



# **Praxis II Mathematics Content Knowledge (0061,0063,0064) Learning Path Coverage Map**

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## Introduction

PLATO® content has been matched to the scope of knowledge covered in the Praxis II Mathematics Content Knowledge (0061,0063,0064) Learning Path. In addition, content experts have organized PLATO content in an instructionally sound way that enhances instructional effectiveness. This document identifies PLATO instructional activities that are aligned to the Praxis II Mathematics Content Knowledge (0061,0063,0064) Learning Path.

The following PLATO courseware was used to create the Praxis II Mathematics Content Knowledge (0061,0063,0064) Learning Path:

- Algebra 1, Part 1
- Algebra 1, Part 2
- Algebra 2, Part 1
- Algebra 2, Part 2
- Applied Math
- Data Skills
- Geometry 1
- Geometry 2
- Math Problem Solving
- Trigonometry



## Praxis II Mathematics Content Knowledge (0061,0063,0064) Learning Path

### 01. Arithmetic and Basic Algebra

#### A. Structure of and Basic Operations on Numbers

##### The Additive Inverse of Integers (Alg1.1)

The Additive Inverse of Integers (Alg1.1): Tutorial

The Additive Inverse of Integers (Alg1.1): Application

The Additive Inverse of Integers (Alg1.1): Mastery Test

The Additive Inverse of Integers (Alg1.1): Offline Activity

##### Additive Inverse of an Integer (Alg1.2)

Additive Inverse of an Integer (Alg1.2): Tutorial

Additive Inverse of an Integer (Alg1.2): Application

Additive Inverse of an Integer (Alg1.2): Mastery Test

Additive Inverse of an Integer (Alg1.2): Offline Activity

#### B/C. Identify Properties of the Basic Operations, Determine Whether They Hold

##### Simplifying Algebraic Expressions (Alg2.2)

Simplifying Algebraic Expressions (Alg2.2): Tutorial

Simplifying Algebraic Expressions (Alg2.2): Application

Simplifying Algebraic Expressions (Alg2.2): Mastery Test

Simplifying Algebraic Expressions (Alg2.2): Offline Activity

#### D. Demonstrate an Understanding of the Properties of Counting Numbers

##### Odd and Even Numbers (Alg1.1)

Odd and Even Numbers (Alg1.1): Tutorial

Odd and Even Numbers (Alg1.1): Application

Odd and Even Numbers (Alg1.1): Mastery Test

Odd and Even Numbers (Alg1.1): Offline Activity

##### Prime and Composite Numbers (Alg1.1)

Prime and Composite Numbers (Alg1.1): Tutorial



Prime and Composite Numbers (Alg1.1): Application

Prime and Composite Numbers (Alg1.1): Mastery Test

Prime and Composite Numbers (Alg1.1): Offline Activity

#### E. Solve Problems

Scaling and Proportion, Part 1 (Alg1.1)

Scaling and Proportion, Part 1 (Alg1.1): Tutorial

Scaling and Proportion, Part 1 (Alg1.1): Application

Scaling and Proportion, Part 1 (Alg1.1): Mastery Test

Scaling and Proportion, Part 1 (Alg1.1): Offline Activity

Planning a Park: Geometry and Measurement: Math Problem Solving

Planning a Park: Geometry and Measurement: Math Problem Solving

Shelf Space: Geometry and Measurement: Math Problem Solving

Shelf Space: Geometry and Measurement: Math Problem Solving

Scaling and Proportion, Part 2 (Alg1.1)

Scaling and Proportion, Part 2 (Alg1.1): Tutorial

Scaling and Proportion, Part 2 (Alg1.1): Application

Scaling and Proportion, Part 2 (Alg1.1): Mastery Test

Scaling and Proportion, Part 2 (Alg1.1): Offline Activity

Solving Problems With Linear Equations in 1 Variable (Alg1.2)

Solving Problems With Linear Equations in 1 Variable (Alg1.2): Tutorial

Solving Problems With Linear Equations in 1 Variable (Alg1.2): Application

Solving Problems With Linear Equations in 1 Variable (Alg1.2): Mastery Test

Solving Problems With Linear Equations in 1 Variable (Alg1.2): Offline Activity

Visualizing Percents Greater than 100% (Alg1.1)

Visualizing Percents Greater than 100% (Alg1.1): Tutorial

Visualizing Percents Greater than 100% (Alg1.1): Application

Visualizing Percents Greater than 100% (Alg1.1): Mastery Test

Visualizing Percents Greater than 100% (Alg1.1): Offline Activity

Solving Problems with Percents (Alg1.1)

Solving Problems with Percents (Alg1.1): Tutorial

Solving Problems with Percents (Alg1.1): Application

Solving Problems with Percents (Alg1.1): Mastery Test

Solving Problems with Percents (Alg1.1): Offline Activity

Math Conversions

Math Conversions: Tutorial

Math Conversions: Application

Math Conversions: Mastery Test

Using Base, Rate, and Portion

Using Base, Rate, and Portion: Tutorial

Using Base, Rate, and Portion: Application

Using Base, Rate, and Portion: Mastery Test

Running a Business: Math Fundamentals: Math Problem Solving

Running a Business: Math Fundamentals: Math Problem Solving

Mean, Median, and Mode (Alg1.1)

Mean, Median, and Mode (Alg1.1): Tutorial

Mean, Median, and Mode (Alg1.1): Application

Mean, Median, and Mode (Alg1.1): Mastery Test

Mean, Median, and Mode (Alg1.1): Offline Activity

Solving Problems with Mean, Median, and Mode (Alg1.1)

