

# 19 Topic: Trigonometry

Content Area: **Mathematics**  
Course(s): **Algebra 2**  
Time Period: **Semester 2**  
Length: **2-3 weeks**  
Status: **Published**

## Standards

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MA.K-12.7	Look for and make use of structure.
MA.F-IF.C.7e	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.
MA.G-SRT.C.8	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
MA.F-TF.A.3	Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$ , $\pi/4$ and $\pi/6$ , and use the unit circle to express the values of sine, cosines, and tangent for $\pi - x$ , $\pi + x$ , and $2\pi - x$ in terms of their values for $x$ , where $x$ is any real number.
MA.F-TF.B.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.
MA.F-TF.B.7	Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

## Enduring Understandings

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1. Mathematics is a language consisting of symbols and rules.
2. The same mathematical ideas can be represented concretely or symbolically.
3. There can be different strategies to solve a problem, but some are more effective and efficient than others.

## Essential Questions

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1. How are triangles and trigonometric functions related?
2. How are trigonometric functions used to solve triangles?
3. Why is it important to know the relationship between a circle and a right triangle?

## Knowledge and Skills

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Define Trigonometric Terminology

Sketch Angles with Specified Rotations

Understand Co-Terminal Angles

Understand Reference Angles

Understand Coordinate Plane and Quadrants

Understand and Use Pythagorean Theorem

Understand Special Right Triangles – Derivation and Usage

Understand Trigonometry Functions – Sine, Cosine, Tangent, Secant, Cosecant, and Cotangent

## Resources

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1. McDougal/Littell - Algebra & Trigonometry Structure & Method Book 2
2. Aufmann/Barker/Lockwood - Intermediate Algebra with Applications Sixth Edition
3. Houghton/Mifflin/Harcourt - On Core Mathematics Algebra 2
4. Holt - Algebra 2 with Trigonometry
5. Larson/Boswell - Big Ideas Math: Algebra 2 Texas Edition
6. [Khan Academy](#)
7. [PurpleMath](#)
8. [KutaSoftware](#)
9. [CK-12](#)
10. [Quizlet](#)
11. [Albert I/O](#)
12. [Desmos](#)
13. [Problem Attic](#)

