FRANKLIN-SIMPSON HIGH SCHOOL

Course Name: Geometry **Unit Name:** **Trigonometry**

Quality Core Objectives:

Unit 12 Trigonometry		
B.1.	Mathematical Processes	a. Apply problem-solving skills (e.g., identifying irrelevant or missing information, making conjectures, extracting mathematical meaning, recognizing and performing multiple steps when needed, verifying results in the context of the problem) to the solution of real-world problems
		b. Use a variety of strategies to set up and solve increasingly complex problems
		c. Represent data, real-world situations, and solutions in increasingly complex contexts (e.g., expressions, formulas, tables, charts, graphs, relations, functions) and understand the relationships
		d. Use the language of mathematics to communicate increasingly complex ideas orally and in writing, using symbols and notations correctly
		f. Make mathematical connections among concepts, across disciplines, and in everyday experiences
		g. Demonstrate the appropriate role of technology (e.g., calculators, software programs) in mathematics (e.g., organize data, develop concepts, explore relationships, decrease time spent on computations after a skill has been established)
H.1.	Introduction to Trigonometry	a. Apply properties of 45°-45°-90° and 30°-60°-90° triangles to determine lengths of sides of triangles
		b. Find the sine, cosine, and tangent ratios of acute angles given the side lengths of right triangles
		c. Use trigonometric ratios to find the sides or angles of right triangles and to solve real-world problems (e.g., use angles of elevation and depression to find missing measures)

Purpose of the Unit: **To explore two dimensional figures and to relate the side measurements in right triangles.**

Prerequisites: **Pythagorean Theorem and Its Converse**

Daily Lesson Guide

Day	Lesson Content and Objectives	Focus Questions	Critical Thinking (High Yield / Literacy /LTF/etc.)	Engagement	Assessment and/or Accommodations
1	To use the properties of 45-45-90 and 30-60-90 triangles.	Do certain right triangles have properties that allow you to use short cuts to determine the side lengths without using the Pythagorean Thm?			
2	To use the sine, cosine, and tangent ratios to determine side lengths and angle measures in right angles.	What is the ratio of the length of the shorter leg to the length of the hypotenuse for a given right triangle?	If you know certain combinations of side lengths and angle measures of a right triangle, you can use ratios to find other side lengths and angle measures.		How can a surveyor determine angle measures? Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.

3	**To use angles of elevation and depression to solve problems.**	**How can you tell if an angle is that of elevation or depression?**	**Do airline pilots use angles of elevation and depression? When?**		
4	**Understand and apply the Law of Sines, to find unknown measurements in right and non-right triangles.**	**Lets Google…..How are triangles used in radio astronomy? Why is it called radio astronomy and what are some examples of astronomical objects?**	**If you know the measures of two angles and the length of a side, or two side lengths and the measure of a nonincluded obtuse angle, then you can find all the other measures of the triangle.**		
5	**Understand and apply the Law of Cosines.**		**If you know the measures of two side lengths and the measure of the included angle, or all three side lengths, then you can find all the other measures of the triangle.**		**Unit Test**

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