WSD Precalculus Curriculum Map

Course Title	Precalculus					
Author	Math Department					
Statement of Outcome	The Precalculus course includes a comprehensive review of advanced algebra concepts, a deep dive into trigonometry, and an introduction to analytic geometry, all designed to prepare students for calculus by focusing on graphing functions, solving complex equations, and applying mathematical concepts to real-world problems.					
Unit Name & Time Frame (Text: Precalculus with Trigonometry, Concepts and Applications)	Unit 1: Functions and Mathematical Models 4 weeks (Mid Sep)	Unit 2: Periodic Functions and Right Triangle Problems 4 weeks (Mid Oct)	Unit 3: Applications of Trigonometric and Circular Functions 4 weeks (Mid Nov)	Unit 6: Triangle Trigonometry 5.5 weeks (End of Jan)	Unit 7: Properties of Elementary Functions 5.5 weeks (End of March)	Unit 12: Analytic Geometry of Conic Sections and Quadric Surfaces 5.5 weeks (Mid May)
Topic(s) and driving question.	Driving Question: How can a standard function be transformed to model a real world situation? Topics: ● Dilation and Translation of Function Graphs ● Composition of Functions ● Inverse Functions	Driving Question: How can periodic functions be used to model real world repeating events? Topics: ● Identify a periodic function from its graph ● Find an angle from its measure of rotation ● Extend the definitions of Sine and Cosine for an angle ● Find the values of the six trig functions ● Inverse Trig functions	Driving Question: How can a sinusoid's amplitude, period and cycles be transformed to model a real world situation? Topics: ● Meanings of amplitude, period, phase displacement and cycle of a sinusoidal graph. ● Find the radian and the degree measures of angles ● Circular functions and their relationship to trigonometric functions ● Inverse circular relations ● Sinusoidal functions as mathematical models	Driving Question: How can vectors be used to analyze real world situations? Topics: ● Introduction to Oblique Triangles ● Law of Cosines and Sines ● Area of a Triangle using the Sine function ● Hero’s formula for finding area ● The ambiguous case (SSA) ● Vector Addition by components ● Real-world triangle problems	Driving Question: When does an exponential, power, quadratic or logarithmic function best represent a given real world situation? Topics: ● Identifying functions from graphical patterns ● Identifying functions from numerical patterns ● Properties of Logarithms ● Logarithmic Functions ● Logistic Functions for restrained growth	Driving Question: How are conic sections: ellipses, parabolas, and circles, used to analyze real world situations? Topics: ● Introduction to Conic Sections ● Cartesian Equations of the Conic Sections ● Analytic Geometry of the Conic Sections ● Quadric Surfaces
GX Focus	Persistence	Persistence	Persistence	Persistence	Persistence	Persistence

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GP- Content Indicators	WSD.HS.MR.F8: Use the composition and inverse of functions to model and solve problems. WSD.HS.MR.F9: Create and identify transformations with respect to period, amplitude, and vertical and horizontal shifts.	WSD.HS.MR.F10: Develop and use the law of sines and the law of cosines and inverse trigonometric functions.	WSD.HS.MR.F10: Develop and use the law of sines and the law of cosines and inverse trigonometric functions. WSD.HS.MR.F9: Create and identify transformations with respect to period, amplitude, and vertical and horizontal shifts.	WSD.HS.MR. F10: Develop and use the law of sines and the law of cosines and inverse trigonometric functions. WSD.HS.MR.F11: Operate with vectors in two dimensions to model and solve problems.	WSD.HS.MR.F7: Use functions (polynomial, power, rational, exponential, logarithmic, and logistic) to model and solve problems; justify results.	WSD.HS.MR.F.12: Convert between general and standard forms of equations of conic sections, identify whether an equation of a conic section describes a parabola, a circle, a non circular ellipse, or a hyperbola by examining its discriminant.
Summative Assessment Clarification:	Summative Paper Assessment	Summative Paper Assessment	Summative Paper Assessment	Summative Paper Assessment	Summative Paper Assessment	Summative Paper Assessment
Link to Unit	Unit 1	Unit 2	Unit 3	Unit 6	Unit 7	Unit 12