



# The Correlation of PLATO® Curricula to West Virginia Content Standards and Objectives

## Mathematics

November 5, 2008

### INTRODUCTION

PLATO Learning Inc. combines PLATO computer-assisted instruction into a flexible integrated learning system to enhance instructional effectiveness in education programs. This document identifies PLATO instructional activities that correlate to the West Virginia Content Standards and Objectives, Mathematics, Grades 09-12. URL: <http://wvde.state.wv.us/csos/>.

It is recommended that instructors review the correlation in order to fine-tune the activity to fit their educational environment. Modules may be added or removed; Web sites and offline activities may also be incorporated to enhance the learning path.

The following PLATO courseware was used in this correlation report:

- PLATO® Algebra 1, Part 1**
- PLATO® Algebra 1, Part 2**
- PLATO® Algebra 2, Part 1**
- PLATO® Algebra 2, Part 2**
- PLATO® Applied Mathematics**
- PLATO® Foundational Mathematics**
- PLATO® Geometry and Measurement 1**
- PLATO® Geometry and Measurement 2**
- PLATO® Math Problem Solving**
- PLATO® Quality Fundamentals**
- PLATO® Trigonometry**

**PLATO Learning, Inc. looks forward to supporting your initiatives in providing successful educational programs using PLATO® computer-based lessons.**

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## Algebra I

### Standard 2: Algebra

**M.O.A1.2.01** formulate algebraic expressions for use in equations and inequalities that require planning to accurately model real-world problems.

**PLATO® Math Problem Solving**

**Beginning Algebra**

**Math Problem Solving: Bean-Counting**

**Intermediate Algebra**

**Math Problem Solving: Video Rental**

**Math Problem Solving: Running a Race**

**Advanced Algebra**

**Math Problem Solving: Car Rental**

**Math Problem Solving: Building Boats**

**PLATO® Algebra I, Part I**

**Basic Number Ideas (Alg 1.1)**

**Using Basic Number Ideas (Alg 1.1)**

**Math Sentences (Alg 1.1)**

**Expressions in 1 Variable (Alg 1.1)**

**Expressions in 2 or More Variables (Alg 1.1)**

**Using Linear Equations to Solve Problems (Alg 1.1)**

**PLATO® Algebra I, Part 2**

**Equations and Inequalities (Alg 1.2)**

**Simple Equations in 1 Variable: Using Inspection (Alg 1.2)**

**Simple Equations in 1 Variable: Isolating the Variable (Alg 1.2)**

**M.O.A1.2.02** create and solve multi-step linear equations, absolute value equations, and linear inequalities in one variable, (with and without technology); apply skills toward solving practical problems such as distance, mixtures or motion and judge the reasonableness of solutions.

**PLATO® Math Problem Solving**

**Beginning Algebra**

**Math Problem Solving: Plan for Fishing Trip**

**Intermediate Algebra**

**Math Problem Solving: Video Rental**

**Math Problem Solving: Running a Race**

**Advanced Algebra**

**Math Problem Solving: Car Rental**

**Math Problem Solving: Building Boats**

**Math Problem Solving: Saving the Birds**

**PLATO® Algebra I, Part I**

**Math Sentences (Alg 1.1)**

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Linear Inequalities in 1 Variable, Part 1 (Alg 1.1)  
Linear Inequalities in 1 Variable, Part 2 (Alg 1.1)  
More Difficult Linear Inequalities in 1 Variable (Alg 1.1)  
Using Linear Equations to Solve Problems (Alg 1.1)

Equations and Formulas (Alg 1.1)  
Literal Equations (Alg 1.1)  
Introduction to Functions (Alg 1.1)  
Interpreting Graphs to Solve Problems (Alg 1.1)

**PLATO® Algebra 1, Part 2**  
Equations and Inequalities (Alg 1.2)  
More Difficult Linear Equations in 1 Variable (Alg 1.2)  
Equations with Absolute Values (Alg 1.2)  
Solving and Graphing Equations in 1 Variable (Alg 1.2)  
Solving Problems with Linear Equations in 1 Variable (Alg 1.2)  
Linear Inequalities in 1 Variable, Part 1 (Alg 1.2)  
Linear Inequalities in 1 Variable, Part 2 (Alg 1.2)  
Linear Inequalities in 1 Variable, Part 3 (Alg 1.2)  
Review: Equations and Inequalities (Alg 1.2)

**PLATO® Algebra 2, Part 2**  
Special Equations and Inequalities (Alg 2.2)  
Graphing Linear Inequalities in 1 Variable (Alg 2.2)  
Graphing with Restrictions on the Variable (Alg 2.2)

Functions and their Graphs (Alg 2.2)  
Solving Problems with Linear Functions (Alg 2.2)

**M.O.A1.2.03 evaluate data provided, given a real-world situation, select an appropriate literal equation and solve for a needed variable.**

**PLATO® Math Problem Solving**  
Advanced Algebra  
Math Problem Solving: Building Boats

**PLATO® Algebra 1, Part 1**  
Equations and Formulas (Alg 1.1)  
Literal Equations (Alg 1.1)  
Adapting and Using Formulas (Alg 1.1)

**M.O.A1.2.04 develop and test hypotheses to derive the laws of exponents and use them to perform operations on expressions with integral exponents.**

**PLATO® Algebra 1, Part 1**  
Basic Number Ideas (Alg 1.1)  
Exponents: Product Rule (Alg 1.1)  
Exponents: Power Rule (Alg 1.1)