Solving Problems with Mean, Median, and Mode (Alg1.1): Tutorial

Solving Problems with Mean, Median, and Mode (Alg1.1): Application

Solving Problems with Mean, Median, and Mode (Alg1.1): Mastery Test

Solving Problems with Mean, Median, and Mode (Alg1.1): Offline Activity

Growing Lilies: Data Skills: Math Problem Solving



Growing Lilies: Data Skills: Math Problem Solving

Making the Grade: Probability and Statistics: Math Problem Solving

Making the Grade: Probability and Statistics: Math Problem Solving

## F. Work with Algebraic Expressions, Formulas, and Equations

### Order of Operations (Alg1.1)

Order of Operations (Alg1.1): Tutorial

Order of Operations (Alg1.1): Application

Order of Operations (Alg1.1): Mastery Test

Order of Operations (Alg1.1): Offline Activity

### Expressions in 1 Variable (Alg1.1)

Expressions in 1 Variable (Alg1.1): Tutorial

Expressions in 1 Variable (Alg1.1): Application

Expressions in 1 Variable (Alg1.1): Mastery Test

Expressions in 1 Variable (Alg1.1): Offline Activity

### Expressions in 2 or More Variables (Alg1.1)

Expressions in 2 or More Variables (Alg1.1): Tutorial

Expressions in 2 or More Variables (Alg1.1): Application

Expressions in 2 or More Variables (Alg1.1): Mastery Test

Expressions in 2 or More Variables (Alg1.1): Offline Activity

### Determining the Truth Value of a Statement (Alg1.1)

Determining the Truth Value of a Statement (Alg1.1): Tutorial

Determining the Truth Value of a Statement (Alg1.1): Application

Determining the Truth Value of a Statement (Alg1.1): Mastery Test

Determining the Truth Value of a Statement (Alg1.1): Offline Activity

### Adding Monomials (Alg1.1)

Adding Monomials (Alg1.1): Tutorial

Adding Monomials (Alg1.1): Application

Adding Monomials (Alg1.1): Mastery Test

Adding Monomials (Alg1.1): Offline Activity

Adding Binomials and Monomials (Alg1.1)

Adding Binomials and Monomials (Alg1.1): Tutorial

Adding Binomials and Monomials (Alg1.1): Application

Adding Binomials and Monomials (Alg1.1): Mastery Test

Adding Binomials and Monomials (Alg1.1): Offline Activity

Subtracting Monomials (Alg1.1)

Subtracting Monomials (Alg1.1): Tutorial

Subtracting Monomials (Alg1.1): Application

Subtracting Monomials (Alg1.1): Mastery Test

Subtracting Monomials (Alg1.1): Offline Activity

Subtracting Binomials and Monomials (Alg1.1)

Subtracting Binomials and Monomials (Alg1.1): Tutorial

Subtracting Binomials and Monomials (Alg1.1): Application

Subtracting Binomials and Monomials (Alg1.1): Mastery Test

Subtracting Binomials and Monomials (Alg1.1): Offline Activity

Multiplying Binomials and Monomials (Alg1.1)

Multiplying Binomials and Monomials (Alg1.1): Tutorial

Multiplying Binomials and Monomials (Alg1.1): Application

Multiplying Binomials and Monomials (Alg1.1): Mastery Test

Multiplying Binomials and Monomials (Alg1.1): Offline Activity

Linear Equations in 1 Variable: Solving by Inspection (Alg1.1)

Linear Equations in 1 Variable: Solving by Inspection (Alg1.1): Tutorial

Linear Equations in 1 Variable: Solving by Inspection (Alg1.1): Application

Linear Equations in 1 Variable: Solving by Inspection (Alg1.1): Mastery Test

Linear Equations in 1 Variable: Solving by Inspection (Alg1.1): Offline Act.

Linear Equations in 1 Variable: Isolating the Variable (Alg1.1)

Linear Equations in 1 Variable: Isolating the Variable (Alg1.1): Tutorial

Linear Equations in 1 Variable: Isolating the Variable (Alg1.1): Application

Linear Equations in 1 Variable: Isolating the Variable (Alg1.1): Mastery Test

Linear Equations in 1 Variable: Isolating the Variable (Alg1.1): Offline Act.

Using Linear Equations to Solve Problems (Alg1.1)

Using Linear Equations to Solve Problems (Alg1.1): Tutorial

Using Linear Equations to Solve Problems (Alg1.1): Application

Using Linear Equations to Solve Problems (Alg1.1): Mastery Test

Using Linear Equations to Solve Problems (Alg1.1): Offline Activity

Solving Problems with Systems of Linear Equations (Alg1.1)

Solving Problems with Systems of Linear Equations (Alg1.1): Tutorial

Solving Problems with Systems of Linear Equations (Alg1.1): Application

Solving Problems with Systems of Linear Equations (Alg1.1): Mastery Test

Solving Problems with Systems of Linear Equations (Alg1.1): Offline Activity

Adapting and Using Formulas (Alg1.1)

Adapting and Using Formulas (Alg1.1): Tutorial

Adapting and Using Formulas (Alg1.1): Application

Adapting and Using Formulas (Alg1.1): Mastery Test

Adapting and Using Formulas (Alg1.1): Offline Activity

Value of a Polynomial (Alg1.2)

Value of a Polynomial (Alg1.2): Tutorial

Value of a Polynomial (Alg1.2): Application

Value of a Polynomial (Alg1.2): Mastery Test

Value of a Polynomial (Alg1.2): Offline Activity

Polynomial Sum (Alg1.2)

Polynomial Sum (Alg1.2): Tutorial

Polynomial Sum (Alg1.2): Application

Polynomial Sum (Alg1.2): Mastery Test

Polynomial Sum (Alg1.2): Offline Activity

Polynomial Difference (Alg1.2)

Polynomial Difference (Alg1.2): Tutorial

Polynomial Difference (Alg1.2): Application

Polynomial Difference (Alg1.2): Mastery Test

Polynomial Difference (Alg1.2): Offline Activity

Simplifying Polynomial Expressions (Alg1.2)

Simplifying Polynomial Expressions (Alg1.2): Tutorial

Simplifying Polynomial Expressions (Alg1.2): Application

Simplifying Polynomial Expressions (Alg1.2): Mastery Test

Simplifying Polynomial Expressions (Alg1.2): Offline Activity

Simple Equations in 1 Variable: Isolating the Variable (Alg1.2)

Simple Equations in 1 Variable: Isolating the Variable (Alg1.2): Tutorial

Simple Equations in 1 Variable: Isolating the Variable (Alg1.2): Application

Simple Equations in 1 Variable: Isolating the Variable (Alg1.2): Mastery Test

Simple Equations in 1 Variable: Isolating the Variable (Alg1.2): Offline Activity

More Difficult Linear Equations in 1 Variable (Alg1.2)

