Unit	Topic	Lesson	Lesson Objectives

Right Triangle Relationships

Right Triangle Relationships

Angles and Degree Measure

Convert decimal degree measures to degrees, minutes, and seconds and vice versa

Find the number of degrees in a given number or rotations

Identify angles that are conterminal with a given angle

Pythagorean Theorem

Apply the Pythagorean theorem to find side lengths of a right triangle

Solve problems using the Pythagorean theorem in modeling situations

Special Right Triangles

Solve problems involving special right triangles in modeling situations

Use properties of 45°-45°-90° and 30°-60°-90° triangles to find side lengths

Trigonometric Ratios

Apply trigonometric relationships to complementary angles to write equivalent expressions

Determine the exact values of sine, cosine, and tangent for 30°, 45°, and 60°

Identify and apply the trigonometric ratios of sine, cosine, and tangent

Trigonometric Ratios in Right Triangles

Find the values of trigonometric ratios for acute angles of right triangles

Applying Trigonometric Functions

Applying Trigonometric Functions

Right Triangles

Determine the sine, cosine, and tangent of an acute angle by using technology

Determine the sine, cosine, and tangent of an angle using right triangles

Identify sides and corresponding angles of a right triangle

Use proportions to determine side lengths of similar right triangles

Angle Relationships

Demonstrate that the sine and cosine of complementary angles are equal

Identify complementary angles

Angles of Elevation and Depression

Identify angles of elevation and depression in problem situations

Solve problems involving angles of elevation and depression

Inverse Functions

Determine the inverse sine and cosine of a number using technology

Determine the inverse tangent of a number

Unit	Topic	Lesson	Lesson Objectives

Applying Trigonometric Functions

Use trigonometry to find the measures of the sides of right triangles

Trigonometric Angles

Trigonometric Angles

Angles and Radian Measure

Change from radian measure to degree measure, and vice versa

Find the area of a sector

Find the length of an arc given the measure of the central angle

Angles of Rotation

Find coterminal and reference angles.

Find the trigonometric function values of angles in standard position.

Functions of Angles

Find values of trigonometric functions for general angles.

Use reference angles to find values of trigonometric functions.

Circular Trigonometry

Circular Trigonometry

Circular Functions

Define and use the trigonometric functions based on the unit circle.

Find the exact values of trigonometric functions of angles.

Trigonometric Functions on the Unit Circle

Find the values of six trigonometric functions of an angle in standard position given a point on its terminal side

Find the values of six trigonometric functions using the unit circle

Solving Right Triangles

Evaluate inverse trigonometric functions

Find missing angle measurements

Solve right triangles

Trigonometric Graphs

Trigonometric Graphs

The Sine Function

Graph sine curves.

Identify properties of the sine function.

The Cosine Function

Graph and write cosine functions.

Solve trigonometric equations.

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Graphs of Sine and Cosine: Sinusoids

Generate graphs of the sine and cosine functions and explore various transformations of these graphs

The Tangent Function

Graph the tangent function.

Graphs of Tangent, Cotangent, Secant, and Cosecant

Learn tangent, cotangent, secant, and cosecant functions

Translations of Trigonometric Graphs

Translations of Trigonometric Graphs

Periodic Graphs and Amplitude

State the period and amplitude (if any) given the function rule or the graph of a sine, cosine, or tangent function

Use the period and amplitude (if any) to sketch the graph of a sine, cosine, or tangent function

Periodic Graphs and Phase Shifts

State the period, amplitude vertical shift, and phase shift given the function rule or graph of a sine or cosine function

Use graphs to determine whether an equation could possibly be an identity

Amplitude and Period

Determine the amplitude of the graph of $y = a \sin(bx)$ and $y = a \cos(bx)$ using a formula

Determine the period of the graph of $y = a \sin(bx)$ and $y = a \cos(bx)$ using a formula

Inverses of Trigonometric Functions

Evaluate trigonometric expressions involving inverses.

Trigonometric Inverses and Their Graphs

Find principal values of inverse trigonometric functions

Graph inverse trigonometric functions

Wavelength and Frequency

Determine the sine model for a given frequency

Know the relationship between wavelength and frequency

Law of Sines and Cosines

Law of Sines and Cosines

The Law of Sines

Find the area of a triangle if the measures of two sides and the included angle or the measures of two angles and a side are given

Solve triangles by using the Law of Sines if the measures of two angles and a side are given

The Ambiguous Case for the Law of Sines

Determine whether a triangle has zero, one, or two solutions

Solve triangles using the Law of Sines

Unit	Topic	Lesson	Lesson Objectives

The Law of Cosines

Find the area of triangles if the measures of the three sides are given

Solve triangles by using the Law of Cosines

Trigonometric Identities

Trigonometric Identities

Trigonometric Identities

Use identities to find trigonometric values.

Use trigonometric identities to simplify expressions.

Basic Trigonometric Identities

Identify and use reciprocal identities, quotient identities, Pythagorean identities, symmetry identities, and opposite-angle identities

Verifying Trigonometric Identities

Verify trigonometric identities by transforming each side of the equation into the same form.

Verify trigonometric identities by transforming one side of an equation into the form of the other side.

Verifying Trigonometric Identities

Find numerical values of trigonometric functions

Use the basic trigonometric identities to verify other identities

Sum and Difference Identities

Use the sum and difference identities for the sine, cosine, and tangent functions

Double-Angle and Half-Angle Identities

Use the double- and half-angle identities for the sine, cosine, and tangent functions

Trigonometric Identity Application

Trigonometric Identity Application

Solving Trigonometric Equations

Solve real-world problems by using trigonometric equations.

Solve trigonometric equations algebraically and graphically.

Solving Trigonometric Equations

Solve trigonometric equations and inequalities

Normal Form of a Linear Equation

Write linear equations in normal form

Write the standard form of a linear equation given the length of the normal and the angle it makes with the x-axis

Distance from a Point to a Line

Find the distance between two parallel lines

Find the distance from a point to a line

Write equations of lines that bisect angles formed by intersecting lines.

Unit	Topic	Lesson	Lesson Objectives
Polar Coordinate System			
	Polar Coordinate System		
		Polar Coordinates	
			Convert points and equations from polar to rectangular coordinates and vice versa
		Graphs of Polar Equations	
			Graph polar equations and determine the maximum r-value and the symmetry of a graph
		Complex Numbers	
			Add, subtract, multiply, and divide complex numbers; and find complex zeros of quadratic functions
		De Moivre's Theorem and nth Roots	
			Represent complex numbers in trigonometric form and perform operations on them