**Math Sentences (Alg 1.1)**  
Multiplying Monomials (Alg 1.1)  
Dividing Monomials (Alg 1.1)



**PLATO® Algebra 1, Part 2**

**Sets and Numbers (Alg 1.2)**

**Positive and Negative Exponents (Alg 1.2)**

**Integer Exponents and the Product Rule (Alg 1.2)**

**Integer Exponents and the Quotient Rule (Alg 1.2)**

**Integer Exponents and the Power Rule, Part 1 (Alg 1.2)**

**Integer Exponents and the Power Rule, Part 2 (Alg 1.2)**

**Review: Exponents and Radicals (Alg 1.2)**

**Polynomials and Factoring (Alg 1.2)**

**Monomial Product (Alg 1.2)**

**Monomial Quotient (Alg 1.2)**

**PLATO® Algebra 2, Part 2**

**Numbers and their Properties (Alg 2.2)**

**Rules for Exponents and Radicals (Alg 2.2)**

**M.O.A1.2.05 analyze a given set of data and prove the existence of a pattern numerically, algebraically and graphically, write equations from the patterns and make inferences and predictions based on observing the pattern.**

**PLATO® Math Problem Solving**

**Beginning Algebra**

**Math Problem Solving: Plan for Fishing Trip**

**Math Problem Solving: Tunnel through Bald Mountain**

**Math Problem Solving: Bean-Counting**

**Intermediate Algebra**

**Math Problem Solving: Video Rental**

**Math Problem Solving: Running a Race**

**Advanced Algebra**

**Math Problem Solving: Car Rental**

**Math Problem Solving: Building Boats**

**Math Problem Solving: Saving the Birds**

**PLATO® Algebra 1, Part 1**

**Basic Number Ideas (Alg 1.1)**

**Using Basic Number Ideas (Alg 1.1)**

**Equations and Formulas (Alg 1.1)**

**Literal Equations (Alg 1.1)**

**Introduction to Functions (Alg 1.1)**

**Patterns and Sequences (Alg 1.1)**

**Functions (Alg 1.1)**

**Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**

**Linear Patterns (Alg 1.1)**

**PLATO® Algebra 1, Part 2**

**Equations and Inequalities (Alg 1.2)**

**Solving Problems with Linear Equations in 1 Variable (Alg 1.2)**

**PLATO® Algebra 2, Part 2**

**Functions and their Graphs (Alg 2.2)**

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Defining a Function with Its Rule (Alg 2.2)  
Equations and Graphs of Functions, Part 2 (Alg 2.2)  
Translations and Transformations (Alg 2.2)  
Composite Functions (Alg 2.2)  
Solving Problems with Linear Functions (Alg 2.2)

**M.O.A1.2.06 determine the slope of a line through a variety of strategies (e.g. given an equation or graph).**

**PLATO® Algebra 1, Part 1**  
Introduction to Functions (Alg 1.1)  
Graphs, Slopes, and y-Intercepts (Alg 1.1)  
Equations, Graphs, Slopes, and y-Intercepts (Alg 1.1)

**PLATO® Algebra 2, Part 1**  
Graphs and Linear Equations (Alg 2.1)  
Slope of a Line from 2 Points (Alg 2.1)  
Using the Slope and y-Intercept to graph a Line (Alg 2.1)  
Finding the Slope and y-Intercept from an Equation (Alg 2.1)  
Review: Graphs (Alg 2.1)

**PLATO® Algebra 2, Part 2**  
Coordinates and Curves (Alg 2.2)  
Calculating the Slope of a Line (Alg 2.2)  
Point-Slope and Slope-Intercept Forms of Equations (Alg 2.2)

**M.O.A1.2.07 analyze situations and solve problems by determining the equation of a line given a graph of a line, two points on the line, the slope and a point, or the slope and y intercept.**

**PLATO® Math Problem Solving**  
Intermediate Algebra  
Math Problem Solving: Video Rental

Advanced Algebra  
Math Problem Solving: Saving the Birds

**PLATO® Algebra 1, Part 1**  
Graphing Basics (Alg 1.1)  
Graphing Linear Equations in 2 Variables (Alg 1.1)

Introduction to Functions (Alg 1.1)  
Graphs, Slopes, and y-Intercepts (Alg 1.1)  
Equations, Graphs, Slopes, and y-Intercepts (Alg 1.1)

**PLATO® Algebra 2, Part 1**  
Graphs and Linear Equations (Alg 2.1)  
Graphing a Linear Equation in 2 Variables (Alg 2.1)  
The y-Intercept of a Line (Alg 2.1)  
Using the Slope and y-Intercept to graph a Line (Alg 2.1)  
Finding the Slope and y-Intercept from an Equation (Alg 2.1)  
Writing Equations in Slope-Intercept Form (Alg 2.1)  
Identifying Graphs from Their Equations (Alg 2.1)  
Equations of Parallel or Perpendicular Lines (Alg 2.1)  
Review: Graphs (Alg 2.1)



**PLATO® Algebra 2, Part 2**

**Coordinates and Curves (Alg 2.2)**

**Point-Slope and Slope-Intercept Forms of Equations (Alg 2.2)**

**Equation of a Line Given a Point and Parallel Line (Alg 2.2)**

**Equation of a Line Given a Point and Perpendicular Line (Alg 2.2)**

**Perpendicular Bisector of a Line Segment (Alg 2.2)**

**M.O.AI.2.08 extrapolate data represented by graphs, tables and formulas to make inferences and predictions on rate of change (slope) and justify when communicating results within a project based investigation.**

