Core Content

Cluster Title: Similarity, right triangles, and trigonometry.
Standard: Define trigonometric ratios and write trigonometric expressions in equivalent forms.
Concepts and Skills to Master
• Show how sine, cosine, and tangent are related using trigonometric identities. • Define secant, cosecant, and cotangent in terms of sine, cosine and tangent. • Define the six trigonometric functions using the unit circle.

Supports for Teachers

Critical Background Knowledge	
• Sine, cosine, tangent • Pythagorean Theorem	
Academic Vocabulary	
Sine, cosine, tangent, secant, cosecant, cotangent, unit circle	
Suggested Instructional Strategies	**Resources**
• Use special right triangles to find points on the unit circle and define trigonometric values. • Connect the co-function identities with congruent triangles whose non-right angles are switched.	
Sample Formative Assessment Tasks	
Skill-based Task Find a value for θ for which sin θ = cos 15° is true. Find $\cos\frac{5\pi}{3}$.	**Problem Task** Prove that sin θ = cos (90° – θ) using congruent triangles. Prove that $\left(\tan^2\theta\right)\left(\cot^2\theta\right)=1$