## **Essential Questions**

* How can the ideas of accepted mathematical notions be extended to explain phenomena?
* How do I analyze functions with periodicity and how can I use them to model periodic phenomena?

## **Vocabulary**

| Terms | Terms | Terms |
| --- | --- | --- |
| amplitudecontinuitycosecantcotangentcoterminaldecreasingdomainend behavioreven/odd | increasing interceptsinversemaximumminimumnegative angle one-to-oneperiodphase shift | positive anglequadrantal anglerangereference anglesecantstandard positionsymmetryvertical translationzeroes |

## **Unit Topics**

### Topic A: Representations of Functions

* I can understand the definition of the unit vocabulary terms and how they are associated with the concepts of functions. (Knowledge, HSF.IF.4)

### Topic B: Trigonometric Basics

* I can define trigonometric ratios and solve problems involving right triangles. (Skill, HSG.SRT.6,8)

### Topic C: Graphing Trigonometric Functions

* I can identify the values of the Unit circle. (Knowledge, HSF.TF.1)
* I can use reference angles and coterminal angles to evaluate trig functions of any angle in standard position. (Reasoning, HSF.TF.2)
* I can identify the values of the trigonometric functions using the Unit Circle or special right triangles. (Reasoning, HSF.TF.3)
* I can identify properties of trigonometric functions and their transformations. (Reasoning, HSF.BF.3, HSF.TF.4)
* I can graph the six trigonometric functions and transformations of them. (Skill, HSF.IF.7)
* I can build a function that models a periodic relationship between two quantities. (Reasoning, HSF.BF.1, HSF.TF.5)
* I can determine a trigonometric equation analytically, graphically, and algebraically from a real world scenario. (Reasoning, SMP.4)