**PLATO® Math Problem Solving**

**Data Skills**

**Math Problem Solving: Planning a Playground**

**Math Problem Solving: Growing Lilies**

**Beginning Algebra**

**Math Problem Solving: Bean-Counting**

**Intermediate Algebra**

**Math Problem Solving: Video Rental**

**Advanced Algebra**

**Math Problem Solving: Building Boats**

**Math Problem Solving: Saving the Birds**

**Probability and Statistics**

**Math Problem Solving: Making the Grade**

**Math Problem Solving: Statistics for Quality**

**PLATO® Algebra 1, Part I**

**Introduction to Functions (Alg 1.1)**

**Linear Patterns (Alg 1.1)**

**Graphs, Slopes, and y-Intercepts (Alg 1.1)**

**Equations, Graphs, Slopes, and y-Intercepts (Alg 1.1)**

**PLATO® Algebra 2, Part I**

**Graphs and Linear Equations (Alg 2.1)**

**Slope of a Line from 2 Points (Alg 2.1)**

**Using the Slope and y-Intercept to graph a Line (Alg 2.1)**

**Finding the Slope and y-Intercept from an Equation (Alg 2.1)**

**Review: Graphs (Alg 2.1)**

**PLATO® Algebra 2, Part 2**

**Coordinates and Curves (Alg 2.2)**

**Calculating the Slope of a Line (Alg 2.2)**

**Point-Slope and Slope-Intercept Forms of Equations (Alg 2.2)**

**Functions and their Graphs (Alg 2.2)**

**Solving Problems with Linear Functions (Alg 2.2)**

**M.O.AI.2.09 create and solve systems of linear equations graphically and numerically using the elimination method and the substitution method, given a real-world situation.**



**PLATO® Math Problem Solving**

**Intermediate Algebra**

**Math Problem Solving: Video Rental**

**Math Problem Solving: Running a Race**

**Advanced Algebra**

**Math Problem Solving: Car Rental**

**Math Problem Solving: Building Boats**

**PLATO® Algebra I, Part I**

**Graphing Basics (Alg 1.1)**

**Solving and Graphing Systems of Equations (Alg 1.1)**

**Solving Problems with Systems of Linear Equations (Alg 1.1)**

**PLATO® Algebra 2, Part I**

**Linear Systems of Equations and Inequalities (Alg 2.1)**

**Solving Linear Systems of Equations: Graphs (Alg 2.1)**

**Solving Linear Systems of Equations: Substitution (Alg 2.1)**

**Solving Linear Systems of Equations: Addition (Alg 2.1)**

**Solving Problems with Linear Systems (Alg 2.1)**

**Review: Linear Systems (Alg 2.1)**

**M.O.A1.2.10 simplify and evaluate algebraic expressions • add and subtract polynomials • multiply and divide binomials by binomials or monomials**

**PLATO® Math Problem Solving**

**Advanced Algebra**

**Math Problem Solving: Car Rental**

**PLATO® Algebra I, Part I**

**Math Sentences (Alg 1.1)**

**Adding Monomials (Alg 1.1)**

**Subtracting Monomials (Alg 1.1)**

**Multiplying Monomials (Alg 1.1)**

**Dividing Monomials (Alg 1.1)**

**Adding Binomials and Monomials (Alg 1.1)**

**Subtracting Binomials and Monomials (Alg 1.1)**

**Multiplying Binomials and Monomials (Alg 1.1)**

**Dividing Binomials by Monomials (Alg 1.1)**

**PLATO® Algebra I, Part 2**

**Polynomials and Factoring (Alg 1.2)**

**Monomial Sum (Alg 1.2)**

**Monomial Difference (Alg 1.2)**

**Monomial Product (Alg 1.2)**

**Monomial Quotient (Alg 1.2)**

**Binomial Sum (Alg 1.2)**

**Additive Inverse of a Binomial (Alg 1.2)**

**Binomial Difference (Alg 1.2)**

**Polynomial Sum (Alg 1.2)**

**Polynomial Difference (Alg 1.2)**

**Product of a Monomial and Polynomial (Alg 1.2)**

**Simplifying Polynomial Expressions (Alg 1.2)**

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**Quotient of a Monomial and Polynomial (Alg 1.2)**  
**Review: Polynomials and Factoring (Alg 1.2)**

**PLATO® Algebra 2, Part 1**

**Rational Expressions (Alg 2.1)**  
**Evaluating Rational Expressions (Alg 2.1)**  
**Equivalent Forms of Rational Expressions (Alg 2.1)**  
**Simplifying Rational Expressions (Alg 2.1)**  
**Review: Rational Expressions (Alg 2.1)**

**PLATO® Algebra 2, Part 2**

**Numbers and their Properties (Alg 2.2)**  
**Rationalizing the Denominator in Rational Expressions (Alg 2.2)**  
**Applying Rules for Exponents and Radicals (Alg 2.2)**  
**Simplifying Algebraic Expressions (Alg 2.2)**  
**Multiplying Algebraic Expressions (Alg 2.2)**  
**Rational Expressions: Simplify (Alg 2.2)**

**M.O.A1.2.11 create polynomials to represent and solve problems from real-world situations while focusing on symbolic and graphical patterns.**

**PLATO® Math Problem Solving**

**Beginning Algebra**  
**Math Problem Solving: Bean-Counting**

**Intermediate Algebra**  
**Math Problem Solving: Video Rental**  
**Math Problem Solving: Running a Race**

**Advanced Algebra**  
**Math Problem Solving: Car Rental**  
**Math Problem Solving: Building Boats**

**PLATO® Algebra 1, Part 1**

**Basic Number Ideas (Alg 1.1)**  
**Using Basic Number Ideas (Alg 1.1)**

**Math Sentences (Alg 1.1)**  
**Expressions in 1 Variable (Alg 1.1)**  
**Expressions in 2 or More Variables (Alg 1.1)**

