 5 Pgs: 35 - 53 Exercise Pgs: 58 - 59
UNIT 3 **Trig Functions With Acute and Non-acute Angles** *Pacing:1 week*	G1.3.3 Determine the exact values of sine, cosine, and tangent for 0°, 30°, 45°, and 60° their integer multiples and apply in various contexts.	Special Right Triangles	Homework Quizzes	End of Trimester Assessment	Explain SOH CAH TOA Sine = opposite / hypotenuse Cosine = adjacent / hypotenuse Tangent = opposite / adjacent Reference angles	Calculate exact values for special right triangles Calculate and use reference angles	Reference Angles Co-function	Ch. 2 Sec. 1 & 2 Pgs: 62 - 76 Exercise Pgs: 99 - 100
UNIT 4 **Defining and Solving Sine, Cosine, and Tangent** *Pacing:1 week*	A2.10.1 Use the unit circle to define sine and cosine; approximate values of sine and cosine (e.g., sin 3, or cos 0.5); use sine and cosine to define the remaining trigonometric functions; explain why the trigonometric functions are periodic.	Definition of Trig Functions	Homework Quizzes	End of Trimester Assessment	Describe and explain the six trig functions: sine, cosine, tangent, secant, cosecant, cotangent Use the reciprocal identities	Recognize the six trig functions Recognize the reciprocal identities	Sine Cosine Tangent Secant Cosecant Cotangent Pythagorean Identity Quotient Identity	Ch. 1 Sec. 4 & 5 Pgs: 35 - 53 Exercise Pgs: 58 - 59

	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.	Solving and Applying Sine, Cosine, and Tangent	Homework Quizzes	End of Trimester Assessment	Use of TI-83 to solve right triangle	Apply SOH CAH TOA problem-solving skills	Angle of Elevation Angle of Depression Solving Triangles Bearing	Ch. 2 Sec. 3 - 5 Pgs: 77 - 98 Exercise Pgs: 99 - 102
UNIT 5 **Defining and Solving Sine, Cosine, and Tangent** *Pacing:1.5wks*	A2.10.2 Use the relationship between degree and radian measures to solve problems.	Conversions and Problem-solving	Homework Quizzes	End of Trimester Assessment	Calculate conversions; degrees to radians, radians to degrees Applications of arc length, linear and angular velocity, and unit circles	Calculate arc lengths, area and sectors, and unit circles Identify central angles Use angle velocity equation	Radian Sector of Circle Angle of Circle Linear Velocity Angular Velocity	Ch. 3 Sec. 1 - 4 Pgs: 104 - 133 Exercise Pgs: 133 - 135
	A2.10.3 Use the unit circle to determine the exact values of sine and cosine, for integer multiples of $\pi / 6$ and $\pi / 4$.	Special Angles	Homework Quizzes	End of Trimester Assessment	Identify exact values of special angles	Convert radians to degrees, and degrees to radians Calculate arc length and area of sectors Apply linear and angular velocity formulas	Arc Length Unit Circle Linear Velocity Angular Velocity	Ch. 3 Sec. 1 - 4 Pgs: 104 - 133 Exercise Pgs: 133 - 135
UNIT 6 **Defining and Solving Sine, Cosine, and Tangent** *Pacing: 2 wks*	A2.10.4 Graph the sine and cosine, functions; analyze graphs by noting domain, range, period, amplitude, location of maxima and minima, and asymptotes.	Graphing	Homework Quizzes	End of Trimester Assessment	Identify period, amplitude, phase shift, vertical shift, and horizontal shift	Apply all six trig functions; sine, cosine, tangent, secant, cosecant, cotangent	Amplitude Phase Shift Period Vertical Asymptote	Ch. 4 Sec. 1 - 3 Pgs: 138 - 179 Exercise Pgs: 180 - 182
	A2.10.5 Graph transformations of basic trigonometric functions (involving changes in period, amplitude, phase, and midline) and understand the relationship between constants in the formula and the transformed graph.	Translations and Transformations	Homework Quizzes	End of Trimester Assessment	Identify period, amplitude, phase shift, vertical shift, and horizontal shift	Apply all six trig functions; sine, cosine, tangent, secant, cosecant, co-tangent	Amplitude Phase Shift Period Vertical Asymptote Translation	Ch. 4 Sec. 2 Pgs: 154 - 162 Exercise Pgs: 162 - 165

UNIT 7 **Identities** *Pacing:1.5wks*	A1.1.7 Transform trigonometric expressions into equivalent forms using basic identities such as: $\sin^2\theta + \cos^2\theta = 1$, $\tan\theta = \sin\theta / \cos\theta$ and $\tan^2\theta + 1 = \sec^2\theta$.	Trig Identities	Homework Quizzes	End of Trimester Assessment	Identify and apply fundamental identities	Ability to simplify identities Ability to verify identities	Fundamental Identity Sum Difference Sine Cosine Tangent	Ch. 5 Sec. 1 - 4 Pgs: 186 - 216 Exercise Pgs: 234 - 236
UNIT 8 **Law of Sine** **Law of Cosine** *Pacing:1.5wks*	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 θ using the formula Area = (1/2) *a b* sin θ.	Application of Trig	Homework Quizzes	End of Trimester Assessment	Manipulate trig formulas Solve oblique triangles Use of TI-83 calculator Proportion calculations	Apply Law of Sine and Law of Cosine Solve oblique triangles using sine and cosine, and find the area of triangle	SSS SAS ASA Oblique Triangle Law of Sine Law of Cosine Ambiguous case of the law of sines	Ch. 7 Sec. 1 - 3 Pgs: 282 - 308 Exercise Pgs: 326 - 332
UNIT 9 **Inverses** *Pacing:1 week*	A2.2.4 If a function has an inverse, find the expression(s) for the inverse.	Inverses	Homework Quizzes	End of Trimester Assessment	Manipulate equations and formulas Solve for x and/or y	Calculate and find inverse function	Inverse One to One Function Horizontal Line Test	Ch. 6 Sec. 1 & 4 Pgs: 238 – 252 Pgs: 268 - 275 Exercise Pgs: 276 - 279
	A2.2.5 Write an expression for the composition of one function with another; recognize component functions when a function is a composition of other functions.	Composition	Homework Quizzes	End of Trimester Assessment	Process of what a composition is Substitution of expression for variable Two functions = composition	Show if an inverse exists	Composition	Supplemental materials needed
	A.2.2.6 Know and interpret the function notation for inverses and verify that two functions are inverses using composition.	Function Notation for Inverses	Homework Quizzes	End of Trimester Assessment	Show and verify functions are inverses	Apply inverse notation Verify functions and inverses using compositions	One to One Function	Supplemental materials needed