Unit Four Information

Curriculum Map: Law of Sine and Cosine

Content Descriptors:

Concept 1: Law of Sines
Concept 2: Law of Cosines
Concept 3: Area Formula

Content from Frameworks: Law of Sines and Cosine

Unit Length: Approximately 15 days (pacing guide)

TCSS – Accelerated GSE Pre-Calculus – Unit 4
Curriculum Map

Big Idea / Unit		***Unit Essential Questions:***
Students will be able to use and apply the law of sines, law of cosines and the area formula.		*How do you use and apply the laws and area formulas of Trigonometry?*
Prerequisites: As identified by the GSE Frameworks ✓ *calculating the area of a triangle* ✓ *solving trigonometric equations* ✓ *using inverse trigonometric functions to solve problems* ✓ *performing operations with trigonometric functions*		***Length of Unit*** ***15 Days***
Concept 1	***Concept 2***	***Concept 3***
Law of Sines	Law of Cosines	Area Formula
GSE Standards	***GSE Standards***	***GSE Standards***
MGSE9-12.G.SRT.10 Prove the Laws of Sines and Cosines and use them to solve problems. **MGSE9-12.G.SRT.11** Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).	**MGSE9-12.G.SRT.10** Prove the Laws of Sines and Cosines and use them to solve problems. **MGSE9-12.G.SRT.11** Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).	**MGSE9-12.G.SRT.9** Derive the formula A = (1/2)ab sin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.
Lesson Essential Question	***Lesson Essential Question***	***Lesson Essential Question***
How can I apply trigonometric relationships to non-right triangles? What is the least amount of information that is sufficient to find all six parts of a triangle?	How can I apply trigonometric relationships to non-right triangles? What is the least amount of information that is sufficient to find all six parts of a triangle?	How can I calculate the area of any triangle given only two sides and a non-included angle?
Vocabulary	***Vocabulary***	***Vocabulary***
Law of Sines Included Angle Oblique Triangle Vertex of a triangle Hinge Theorem (Ambiguous Case -Law of Sines)	Law of Cosines	Altitude of a triangle Heron's Formula

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Resources – Concept 1	Resources – Concept 2	Resources – Concept 3
➢ Formula Sheet ➢ Law of Sines Power Point ➢ Analysis of Trig Practice ➢ Law of Sines explanation and examples ➢ Law of Sines Word Problems ➢ Law of Sines Practice (worksheet) ➢ Ambiguous Case Law of Sines Notes and Practice ➢ Ambiguous Case Graphic Org.	➢ Law of Cosines Practice (worksheet) ➢ Law of Cosines explanation and examples	➢ Heron's Formula Problems ➢ Sine and Cosine Laws – mixed practice ➢ Law of Sines and Cosines Word Problems ➢ Law of Sines & Cosines Word Problems 2 ➢ Word Problems - Mixed Practice ➢ Review Worksheet – Law of Sines & Cosines ➢ Heron's Formula Project
Differentiated Activities Concept 1	***Differentiated Activities Concept 2***	***Differentiated Activities Concept 3***
		➢ Review Station Activity (Law of Sines & Cosines)

Unit 4 Checklist – Law of Sines and Cosines

Good luck to _____Date_____ Period___

Keep this list handy and refer to it periodically to see how you are doing. If you know how to each of these you should do well on an exam.

Unit 4 – Law of Sines and Cosines		
In this unit I :		
sort of	really	
		can verify and use the law of sines and the law of cosines.
		can apply the law of sines and the law of cosines.
		understand and apply the Law of Sines and the Law of Cosines to solve problems in the context of a real-world situation.
		can use the area formula $A = \frac{1}{2}$ ab Sin C to calculate area.
		can use Heron's Formula to calculate the area.

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