**PLATO® Algebra 1, Part 2**

**Equations and Inequalities (Alg 1.2)**  
**Simple Equations in 1 Variable: Using Inspection (Alg 1.2)**  
**Simple Equations in 1 Variable: Isolating the Variable (Alg 1.2)**

**M.O.A1.2.12 use area models and graphical representations to develop and explain appropriate methods of factoring**

**PLATO® Algebra 1, Part 1**

**Math Sentences (Alg 1.1)**  
**Multiplying Binomials and Monomials (Alg 1.1)**  
**Linear Equations in 1 Variable: Solving by Inspection (Alg 1.1)**  
**Linear Equations in 1 Variable: Isolating the Variable (Alg 1.1)**  
**Special Quadratic Equations, Part 1 (Alg 1.1)**  
**Special Quadratic Equations, Part 2 (Alg 1.1)**



**PLATO® Algebra 1, Part 2**

**Polynomials and Factoring (Alg 1.2)**

**Monomial Factors of Polynomials (Alg 1.2)**

**Binomial Factors of Polynomials, Part 1 (Alg 1.2)**

**Binomial Factors of Polynomials, Part 2 (Alg 1.2)**

**Factoring Trinomials, Part 1 (Alg 1.2)**

**Factoring Trinomials, Part 2 (Alg 1.2)**

**Review: Polynomials and Factoring (Alg 1.2)**

**Equations and Inequalities (Alg 1.2)**

**Solving Simple Quadratic Equations (Alg 1.2)**

**Solving Quadratic Equations by Factoring, Part 1 (Alg 1.2)**

**Solving Quadratic Equations by Factoring, Part 2 (Alg 1.2)**

**Solving Quadratic Equations by Factoring, Part 3 (Alg 1.2)**

**Review: Equations and Inequalities (Alg 1.2)**

**PLATO® Algebra 2, Part 2**

**Numbers and their Properties (Alg 2.2)**

**Factoring Algebraic Expressions (Alg 2.2)**

**Factoring or Using the Quadratic Formula (Alg 2.2)**

**Coordinates and Curves (Alg 2.2)**

**Parabola and Its Intercepts (Alg 2.2)**

**PLATO® Foundational Mathematics**

**Understanding Multiplication**

**Understanding Multiplication as an Array**

**M.O.A1.2.13 simplify radical expressions • through adding, subtracting, multiplying and dividing • exact and approximate forms**

**PLATO® Algebra 1, Part 2**

**Sets and Numbers (Alg 1.2)**

**Square Roots of Integers (Alg 1.2)**

**Multiplication Rule for Radicals (Alg 1.2)**

**Division Rule for Radicals (Alg 1.2)**

**Simplifying Radicals, Part 1 (Alg 1.2)**

**Simplifying Radicals, Part 2 (Alg 1.2)**

**Review: Exponents and Radicals (Alg 1.2)**

**PLATO® Algebra 2, Part 2**

**Numbers and their Properties (Alg 2.2)**

**Rules for Exponents and Radicals (Alg 2.2)**

**Rationalizing the Denominator in Rational Expressions (Alg 2.2)**

**Applying Rules for Exponents and Radicals (Alg 2.2)**

**M.O.A1.2.14 solve quadratic equations by • graphing (with and without technology), • factoring • quadratic formula and draw reasonable conclusions about a situation being modeled.**

**PLATO® Math Problem Solving**

**Beginning Algebra**

**Math Problem Solving: Bean-Counting**



**PLATO® Algebra I, Part 1**  
**Math Sentences (Alg 1.1)**  
**Special Quadratic Equations, Part 1 (Alg 1.1)**  
**Using Quadratic Equations to Solve Problems (Alg 1.1)**

**PLATO® Algebra I, Part 2**  
**Equations and Inequalities (Alg 1.2)**  
**Solving Simple Quadratic Equations (Alg 1.2)**  
**Solving Quadratic Equations by Factoring, Part 1 (Alg 1.2)**  
**Solving Quadratic Equations by Factoring, Part 2 (Alg 1.2)**  
**Solving Quadratic Equations by Factoring, Part 3 (Alg 1.2)**  
**Quadratic Formula (Alg 1.2)**  
**Solving Problems with the Quadratic Equations (Alg 1.2)**  
**Review: Equations and Inequalities (Alg 1.2)**

**PLATO® Algebra 2, Part 2**  
**Numbers and their Properties (Alg 2.2)**  
**Factoring or Using the Quadratic Formula (Alg 2.2)**  
  
**Coordinates and Curves (Alg 2.2)**  
**Distance and Circles (Alg 2.2)**  
**Parabola and Its Intercepts (Alg 2.2)**  
**Parabola and Its Vertex (Alg 2.2)**  
  
**Functions and their Graphs (Alg 2.2)**  
**Solving Problems with Quadratic Functions (Alg 2.2)**

**M.O.A1.2.15 describe real life situations involving exponential growth and decay equations including  $y=2x$  and  $y=(\frac{1}{2})x$ ; compare the equation with attributes of an associated table and graph to demonstrate an understanding of their interrelationship.**

**PLATO® Math Problem Solving**  
**Advanced Algebra**  
**Math Problem Solving: Saving the Birds**

**PLATO® Algebra 2, Part 2**  
**Exponential and Logarithmic Functions (Alg 2.2)**  
**Properties of Exponential Functions (Alg 2.2)**  
**Recognizing Graphs of Types of Functions (Alg 2.2)**  
**Solving Problems: Exponential and Logarithmic (Alg 2.2)**  
**Exponential Growth (Alg 2.2)**  
**Exponential Decay (Alg 2.2)**

