Geometry Concepts and Connections Unit 5: Right Triangle Trigonometry

Overview:

In this unit, students will build foundational understanding of right triangle trigonometry. Students will explore sine, cosine, and tangent through geometric contexts. Teachers should provide students with a broad range of contextual problems that offer opportunities for performing operations with trigonometric ratios in applicable geometric contexts.

Learning Targets

In Unit 5, students will:

- Build upon previous knowledge of similar triangles to explain side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trig ratios for acute angles.
- Apply trigonometric ratios and the Pythagorean Theorem to solve for side length and angles in right triangles to solve real-world problems.
- Explain and use the relationship of the sine and cosine of complementary angles.
- Verify and apply the relationship between cofunctions, $\sin(q) = \cos(90 - q)$ and $\cos(q) = \sin(90 - q)$.

Key Vocabulary: (linked to GA DOE Interactive Glossary)

Adjacent Side	Cosine	Right Angle	Trigonometric Ratio
Angle of Depression	Hypotenuse	Similar Triangles	Trigonometry
Angle of Elevation	Ninety-Degree Angle	Sine	
Complementary Angles	Opposite Side	Tangent	

Supporting Resources:

http://ctlslearn.cobbk12.org/

Trigonometry (mathsisfun.com)

https://gavirtual.instructure.com/courses/34328

Trigonometric ratios in right triangles (video) | Khan Academy

How Do You Solve a Problem Using an Angle of Elevation? | Virtual Nerd