

Unit Guide

Real-Life Applications of Sine and Cosine Functions

Karen C. Brown

The Common Core Standards require that students know how to persevere in problem solving. This standard works in conjunction with the content standards. Students often learn the content objectives and lack the ability to persevere when confronted with problems they consider difficult or of little interest. They struggle with understanding how the mathematics learned in class is utilized in the world around them. The intent of this unit is to use the concepts of trigonometric functions that students learn in class and add application problems centered on these concepts both to deepen student understanding of how sine and cosine functions are utilized and modeled within the world around them and to further their knowledge of trigonometric functions enabling them to understand how mathematical concepts are applicable to their world in many different avenues and scenarios. Presented are scenarios that require deeper thought than a homework question from our text – problems that provoke students to consider the how and why of the concepts and deepen understanding beyond a mere plugging numbers into an equation in the proper places. The hope is that students will engage in the problems and persevere in finding how each scenario leads to deeper content knowledge.