More Difficult Linear Equations in 1 Variable (Alg1.2): Tutorial

More Difficult Linear Equations in 1 Variable (Alg1.2): Application

More Difficult Linear Equations in 1 Variable (Alg1.2): Mastery Test

More Difficult Linear Equations in 1 Variable (Alg1.2): Offline Activity

Review: Equations and Inequalities (Alg1.2)

Review: Equations and Inequalities (Alg1.2): Tutorial

Review: Equations and Inequalities (Alg1.2): Application

Review: Equations and Inequalities (Alg1.2): Mastery Test

Review: Equations and Inequalities (Alg1.2): Offline Activity

Evaluating Rational Expressions (Alg 2.1)

Evaluating Rational Expressions (Alg 2.1): Tutorial

Evaluating Rational Expressions (Alg 2.1): Application

Evaluating Rational Expressions (Alg 2.1): Mastery Test

Evaluating Rational Expressions (Alg 2.1): Offline Activity

Evaluating Expressions with Absolute Value (Alg2.2)

Evaluating Expressions with Absolute Value (Alg2.2): Tutorial

Evaluating Expressions with Absolute Value (Alg2.2): Application

Evaluating Expressions with Absolute Value (Alg2.2): Mastery Test

Evaluating Expressions with Absolute Value (Alg2.2): Offline Activity

Bean Counting: Beginning Algebra: Math Problem Solving

Bean Counting: Beginning Algebra: Math Problem Solving

#### G. Solve and Graph Systems of Equations and Inequalities

Solving and Graphing Systems of Equations (Alg1.1)

Solving and Graphing Systems of Equations (Alg1.1): Tutorial

Solving and Graphing Systems of Equations (Alg1.1): Application

Solving and Graphing Systems of Equations (Alg1.1): Mastery Test

Solving and Graphing Systems of Equations (Alg1.1): Offline Activity

Solving Linear Systems of Equations: Graphs (Alg2.1)

Solving Linear Systems of Equations: Graphs (Alg2.1): Tutorial

Solving Linear Systems of Equations: Graphs (Alg2.1): Application

Solving Linear Systems of Equations: Graphs (Alg2.1): Mastery Test

Solving Linear Systems of Equations: Graphs (Alg2.1): Offline Activity

Solving Linear Systems of Inequalities: Graphs (Alg2.1)

Solving Linear Systems of Inequalities: Graphs (Alg2.1): Tutorial

Solving Linear Systems of Inequalities: Graphs (Alg2.1): Application

Solving Linear Systems of Inequalities: Graphs (Alg2.1): Mastery Test

Solving Linear Systems of Inequalities: Graphs (Alg2.1): Offline Activity

Solving Linear Systems of Equations: Substitution (Alg2.1)

Solving Linear Systems of Equations: Substitution (Alg2.1): Tutorial

Solving Linear Systems of Equations: Substitution (Alg2.1): Application

Solving Linear Systems of Equations: Substitution (Alg2.1): Mastery Test

Solving Linear Systems of Equations: Substitution (Alg2.1): Offline Activity

Solving Linear Systems of Equations: Addition (Alg2.1)

Solving Linear Systems of Equations: Addition (Alg2.1): Tutorial

Solving Linear Systems of Equations: Addition (Alg2.1): Application

Solving Linear Systems of Equations: Addition (Alg2.1): Mastery Test

Solving Linear Systems of Equations: Addition (Alg2.1): Offline Activity

Solving Problems with Quadratic Functions (Alg2.2)

Solving Problems with Quadratic Functions (Alg2.2): Tutorial

Solving Problems with Quadratic Functions (Alg2.2): Application

Solving Problems with Quadratic Functions (Alg2.2): Mastery Test

Solving Problems with Quadratic Functions (Alg2.2): Offline Activity

Video Rental: Intermediate Algebra: Math Problem Solving

Video Rental: Intermediate Algebra: Math Problem Solving

Running a Race: Intermediate Algebra: Math Problem Solving

Running a Race: Intermediate Algebra: Math Problem Solving

Car Rental: Advanced Algebra: Math Problem Solving

Car Rental: Advanced Algebra: Math Problem Solving

Building Boats: Advanced Algebra: Math Problem Solving

Building Boats: Advanced Algebra: Math Problem Solving

I. Present Geometric Interpretations of Algebraic Principles

Absolute Value, Inequalities, and Interval Notation (Alg2.2)

Absolute Value, Inequalities, and Interval Notation (Alg2.2): Tutorial

Absolute Value, Inequalities, and Interval Notation (Alg2.2): Application

Absolute Value, Inequalities, and Interval Notation (Alg2.2): Mastery Test

Absolute Value, Inequalities, and Interval Notation (Alg2.2): Offline Act.

Perpendicular Bisector of a Line Segment (Alg2.2)

Perpendicular Bisector of a Line Segment (Alg2.2): Tutorial

Perpendicular Bisector of a Line Segment (Alg2.2): Application

Perpendicular Bisector of a Line Segment (Alg2.2): Mastery Test

Perpendicular Bisector of a Line Segment (Alg2.2): Offline Activity

Distance between 2 Points (Alg2.2)

Distance between 2 Points (Alg2.2): Tutorial

Distance between 2 Points (Alg2.2): Application

Distance between 2 Points (Alg2.2): Mastery Test

Distance between 2 Points (Alg2.2): Offline Activity

Distance between a Point and a Line (Alg2.2)

Distance between a Point and a Line (Alg2.2): Tutorial

Distance between a Point and a Line (Alg2.2): Application

Distance between a Point and a Line (Alg2.2): Mastery Test

Distance between a Point and a Line (Alg2.2): Offline Activity

Distance and Circles (Alg2.2)

Distance and Circles (Alg2.2): Tutorial

Distance and Circles (Alg2.2): Application

Distance and Circles (Alg2.2): Mastery Test

Distance and Circles (Alg2.2): Offline Activity

Parabola and Its Intercepts (Alg2.2)

Parabola and Its Intercepts (Alg2.2): Tutorial

Parabola and Its Intercepts (Alg2.2): Application

Parabola and Its Intercepts (Alg2.2): Mastery Test

Parabola and Its Intercepts (Alg2.2): Offline Activity

Parabola and Its Vertex (Alg2.2)

Parabola and Its Vertex (Alg2.2): Tutorial

Parabola and Its Vertex (Alg2.2): Application

Parabola and Its Vertex (Alg2.2): Mastery Test

Parabola and Its Vertex (Alg2.2): Offline Activity

Ellipse (Alg2.2)