**M.O.A1.2.16 simplify and evaluate rational expressions • add, subtract, multiply and divide • determine when an expression is undefined.**

**PLATO® Algebra 2, Part 1**  
**Rational Expressions (Alg 2.1)**  
**Evaluating Rational Expressions (Alg 2.1)**  
**Restrictions on Rational Expressions (Alg 2.1)**  
**Equivalent Forms of Rational Expressions (Alg 2.1)**  
**Simplifying Rational Expressions (Alg 2.1)**  
**Sum of Rational Expressions, Part 1 (Alg 2.1)**



**Difference of Rational Expressions, Part 1 (Alg 2.1)**  
**Product of Rational Expressions (Alg 2.1)**  
**Quotient of Rational Expressions (Alg 2.1)**  
**Common Denominators of Rational Expressions (Alg 2.1)**  
**Sum of Rational Expressions, Part 2 (Alg 2.1)**  
**Difference of Rational Expressions, Part 2 (Alg 2.1)**  
**Review: Rational Expressions (Alg 2.1)**

**PLATO® Algebra 2, Part 2**

**Numbers and their Properties (Alg 2.2)**  
**Rational Expressions: Simplify (Alg 2.2)**  
**Rational Expressions: Add and Subtract (Alg 2.2)**  
**Rational Expressions: Multiply and Divide (Alg 2.2)**

**M.O.A1.2.17 perform a linear regression (with and without technology), • compare and evaluate methods of fitting lines to data. • identify the equation for the line of regression, • examine the correlation coefficient to determine how well the line fits the data • use the equation to predict specific values of a variable.**

**PLATO® Math Problem Solving**

**Beginning Algebra**  
**Math Problem Solving: Tunnel through Bald Mountain**

**Advanced Algebra**  
**Math Problem Solving: Saving the Birds**

**PLATO® Algebra 1, Part 1**

**Introduction to Functions (Alg 1.1)**  
**Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**

**M.O.A1.2.18 compute and interpret the expected value of random variables in simple cases using simulations and rules of probability (with and without technology).**

**PLATO® Math Problem Solving**

**Math Fundamentals**  
**Math Problem Solving: Building a Highway**  
**Math Problem Solving: Smart Shopping**

**Data Skills**  
**Math Problem Solving: Planning a Playground**  
**Math Problem Solving: Growing Lilies**

**Beginning Algebra**  
**Math Problem Solving: Plan for Fishing Trip**  
**Math Problem Solving: Tunnel through Bald Mountain**

**Intermediate Algebra**  
**Math Problem Solving: Video Rental**  
**Math Problem Solving: Running a Race**

**Advanced Algebra**  
**Math Problem Solving: Car Rental**  
**Math Problem Solving: Building Boats**

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**Geometry and Measurement**

**Math Problem Solving: Planning a Park**

**Math Problem Solving: Shelf Space**

**Probability and Statistics**

**Math Problem Solving: The Fund Raiser**

**Math Problem Solving: Making the Grade**

**Math Problem Solving: Statistics for Quality**

**PLATO® Algebra 1, Part I**

**Special Topics (Alg 1.1)**

**Probability and Possible Outcomes (Alg 1.1)**

**Probability of an Event (Alg 1.1)**

**Solving Problems with Probability (Alg 1.1)**

**PLATO® Algebra 2, Part I**

**Probability (Alg 2.1)**

**Chance Experiments and Probability (Alg 2.1)**

**Determining the Probability of an Event (Alg 2.1)**

**Multiplication Principle of Counting (Alg 2.1)**

**Review: Probability (Alg 2.1)**

**PLATO® Quality Fundamentals**

**Data Collection**

**Setting the Stage for Data Collection**

**M.O.AI.2.19 gather data to create histograms, box plots, scatter plots and normal distribution curves and use them to draw and support conclusions about the data.**

**PLATO® Math Problem Solving**

**Data Skills**

**Math Problem Solving: Planning a Playground**

**Math Problem Solving: Growing Lilies**

**Advanced Algebra**

**Math Problem Solving: Saving the Birds**

**Probability and Statistics**

**Math Problem Solving: Making the Grade**

**Math Problem Solving: Statistics for Quality**

**PLATO® Quality Fundamentals**

**Charting and Graphing**

**Charts and Graphs for Quality**

**Interpreting Scatter Diagrams**

**Interpreting Histograms**

**Basic Statistics**

**M.O.AI.2.20 design experiments to model and solve problems using the concepts of sample space and probability distribution.**

**PLATO® Math Problem Solving**

**Probability and Statistics**

**Math Problem Solving: The Fund Raiser**



**PLATO® Algebra 1, Part I**  
**Special Topics (Alg 1.1)**  
**Probability and Possible Outcomes (Alg 1.1)**  
**Probability of an Event (Alg 1.1)**  
**Solving Problems with Probability (Alg 1.1)**

**PLATO® Algebra 2, Part I**  
**Probability (Alg 2.1)**  
**Chance Experiments and Probability (Alg 2.1)**  
**Determining the Probability of an Event (Alg 2.1)**  
**Review: Probability (Alg 2.1)**

**PLATO® Quality Fundamentals**  
**Charting and Graphing**  
**Basic Statistics**

**M.O.A1.2.21 use multiple representations, such as words, graphs, tables of values and equations, to solve practical problems; describe advantages and disadvantages of the use of each representation**

