

Unit 7 Law of Sines and Law of Cosines

Content Area: **Math**
Course(s): **Accelerated PreCalculus, CP PreCalculus**
Time Period: **Marking Period 3**
Length: **2**
Status: **Published**

Unit Overview

In this unit, students will learn how to apply trigonometry to oblique triangles and vectors.

Enduring Understandings

- Students will use trigonometry to solve non-right triangles and work with vectors.

Essential Questions

How do you use trigonometry to find unknown lengths and angle measures of oblique triangles?

How do you use trigonometry to solve and find the areas of oblique triangles?

How do you represent and perform operations with vector quantities? (Optional)

How do you write a vector as the sum of two vector components? (Optional)

How do you represent complex numbers and perform operations in the complex plane? (Optional)

How do you perform operations on complex numbers using trigonometry? (Optional)

New Jersey Student Learning Standards (No CCS)

MA.N-VM.B.5a

Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as $c(\mathbf{v}_x, \mathbf{v}_{\text{subscript } y}) = (c\mathbf{v}_x, c\mathbf{v}_{\text{subscript } y})$.

MA.G-SRT.D.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.

MA.G-SRT.D.10

Prove the Laws of Sines and Cosines and use them to solve problems.

MA.G-SRT.D.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).

Formative Assessments

- Daily homework checks
- Quiz
- Chapter Test
- Exit Tickets
- Warm-ups
- WEbassigns

Summative Assessment

- Unit Test
- Unit Project

Alternate Assessments

- Modified homework
- Modified quizzes
- Modified tests
- Modified projects

Closure

- Low-Stakes Quizzes - Give a short quiz using technologies like Kahoot or a Google form.
- Have students write down three quiz questions (to ask at the beginning of the next class).
- Have students dramatize a real-life application of a skill.
- Ask a question. Give students ten seconds to confer with peers before you call on a random student to answer. Repeat.
- Have kids orally describe a concept, procedure, or skill in simple terms.
- Direct kids to raise their hands if they can answer your questions. Classmates agree (thumbs up) or disagree (thumbs down) with the response.
- Have kids create a cheat sheet of information that would be useful for a quiz on the day's topic.
- Students write notes to peers describing what they learned from them during class discussions.
- Have students fill out a checklist with the objectives for the day.
- Have students complete an exit ticket without putting their name on it. Hand back exit tickets the next day in class and have students correct as a warm up.

- Ask students to write what they learned, and any lingering questions on an "exit ticket". Before they leave class, have them put their exit tickets in a folder or bin labeled either "Got It," "More Practice, Please," or "I Need Some Help!"
- After writing down the learning outcome, ask students to take a card, circle one of the following options, and return the card to you before they leave: "Stop (I'm totally confused.)" Go (I'm ready to move on.)" or "Proceed with caution (I could use some clarification on . . .)"