Ellipse (Alg2.2): Tutorial

Ellipse (Alg2.2): Application

Ellipse (Alg2.2): Mastery Test

Ellipse (Alg2.2): Offline Activity

Hyperbola (Alg2.2)

Hyperbola (Alg2.2): Tutorial

Hyperbola (Alg2.2): Application

Hyperbola (Alg2.2): Mastery Test

Hyperbola (Alg2.2): Offline Activity

Equations of Ellipses and Hyperbolas (Alg2.2)

Equations of Ellipses and Hyperbolas (Alg2.2): Tutorial

Equations of Ellipses and Hyperbolas (Alg2.2): Application

Equations of Ellipses and Hyperbolas (Alg2.2): Mastery Test

Equations of Ellipses and Hyperbolas (Alg2.2): Offline Activity

The Distance Formula

The Distance Formula: Tutorial

The Distance Formula: Application

The Distance Formula: Mastery Tests

The Distance Formula: Mastery Test 1

The Distance Formula: Mastery Test 2

Coordinates in Three Dimensions

Coordinates in Three Dimensions: Tutorial

Coordinates in Three Dimensions: Application

Coordinates in Three Dimensions: Mastery Test

02. Geometry

A. Solve Problems

01. parts of geometric figures

Special Angles, Part 1

Special Angles, Part 1: Tutorial

Special Angles, Part 1: Application

Special Angles, Part 1: Mastery Tests

Special Angles, Part 1: Mastery Test 1

Special Angles, Part 1: Mastery Test 2

Special Angles, Part 2

Special Angles, Part 2: Tutorial

Special Angles, Part 2: Application

Special Angles, Part 2: Mastery Tests

Special Angles, Part 2: Mastery Test 1

Special Angles, Part 2: Mastery Test 2

Congruent Triangles, Part 1

Congruent Triangles, Part 1: Tutorial

Congruent Triangles, Part 1: Application

Congruent Triangles, Part 1: Mastery Tests

Congruent Triangles, Part 1: Mastery Test 1

Congruent Triangles, Part 1: Mastery Test 2

Congruent Triangles, Part 2

Congruent Triangles, Part 2: Tutorial

Congruent Triangles, Part 2: Application

Congruent Triangles, Part 2: Mastery Test

Congruent Triangle Problems

Congruent Triangle Problems: Tutorial

Congruent Triangle Problems: Application

Congruent Triangle Problems: Mastery Test

30- to 60-Degree Right Triangles

30- to 60-Degree Right Triangles: Tutorial

30- to 60-Degree Right Triangles: Application

30- to 60-Degree Right Triangles: Mastery Test

Not Everything Is Created Equal

Not Everything Is Created Equal: Tutorial

Not Everything Is Created Equal: Application

Not Everything Is Created Equal: Mastery Test

Angles in Regular Polygons

Angles in Regular Polygons: Tutorial

Angles in Regular Polygons: Application

Angles in Regular Polygons: Mastery Test

Theorems Related to Circles

Theorems Related to Circles: Tutorial

Theorems Related to Circles: Application

Theorems Related to Circles: Mastery Test

Circles, Arcs, and Circumferences

Circles, Arcs, and Circumferences: Tutorial

Circles, Arcs, and Circumferences: Application

Circles, Arcs, and Circumferences: Mastery Tests

Circles, Arcs, and Circumferences: Mastery Test 1

Circles, Arcs, and Circumferences: Mastery Test 2

Circles, Arcs, and Circumferences: Mastery Test 3

Arcs and Chords

Arcs and Chords: Tutorial

Arcs and Chords: Application

Arcs and Chords: Mastery Test

The Length of Arcs

The Length of Arcs: Tutorial

The Length of Arcs: Application

The Length of Arcs: Mastery Test

02. geometric figures

Using Geometry

Using Geometry: Tutorial

Using Geometry: Application

Using Geometry: Mastery Tests

Using Geometry: Mastery Test 1

Using Geometry: Mastery Test 2

Using Geometry: Mastery Test 3

Using Geometry: Mastery Test 4

03. 2-dimensional and 3-dimensional figures

Using Measurement

Using Measurement: Tutorial

Using Measurement: Application

Using Measurement: Mastery Tests

Using Measurement: Mastery Test 1

Using Measurement: Mastery Test 2

C. Solve Problems Using the Properties of Geometric Figures

Parallelograms, Part 1

Parallelograms, Part 1: Tutorial

Parallelograms, Part 1: Application

Parallelograms, Part 1: Mastery Test

Parallelograms, Part 2

Parallelograms, Part 2: Tutorial

Parallelograms, Part 2: Application

Parallelograms, Part 2: Mastery Test

Rhombuses and Trapezoids

Rhombuses and Trapezoids: Tutorial

Rhombuses and Trapezoids: Application

Rhombuses and Trapezoids: Mastery Test

D. Apply the Pythagorean Theorem to Solve Problems

The Pythagorean Theorem 2

The Pythagorean Theorem 2: Tutorial

The Pythagorean Theorem 2: Application

The Pythagorean Theorem 2: Mastery Tests

The Pythagorean Theorem 2: Mastery Test 1

The Pythagorean Theorem 2: Mastery Test 2

E. Perimeter, Area/Surface Area, Volume of 2- and 3- Dimensional Figures

Area, Part 2

Area, Part 2: Tutorial

Area, Part 2: Application

Area, Part 2: Mastery Tests

Area, Part 2: Mastery Test 1

Area, Part 2: Mastery Test 2

Area, Part 2: Mastery Test 3

Area of Right Triangles and Parallelograms

Area of Right Triangles and Parallelograms: Tutorial

Area of Right Triangles and Parallelograms: Application

Area of Right Triangles and Parallelograms: Mastery Test

The Area of Circles

The Area of Circles: Tutorial

The Area of Circles: Application

The Area of Circles: Mastery Test

Area and Volume of Cylinders

Area and Volume of Cylinders: Tutorial

Area and Volume of Cylinders: Application

Area and Volume of Cylinders: Mastery Test

Area and Volume of Cones

Area and Volume of Cones: Tutorial

Area and Volume of Cones: Application

Area and Volume of Cones: Mastery Test

Area of Any Triangle

Area of Any Triangle: Tutorial

Area of Any Triangle: Application

Area of Any Triangle: Mastery Test

Area of Trapezoids and Rhombuses