**PLATO® Math Problem Solving**  
**Beginning Algebra**  
**Math Problem Solving: Plan for Fishing Trip**

**Advanced Algebra**  
**Math Problem Solving: Car Rental**

**PLATO® Algebra 1, Part I**  
**Introduction to Functions (Alg 1.1)**  
**Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**

**PLATO® Algebra 2, Part 2**  
**Functions and their Graphs (Alg 2.2)**  
**Solving Problems with Linear Functions (Alg 2.2)**

## **Geometry and Applied Geometry**

### **Standard 3: Geometry**

**M.O.G.3.01 represent geometric figures, such as points, lines, planes, segments, rays, and angles pictorially with proper identification and distinguish between undefined and defined terms.**

**PLATO® Geometry and Measurement 1**  
**Geometry**  
**Special Angles, Part 1**

**PLATO® Geometry and Measurement 2**  
**Introduction to Geometry**  
**Points, Lines, and Planes**  
**Intersecting Lines and Planes**

**PLATO® Foundational Mathematics**  
**Plane and Solid Figures**  
**Lines, Parts of Lines, and Angles**

**Inspired solutions for teaching and learning™**



**M.O.G.3.02 differentiate and apply inductive and deductive reasoning, justify conclusions in real-world settings.**

PLATO Modules are not available for this learning expectation.

**M.O.G.3.03 use the basic concepts of symbolic logic including identifying the converse, inverse, and contrapositive of a conditional statement and test the validity of conclusions with methods that include Venn Diagrams.**

PLATO® Algebra I, Part 2  
Sets and Numbers (Alg 1.2)  
Basic Set Concepts: Subsets (Alg 1.2)  
Union of Sets (Alg 1.2)  
Intersection of Sets (Alg 1.2)  
Review: Fractions and Sets (Alg 1.2)

**M.O.G.3.04 validate conclusions by constructing logical arguments using both formal and informal methods with direct and indirect reasoning.**

PLATO Modules are not available for this learning expectation.

**M.O.G.3.05 construct formal and informal proofs by applying definitions, theorems, and postulates related to such topics as • complementary, • supplementary, • vertical angles, • angles formed by perpendicular lines, and justify the steps.**

PLATO® Geometry and Measurement 1  
Geometry  
Special Angles, Part 1  
Special Angles, Part 2

PLATO® Geometry and Measurement 2  
Introduction to Geometry  
Postulates and Theorems  
Intersecting Lines and Planes  
Congruent Angles  
Supplementary and Complementary Angles  
Two of a Kind

Triangles and Lines  
Congruent Triangles, Part 1  
Congruent Triangles, Part 2  
Angles in Pairs  
Transitive Properties of Lines  
The Sum of the Angles in a Triangle  
The Pythagorean Theorem 2  
30-60 Right Triangles  
Proportionality  
Not Everything is Created Equal

Polygons  
Summing Up Angles  
Parallelograms, Part 1

Inspired solutions for teaching and learning™



**Parallelograms, Part 2**  
**Rhombuses and Trapezoids**

**Transformations, Symmetry, and Area**

**Symmetry**

**Translations**

**Rotations**

**Area of Right Triangles and Parallelograms**

**Area of Any Triangle**

**Area of Trapezoids and Rhombuses**

**Circles**

**Introduction to Circles**

**Tangents**

**Arcs and Chords**

**Inscribed Angles**

**Circles and Segments**

**PLATO® Foundational Mathematics**

**Plane and Solid Figures**

**Lines in a Plane**

**M.O.G.3.06 compare and contrast the relationships between angles formed by two lines cut by a transversal when lines are parallel and when they are not parallel, and use the results to develop concepts that will justify parallelism.**

**PLATO® Geometry and Measurement 1**

**Geometry**

**Special Angles, Part 2**

**PLATO® Geometry and Measurement 2**

**Introduction to Geometry**

**Two of a Kind**

**Triangles and Lines**

**Angles in Pairs**

**Transitive Properties of Lines**

**A Sense of Proportion**

**PLATO® Foundational Mathematics**

**Plane and Solid Figures**

**Lines in a Plane**

**M.O.G.3.07 make conjectures and justify congruence relationships with an emphasis on triangles and employ these relationships to solve problems.**

**PLATO® Math Problem Solving**

**Geometry and Measurement**

**Math Problem Solving: Planning a Park**

**Math Problem Solving: Shelf Space**

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**PLATO® Geometry and Measurement 1**  
Geometry  
Using Geometry

**PLATO® Geometry and Measurement 2**  
Triangles and Lines  
Congruent Triangles, Part 1  
Congruent Triangles, Part 2  
Congruent Triangle Problems  
Solving Right Triangle Problems

**M.O.G.3.08 identify general properties of and compare and contrast the properties of convex and concave quadrilaterals • parallelograms • rectangles • rhombuses • squares • trapezoids**

**PLATO® Math Problem Solving**  
Geometry and Measurement  
Math Problem Solving: Planning a Park  
Math Problem Solving: Shelf Space

**PLATO® Geometry and Measurement 2**  
Polygons  
Introduction to Polygons  
Summing Up Angles  
Angles in Regular Polygons  
Parallelograms, Part 1  
Parallelograms, Part 2  
Rhombuses and Trapezoids

**M.O.G.3.09 draw conclusions in problem solving situations that include two and three dimensions of figures based on the properties of similarity.**

**PLATO® Geometry and Measurement 1**  
Geometry  
Using Geometry

**PLATO® Geometry and Measurement 2**  
Triangles and Lines  
Congruent Triangle Problems  
Solving Right Triangle Problems  
Proportionality  
A Sense of Proportion