Area of Trapezoids and Rhombuses: Tutorial

Area of Trapezoids and Rhombuses: Application

Area of Trapezoids and Rhombuses: Mastery Test

F. Solve Problems Involving Reflections, Rotations, and Translations

Translations

Translations: Tutorial

Translations: Application

Translations: Mastery Test

Rotations

Rotations: Tutorial

Rotations: Application

Rotations: Mastery Test

### 03. Trigonometry

#### A. Define, Use the Six Basic Trigonometric Relations Using Degrees or Radians

Radian Measure

Radian Measure: Tutorial

Radian Measure: Application 1

Radian Measure: Application 2

Radian Measure: Mastery Tests

Radian Measure: Mastery Test 1

Radian Measure: Mastery Test 2

Circular Functions

Circular Functions: Tutorial

Circular Functions: Application 1

Circular Functions: Application 2

Circular Functions: Application 3

Circular Functions: Application 4

Circular Functions: Mastery Tests

Circular Functions: Mastery Test 1

Circular Functions: Mastery Test 2

Circular Functions: Mastery Test 3

Circular Functions: Mastery Test 4

Three More Trigonometric Functions

Three More Trigonometric Functions: Tutorial

Three More Trigonometric Functions: Application

Three More Trigonometric Functions: Mastery Test

B. Know Their Graphs, and Identify Period, Amplitude, Shift, Asymptotes

Graphing Trigonometric Functions

Graphing Trigonometric Functions: Tutorial

Graphing Trigonometric Functions: Application 1

Graphing Trigonometric Functions: Application 2

Graphing Trigonometric Functions: Mastery Tests

Graphing Trigonometric Functions: Mastery Test 1

Graphing Trigonometric Functions: Mastery Test 2

C. Know and Use the Trigonometric Functions of Special Angles

Right Angle Trigonometry

Right Angle Trigonometry: Tutorial

Right Angle Trigonometry: Application 1

Right Angle Trigonometry: Application 2

Right Angle Trigonometry: Application 3

Right Angle Trigonometry: Mastery Tests

Right Angle Trigonometry: Mastery Test 1

Right Angle Trigonometry: Mastery Test 2

Right Angle Trigonometry: Mastery Test 3

D. Apply the Law of Sines and the Law of Cosines

Laws of Sines and Cosines

Laws of Sines and Cosines: Tutorial

Laws of Sines and Cosines: Application 1

Laws of Sines and Cosines: Application 2

Laws of Sines and Cosines: Application 3

Laws of Sines and Cosines: Mastery Tests

Laws of Sines and Cosines: Mastery Test 1

Laws of Sines and Cosines: Mastery Test 2

Laws of Sines and Cosines: Mastery Test 3

E. Apply the Formulas for the Trigonometric Functions in Terms of X and Y

Trigonometric Identities II

Trigonometric Identities II: Tutorial

Trigonometric Identities II: Application 1

Trigonometric Identities II: Application 2

Trigonometric Identities II: Mastery Tests

Trigonometric Identities II: Mastery Test 1

Trigonometric Identities II: Mastery Test 2

F. Prove Identities Using the Basic Trigonometric Identities

Trigonometric Identities of a Single Variable

Trigonometric Identities of a Single Variable: Tutorial

Trigonometric Identities of a Single Variable: Application 1

Trigonometric Identities of a Single Variable: Application 2

Trigonometric Identities of a Single Variable: Application 3

Trigonometric Identities of a Single Variable: Mastery Tests

Trigonometric Identities of a Single Variable: Mastery Test 1

Trigonometric Identities of a Single Variable: Mastery Test 2

Trigonometric Identities of a Single Variable: Mastery Test 3

G. Solve Trigonometric Equations and Inequalities

Trigonometric Equations

Trigonometric Equations: Tutorial

Trigonometric Equations: Application 1

Trigonometric Equations: Application 2

Trigonometric Equations: Application 3

Trigonometric Equations: Mastery Tests

Trigonometric Equations: Mastery Test 1

Trigonometric Equations: Mastery Test 2

Trigonometric Equations: Mastery Test 3

#### H. Convert Between the Rectangular and Polar Coordinate Systems

Polar Coordinates

Polar Coordinates: Tutorial

Polar Coordinates: Application 1

Polar Coordinates: Application 2

Polar Coordinates: Application 3

Polar Coordinates: Application 4

Polar Coordinates: Mastery Tests

Polar Coordinates: Mastery Test 1

Polar Coordinates: Mastery Test 2

Polar Coordinates: Mastery Test 3

Polar Coordinates: Mastery Test 4

#### 04. Analytic Geometry

##### A. Determine the Equations of Lines and Planes

Saving the Birds: Advanced Algebra: Math Problem Solving

Saving the Birds: Advanced Algebra: Math Problem Solving

Equations, Graphs, Slopes, and y-Intercepts (Alg1.1)

Equations, Graphs, Slopes, and y-Intercepts (Alg1.1): Tutorial

Equations, Graphs, Slopes, and y-Intercepts (Alg1.1): Application

Equations, Graphs, Slopes, and y-Intercepts (Alg1.1): Mastery Test

Equations, Graphs, Slopes, and y-Intercepts (Alg1.1): Offline Activity

Finding the Slope and y-Intercept from an Equation (Alg2.1)

Finding the Slope and y-Intercept from an Equation (Alg2.1): Tutorial

Finding the Slope and y-Intercept from an Equation (Alg2.1): Application

Finding the Slope and y-Intercept from an Equation (Alg2.1): Mastery Test

Finding the Slope and y-Intercept from an Equation (Alg2.1): Offline Activity

Writing Equations in Slope-Intercept Form (Alg2.1)

Writing Equations in Slope-Intercept Form (Alg2.1): Tutorial

Writing Equations in Slope-Intercept Form (Alg2.1): Application

Writing Equations in Slope-Intercept Form (Alg2.1): Mastery Test

Writing Equations in Slope-Intercept Form (Alg2.1): Offline Activity

Equations of Parallel or Perpendicular Lines (Alg2.1)

Equations of Parallel or Perpendicular Lines (Alg2.1): Tutorial

Equations of Parallel or Perpendicular Lines (Alg2.1): Application

Equations of Parallel or Perpendicular Lines (Alg2.1): Mastery Test

Equations of Parallel or Perpendicular Lines (Alg2.1): Offline Activity

Review: Graphs (Alg2.1)

Review: Graphs (Alg2.1): Tutorial

Review: Graphs (Alg2.1): Application

Review: Graphs (Alg2.1): Mastery Test

Review: Graphs (Alg2.1): Offline Activity

Point-Slope and Slope-Intercept Forms of Equations (Alg2.2)

Point-Slope and Slope-Intercept Forms of Equations (Alg2.2): Tutorial

Point-Slope and Slope-Intercept Forms of Equations (Alg2.2): Application

Point-Slope and Slope-Intercept Forms of Equations (Alg2.2): Mastery Test

Point-Slope and Slope-Intercept Forms of Equations (Alg2.2): Offline Activity

Equation of a Line Given a Point and Parallel Line (Alg2.2)

Equation of a Line Given a Point and Parallel Line (Alg2.2): Tutorial

Equation of a Line Given a Point and Parallel Line (Alg2.2): Application

Equation of a Line Given a Point and Parallel Line (Alg2.2): Mastery Test

Equation of a Line Given a Point and Parallel Line (Alg2.2): Offline Activity

Equation of a Line Given a Point and Perpendicular Line (Alg2.2)

Equation of a Line Given a Point and Perpendicular Line (Alg2.2): Tutorial

Equation of a Line Given a Point and Perpendicular Line (Alg2.2): Application

Equation of a Line Given a Point and Perpendicular Line (Alg2.2): Mastery Test

Equation of a Line Given a Point and Perpendicular Line (Alg2.2): Offline Act.

Perpendicular Bisector of a Line Segment (Alg2.2)

Perpendicular Bisector of a Line Segment (Alg2.2): Tutorial

Perpendicular Bisector of a Line Segment (Alg2.2): Application

Perpendicular Bisector of a Line Segment (Alg2.2): Mastery Test

Perpendicular Bisector of a Line Segment (Alg2.2): Offline Activity

## B. Make Calculations in 2-Space or 3-Space

Absolute Value, Inequalities, and Interval Notation (Alg2.2)

Absolute Value, Inequalities, and Interval Notation (Alg2.2): Tutorial

Absolute Value, Inequalities, and Interval Notation (Alg2.2): Application

Absolute Value, Inequalities, and Interval Notation (Alg2.2): Mastery Test

Absolute Value, Inequalities, and Interval Notation (Alg2.2): Offline Act.

Perpendicular Bisector of a Line Segment (Alg2.2)

Perpendicular Bisector of a Line Segment (Alg2.2): Tutorial

Perpendicular Bisector of a Line Segment (Alg2.2): Application

Perpendicular Bisector of a Line Segment (Alg2.2): Mastery Test

Perpendicular Bisector of a Line Segment (Alg2.2): Offline Activity

Distance between 2 Points (Alg2.2)

Distance between 2 Points (Alg2.2): Tutorial

Distance between 2 Points (Alg2.2): Application

Distance between 2 Points (Alg2.2): Mastery Test

Distance between 2 Points (Alg2.2): Offline Activity

Distance between a Point and a Line (Alg2.2)

Distance between a Point and a Line (Alg2.2): Tutorial

Distance between a Point and a Line (Alg2.2): Application

Distance between a Point and a Line (Alg2.2): Mastery Test

Distance between a Point and a Line (Alg2.2): Offline Activity

The Distance Formula

The Distance Formula: Tutorial

The Distance Formula: Application

The Distance Formula: Mastery Tests

The Distance Formula: Mastery Test 1

The Distance Formula: Mastery Test 2

Coordinates in Three Dimensions

Coordinates in Three Dimensions: Tutorial

Coordinates in Three Dimensions: Application

Coordinates in Three Dimensions: Mastery Test

C. Translate Between Geometric Definition of a Conic Section and Its Equation

Parabola and Its Intercepts (Alg2.2)

Parabola and Its Intercepts (Alg2.2): Tutorial

Parabola and Its Intercepts (Alg2.2): Application

Parabola and Its Intercepts (Alg2.2): Mastery Test

Parabola and Its Intercepts (Alg2.2): Offline Activity

Ellipse (Alg2.2)

Ellipse (Alg2.2): Tutorial

Ellipse (Alg2.2): Application

Ellipse (Alg2.2): Mastery Test

Ellipse (Alg2.2): Offline Activity

Hyperbola (Alg2.2)

Hyperbola (Alg2.2): Tutorial

Hyperbola (Alg2.2): Application

Hyperbola (Alg2.2): Mastery Test

Hyperbola (Alg2.2): Offline Activity

Equations of Ellipses and Hyperbolas (Alg2.2)

Equations of Ellipses and Hyperbolas (Alg2.2): Tutorial

Equations of Ellipses and Hyperbolas (Alg2.2): Application

Equations of Ellipses and Hyperbolas (Alg2.2): Mastery Test

Equations of Ellipses and Hyperbolas (Alg2.2): Offline Activity

## 05. Functions and Their Graphs

### A. Work with Functions and Their Graphs, Including Functions Given as Mappings

Defining a Function with Its Rule (Alg2.2)

Defining a Function with Its Rule (Alg2.2): Tutorial

Defining a Function with Its Rule (Alg2.2): Application

Defining a Function with Its Rule (Alg2.2): Mastery Test

Defining a Function with Its Rule (Alg2.2): Offline Activity

Finding Values of a Function Using Its Rule (Alg2.2)

Finding Values of a Function Using Its Rule (Alg2.2): Tutorial

Finding Values of a Function Using Its Rule (Alg2.2): Application

Finding Values of a Function Using Its Rule (Alg2.2): Mastery Test

Finding Values of a Function Using Its Rule (Alg2.2): Offline Activity

### B. Given an Equation, Graph It; Given a Graph, Determine an Equation for It

Video Rental: Intermediate Algebra: Math Problem Solving

Video Rental: Intermediate Algebra: Math Problem Solving

Graphing Linear Equations in 2 Variables (Alg1.1)