**Circles**  
Arcs and Chords

**PLATO® Foundational Mathematics**  
Plane and Solid Figures  
Exploring Similar Figures

**M.O.G.3.10 investigate measures of angles and lengths of segments to determine the existence of a triangle (triangle inequality) and to establish the relationship between the measures of the angles and the length of the sides (with and without technology).**

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**PLATO® Geometry and Measurement 2**  
Triangles and Lines  
Congruent Triangles, Part 2  
Not Everything is Created Equal

**M.O.G.3.11 verify and justify the basis for the trigonometric ratios by applying properties of similar triangles and use the results to find inaccessible heights and distances. Using the ratios of similar triangles to find unknown side lengths and angle measures, construct a physical model that illustrates the use of a scale drawing in a real-world situation.**

**PLATO® Geometry and Measurement 1**  
Geometry  
Using Geometry

**PLATO® Geometry and Measurement 2**  
Triangles and Lines  
Congruent Triangle Problems  
Solving Right Triangle Problems  
Proportionality  
A Sense of Proportion

**PLATO® Algebra 1, Part 1**  
Special Topics (Alg 1.1)  
Scaling and Proportion, Part 1 (Alg 1.1)  
Scaling and Proportion, Part 2 (Alg. 1.1)

**M.O.G.3.12 apply the Pythagorean Theorem and its converse to solve real-world problems and derive the special right triangle relationships (i.e. 30-60-90, 45-45-90).**

**PLATO® Geometry and Measurement 1**  
Geometry  
The Pythagorean Theorem 1  
Using Geometry

**PLATO® Geometry and Measurement 2**  
Triangles and Lines  
The Pythagorean Theorem 2  
Solving Right Triangle Problems  
30-60 Right Triangles

**Solid and Coordinate Geometry**  
The Distance Formula

**PLATO® Algebra 2, Part 2**  
Coordinates and Curves (Alg 2.2)  
Distance between 2 Points (Alg 2.2)

**M.O.G.3.13 investigate measures of angles formed by chords, tangents, and secants of a circle and draw conclusions for the relationship to its arcs.**



**PLATO® Geometry and Measurement 1**  
Geometry  
Circles/Arcs/Circumferences

**PLATO® Geometry and Measurement 2**  
Circles  
Introduction to Circles  
Tangents  
Arcs and Chords  
Inscribed Angles  
Circles and Angles  
Circles and Segments

**M.O.G.3.14** find angle measures of interior and exterior angles; given a polygon, find the length of sides from given data; and use properties of regular polygons to find any unknown measurements of sides or angles.

**PLATO® Math Problem Solving**  
Geometry and Measurement  
Math Problem Solving: Planning a Park  
Math Problem Solving: Shelf Space

**PLATO® Geometry and Measurement 2**  
Polygons  
Introduction to Polygons  
Summing Up Angles  
Angles in Regular Polygons

**M.O.G.3.15** develop properties of tessellating figures and use those properties to tessellate the plane.

PLATO Modules are not available for this learning expectation.

**M.O.G.3.16** derive and justify formulas for area, perimeter, surface area, and volume using nets and apply them to solve real-world problems.

**PLATO® Math Problem Solving**  
Geometry and Measurement  
Math Problem Solving: Planning a Park  
Math Problem Solving: Shelf Space

**PLATO® Geometry and Measurement 1**  
Measurement  
Area, Part 1  
Area, Part 2  
Volume  
Using Measurement

**PLATO® Geometry and Measurement 2**  
Transformations, Symmetry, and Area  
Area of Right Triangles and Parallelograms  
Area of Any Triangle  
Area of Trapezoids and Rhombuses

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**Solids and Coordinate Geometry**  
**Area and Volume of Cylinders**  
**Area and Volume of Cones**

**PLATO® Foundational Mathematics**  
**Using Geometry**  
**Calculating the Area of Rectangles and Squares**  
**Calculating the Area of Triangles**  
**Calculating the Volume of Rectangular Prism**

**M.O.G.3.17 apply concepts of analytical geometry such as formulas for distance, slope, and midpoint and apply these to finding dimensions of polygons on the coordinate plane.**

**PLATO® Geometry and Measurement 2**  
**Solid and Coordinate Geometry**  
**The Distance Formula**

**Solids and Coordinate Geometry**  
**Slope**  
**Coordinates in Three Dimensions**

**PLATO® Algebra 1, Part 1**  
**Introduction to Functions (Alg 1.1)**  
**Graphs, Slopes, and y-Intercepts (Alg 1.1)**  
**Equations, Graphs, Slopes, and y-Intercepts (Alg 1.1)**

**PLATO® Algebra 2, Part 1**  
**Graphs and Linear Equations (Alg 2.1)**  
**Slope of a Line from 2 Points (Alg 2.1)**  
**Using the Slope and y-Intercept to graph a Line (Alg 2.1)**  
**Finding the Slope and y-Intercept from an Equation (Alg 2.1)**  
**Parallel Lines and Their Slopes (Alg 2.1)**  
**Perpendicular Lines and Their Slopes (Alg 2.1)**  
**Equations of Parallel or Perpendicular Lines (Alg 2.1)**  
**Review: Graphs (Alg 2.1)**