Graphing Linear Equations in 2 Variables (Alg1.1): Tutorial

Graphing Linear Equations in 2 Variables (Alg1.1): Application

Graphing Linear Equations in 2 Variables (Alg1.1): Mastery Test

Graphing Linear Equations in 2 Variables (Alg1.1): Offline Activity

Graphs, Slopes, and y-Intercepts (Alg1.1)

Graphs, Slopes, and y-Intercepts (Alg1.1): Tutorial

Graphs, Slopes, and y-Intercepts (Alg1.1): Application

Graphs, Slopes, and y-Intercepts (Alg1.1): Mastery Test

Graphs, Slopes, and y-Intercepts (Alg1.1): Offline Activity

Graphing a Linear Equation in 2 Variables (Alg2.1)

Graphing a Linear Equation in 2 Variables (Alg2.1): Tutorial

Graphing a Linear Equation in 2 Variables (Alg2.1): Application

Graphing a Linear Equation in 2 Variables (Alg2.1): Mastery Test

Graphing a Linear Equation in 2 Variables (Alg2.1): Offline Activity

Using the Slope and y-Intercept to Graph a Line (Alg2.1)

Using the Slope and y-Intercept to Graph a Line (Alg2.1): Tutorial

Using the Slope and y-Intercept to Graph a Line (Alg2.1): Application

Using the Slope and y-Intercept to Graph a Line (Alg2.1): Mastery Test

Using the Slope and y-Intercept to Graph a Line (Alg2.1): Offline Activity

Identifying Graphs from Their Equations (Alg2.1)

Identifying Graphs from Their Equations (Alg2.1): Tutorial

Identifying Graphs from Their Equations (Alg2.1): Application

Identifying Graphs from Their Equations (Alg2.1): Mastery Test

Identifying Graphs from Their Equations (Alg2.1): Offline Activity

Review: Graphs (Alg2.1)

Review: Graphs (Alg2.1): Tutorial

Review: Graphs (Alg2.1): Application



Review: Graphs (Alg2.1): Mastery Test

Review: Graphs (Alg2.1): Offline Activity

### C. Determine Properties of a Function

Functions (Alg1.1)

Functions (Alg1.1): Tutorial

Functions (Alg1.1): Application

Functions (Alg1.1): Mastery Test

Functions (Alg1.1): Offline Activity

Parabola and Its Intercepts (Alg2.2)

Parabola and Its Intercepts (Alg2.2): Tutorial

Parabola and Its Intercepts (Alg2.2): Application

Parabola and Its Intercepts (Alg2.2): Mastery Test

Parabola and Its Intercepts (Alg2.2): Offline Activity

Parabola and Its Vertex (Alg2.2)

Parabola and Its Vertex (Alg2.2): Tutorial

Parabola and Its Vertex (Alg2.2): Application

Parabola and Its Vertex (Alg2.2): Mastery Test

Parabola and Its Vertex (Alg2.2): Offline Activity

### D. Algebraic, Trigonometric, Logarithmic, and Exponential Functions

Saving the Birds: Advanced Algebra: Math Problem Solving

Saving the Birds: Advanced Algebra: Math Problem Solving

Composite Functions (Alg2.2)

Composite Functions (Alg2.2): Tutorial

Composite Functions (Alg2.2): Application

Composite Functions (Alg2.2): Mastery Test

Composite Functions (Alg2.2): Offline Activity

Inverse of a Function (Alg2.2)

Inverse of a Function (Alg2.2): Tutorial

Inverse of a Function (Alg2.2): Application

Inverse of a Function (Alg2.2): Mastery Test

Inverse of a Function (Alg2.2): Offline Activity

Properties of Logarithmic Functions (Alg2.2)

Properties of Logarithmic Functions (Alg2.2): Tutorial

Properties of Logarithmic Functions (Alg2.2): Application

Properties of Logarithmic Functions (Alg2.2): Mastery Test

Properties of Logarithmic Functions (Alg2.2): Offline Activity

Solving Problems: Exponential and Logarithmic (Alg2.2)

Solving Problems: Exponential and Logarithmic (Alg2.2): Tutorial

Solving Problems: Exponential and Logarithmic (Alg2.2): Application

Solving Problems: Exponential and Logarithmic (Alg2.2): Mastery Test

Solving Problems: Exponential and Logarithmic (Alg2.2): Offline Activity

E. Find the Inverse of One-to-One Functions and Know Why They Have Inverses

Inverse of a Function (Alg2.2)

Inverse of a Function (Alg2.2): Tutorial

Inverse of a Function (Alg2.2): Application

Inverse of a Function (Alg2.2): Mastery Test

Inverse of a Function (Alg2.2): Offline Activity

Determining if a Function Has an Inverse (Alg2.2)

Determining if a Function Has an Inverse (Alg2.2): Tutorial

Determining if a Function Has an Inverse (Alg2.2): Application

Determining if a Function Has an Inverse (Alg2.2): Mastery Test

Determining if a Function Has an Inverse (Alg2.2): Offline Activity

06. Probability and Statistics

A. Organize Data Using Graphs

Planning a Playground: Data Skills: Math Problem Solving

Planning a Playground: Data Skills: Math Problem Solving

Saving the Birds: Advanced Algebra: Math Problem Solving

Saving the Birds: Advanced Algebra: Math Problem Solving

Selecting Graphs and Charts

Selecting Graphs and Charts: Tutorial

Selecting Graphs and Charts: Application

Selecting Graphs and Charts: Mastery Test

E. Find and Know the Appropriate Uses of Common Measures of Dispersion

Statistics for Quality: Probability and Statistics: Math Problem Solving

Statistics for Quality: Probability and Statistics: Math Problem Solving

07. Discrete Mathematics

D. Perform Elementary Operations on Sets

Basic Set Concepts: Elements in a Set (Alg1.2)

Basic Set Concepts: Elements in a Set (Alg1.2): Tutorial

Basic Set Concepts: Elements in a Set (Alg1.2): Application

Basic Set Concepts: Elements in a Set (Alg1.2): Mastery Test

Basic Set Concepts: Elements in a Set (Alg1.2): Offline Activity

Basic Set Concepts: Finite or Infinite (Alg1.2)

Basic Set Concepts: Finite or Infinite (Alg1.2): Tutorial

Basic Set Concepts: Finite or Infinite (Alg1.2): Application

Basic Set Concepts: Finite or Infinite (Alg1.2): Mastery Test

Basic Set Concepts: Finite or Infinite (Alg1.2): Offline Activity

Basic Set Concepts: Subsets (Alg1.2)

Basic Set Concepts: Subsets (Alg1.2): Tutorial

Basic Set Concepts: Subsets (Alg1.2): Application

Basic Set Concepts: Subsets (Alg1.2): Mastery Test

Basic Set Concepts: Subsets (Alg1.2): Offline Activity

Basic Set Concepts: Roster and Set-builder Forms (Alg1.2)

Basic Set Concepts: Roster and Set-builder Forms (Alg1.2): Tutorial

Basic Set Concepts: Roster and Set-builder Forms (Alg1.2): Application

Basic Set Concepts: Roster and Set-builder Forms (Alg1.2): Mastery Test

Basic Set Concepts: Roster and Set-builder Forms (Alg1.2): Offline Activity

Union of Sets (Alg1.2)

Union of Sets (Alg1.2): Tutorial

Union of Sets (Alg1.2): Application

Union of Sets (Alg1.2): Mastery Test

Union of Sets (Alg1.2): Offline Activity

Intersection of Sets (Alg1.2)

Intersection of Sets (Alg1.2): Tutorial

Intersection of Sets (Alg1.2): Application

Intersection of Sets (Alg1.2): Mastery Test

Intersection of Sets (Alg1.2): Offline Activity

E. Solve Basic Problems Involving Permutations and Combinations

Multiplication Principle of Counting (Alg2.1)

Multiplication Principle of Counting (Alg2.1): Tutorial

Multiplication Principle of Counting (Alg2.1): Application

Multiplication Principle of Counting (Alg2.1): Mastery Test

Multiplication Principle of Counting (Alg2.1): Offline Activity

Review: Probability (Alg2.1)

Review: Probability (Alg2.1): Tutorial

Review: Probability (Alg2.1): Application

Review: Probability (Alg2.1): Mastery Test

Review: Probability (Alg2.1): Offline Activity

## J. Solve Simple Linear Programming Problems

Video Rental: Intermediate Algebra: Math Problem Solving

Video Rental: Intermediate Algebra: Math Problem Solving

Solving Problems with Linear Systems (Alg2.1)

Solving Problems with Linear Systems (Alg2.1): Tutorial

Solving Problems with Linear Systems (Alg2.1): Application

Solving Problems with Linear Systems (Alg2.1): Mastery Test

Solving Problems with Linear Systems (Alg2.1): Offline Activity

## 08. Linear Algebra

### D. Use Matrix Techniques to Solve Systems of Linear Equations

Solving Linear Systems of Equations: Matrices 1 (Alg2.1)

Solving Linear Systems of Equations: Matrices 1 (Alg2.1): Tutorial

Solving Linear Systems of Equations: Matrices 1 (Alg2.1): Application

Solving Linear Systems of Equations: Matrices 1 (Alg2.1): Mastery Test

Solving Linear Systems of Equations: Matrices 1 (Alg2.1): Offline Activity

Solving Linear Systems of Equations: Matrices 2 (Alg2.1)

Solving Linear Systems of Equations: Matrices 2 (Alg2.1): Tutorial

Solving Linear Systems of Equations: Matrices 2 (Alg2.1): Application

Solving Linear Systems of Equations: Matrices 2 (Alg2.1): Mastery Test

Solving Linear Systems of Equations: Matrices 2 (Alg2.1): Offline Activity

Review: Linear Systems (Alg2.1)

Review: Linear Systems (Alg2.1): Tutorial

Review: Linear Systems (Alg2.1): Application

Review: Linear Systems (Alg2.1): Mastery Test

Review: Linear Systems (Alg2.1): Offline Activity

## 09. Mathematical Reasoning and Modeling

### A. Develop a Mathematical Model

Saving the Birds: Advanced Algebra: Math Problem Solving

Saving the Birds: Advanced Algebra: Math Problem Solving

## B. Determine Appropriate Problem Solving Strategies

Postulates and Theorems

Postulates and Theorems: Tutorial

Postulates and Theorems: Application

Postulates and Theorems: Mastery Test

Video Rental: Intermediate Algebra: Math Problem Solving

Video Rental: Intermediate Algebra: Math Problem Solving

## C. Recognize the Reasonableness of Results

Using Quadratic Equations to Solve Problems (Alg1.1)

Using Quadratic Equations to Solve Problems (Alg1.1): Tutorial

Using Quadratic Equations to Solve Problems (Alg1.1): Application

Using Quadratic Equations to Solve Problems (Alg1.1): Mastery Test

Using Quadratic Equations to Solve Problems (Alg1.1): Offline Activity

Literal Equations (Alg1.1)

Literal Equations (Alg1.1): Tutorial

Literal Equations (Alg1.1): Application

Literal Equations (Alg1.1): Mastery Test

Literal Equations (Alg1.1): Offline Activity

## D. Estimate Answers

Using Basic Number Ideas (Alg1.1)

Using Basic Number Ideas (Alg1.1): Tutorial

Using Basic Number Ideas (Alg1.1): Application

Using Basic Number Ideas (Alg1.1): Mastery Test

Using Basic Number Ideas (Alg1.1): Offline Activity

Estimation Basics (Alg1.1)



Estimation Basics (Alg1.1): Tutorial

Estimation Basics (Alg1.1): Application

Estimation Basics (Alg1.1): Mastery Test

Estimation Basics (Alg1.1): Offline Activity

#### E. Determine Accuracy of an Estimate by Analyzing Roundoff and Truncation Errors

Building a Highway: Math Fundamentals: Math Problem Solving

Building a Highway: Math Fundamentals: Math Problem Solving

Tunnel Through Bald Mountain: Beginning Algebra: Math Problem Solving

Tunnel Through Bald Mountain: Beginning Algebra: Math Problem Solving

Mental Math with Whole Numbers and Decimals (Alg1.1)

Mental Math with Whole Numbers and Decimals (Alg1.1): Tutorial

Mental Math with Whole Numbers and Decimals (Alg1.1): Application

Mental Math with Whole Numbers and Decimals (Alg1.1): Mastery Test

Mental Math with Whole Numbers and Decimals (Alg1.1): Offline Activity

#### Estimating

Estimating: Tutorial

Estimating: Application

Estimating: Mastery Test