**PLATO® Algebra 2, Part 2**  
**Special Equations and Inequalities (Alg 2.2)**  
**Absolute Value, Inequalities, and Interval Notation (Alg 2.2)**  
**Coordinates and Curves (Alg 2.2)**  
**Calculating the Slope of a Line (Alg 2.2)**  
**Point-Slope and Slope-Intercept Forms of Equations (Alg 2.2)**  
**Equation of a Line Given a Point and Parallel Line (Alg 2.2)**  
**Equation of a Line Given a Point and Perpendicular Line (Alg 2.2)**  
**Perpendicular Bisector of a Line Segment (Alg 2.2)**  
**Distance between 2 Points (Alg 2.2)**  
**Distance between a Point and a Line (Alg 2.2)**

**M.O.G.3.18 construct a triangle's medians, altitudes, angle and perpendicular bisectors using various methods; and develop logical concepts about their relationships to be used in solving real-world problems.**

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**PLATO® Geometry and Measurement 2**  
**Triangles and Lines**  
**Not Everything is Created Equal**

**M.O.G.3.19 create and apply concepts using transformational geometry and laws of symmetry, of a • reflection, • translation, • rotation, • glide reflection, • dilation of a figure, and develop logical arguments for congruency and similarity.**

**PLATO® Geometry and Measurement 1**  
**Geometry**  
**Using Geometry**

**PLATO® Geometry and Measurement 2**  
**Triangles and Lines**  
**Congruent Triangles, Part 1**  
**Congruent Triangles, Part 2**  
**Congruent Triangle Problems**  
**Proportionality**  
**A Sense of Proportion**

**Transformations, Symmetry, and Area**  
**Symmetry**  
**Translations**  
**Rotations**

**PLATO® Foundational Mathematics**  
**Plane and Solid Figures**  
**Exploring Similar Figures**  
**Line Symmetry in Plane Figures**

**M.O.G.3.20 compare and contrast Euclidean geometry to other geometries (i.e. spherical, elliptic) using various forms of communication such as development of physical models, oral or written reports.**

**PLATO® Math Problem Solving**  
**Math Fundamentals**  
**Math Problem Solving: Car Costs**

**Geometry and Measurement**  
**Math Problem Solving: Planning a Park**

**M.O.G.3.21 approximate the area of irregularly shaped regions based on the approximations and the attributes of the related region, develop a formula for finding the area of irregularly shaped regions. Plan, organize and present results by justifying conclusions.**

**PLATO® Math Problem Solving**  
**Geometry and Measurement**  
**Math Problem Solving: Planning a Park**

**PLATO® Geometry and Measurement 2**  
**Polygons**  
**Introduction to Polygons**



**Summing Up Angles**  
**Angles in Regular Polygons**

**Transformations, Symmetry, and Area**  
**Area of Any Triangle**  
**Area of Trapezoids and Rhombuses**

## **Algebra II**

### **Standard 2: Algebra**

**M.O.A2.2.01 determine equations of lines including parallel, perpendicular, vertical and horizontal lines, and compare and contrast the properties of these equations.**

**PLATO® Math Problem Solving**

**Intermediate Algebra**  
**Math Problem Solving: Video Rental**

**Advanced Algebra**  
**Math Problem Solving: Saving the Birds**

**PLATO® Geometry and Measurement 1**

**Geometry**  
**Special Angles, Part 2**

**PLATO® Geometry and Measurement 2**

**Introduction to Geometry**  
**Two of a Kind**

**Triangles and Lines**  
**Transitive Properties of Lines**

**Solids and Coordinate Geometry**  
**Slope**

**PLATO® Algebra 1, Part 1**

**Introduction to Functions (Alg 1.1)**  
**Equations, Graphs, Slopes, and y-Intercepts (Alg 1.1)**

**PLATO® Algebra 2, Part 1**

**Graphs and Linear Equations (Alg 2.1)**  
**Finding the Slope and y-Intercept from an Equation (Alg 2.1)**  
**Writing Equations in Slope-Intercept Form (Alg 2.1)**  
**Identifying Graphs from Their Equations (Alg 2.1)**  
**Parallel Lines and Their Slopes (Alg 2.1)**  
**Perpendicular Lines and Their Slopes (Alg 2.1)**  
**Equations of Parallel or Perpendicular Lines (Alg 2.1)**  
**Review: Graphs (Alg 2.1)**

**PLATO® Algebra 2, Part 2**

**Coordinates and Curves (Alg 2.2)**  
**Point-Slope and Slope-Intercept Forms of Equations (Alg 2.2)**  
**Equation of a Line Given a Point and Parallel Line (Alg 2.2)**  
**Equation of a Line Given a Point and Perpendicular Line (Alg 2.2)**

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**Perpendicular Bisector of a Line Segment (Alg 2.2)**  
**Distance between a Point and a Line (Alg 2.2)**

**PLATO® Foundational Mathematics**  
**Plane and Solid Figures**  
**Lines in a Plane**

**M.O.A2.2.02 factor higher order polynomials by applying various methods including factoring by grouping and the sum and difference of two cubes; analyze and describe the relationship between the factored form and the graphical representation.**

**PLATO® Algebra 1, Part 1**  
**Math Sentences (Alg 1.1)**  
**Special Quadratic Equations, Part 2 (Alg 1.1)**

**PLATO® Algebra 1, Part 2**  
**Polynomials and Factoring (Alg 1.2)**  
**Monomial Factors of Polynomials (Alg 1.2)**  
**Binomial Factors of Polynomials, Part 1 (Alg 1.2)**  
**Binomial Factors of Polynomials, Part 2 (Alg 1.2)**  
**Factoring Trinomials, Part 1 (Alg 1.2)**  
**Factoring Trinomials, Part 2 (Alg 1.2)**  
**Review: Polynomials and Factoring (Alg 1.2)**

**PLATO® Algebra 2, Part 2**  
**Numbers and their Properties (Alg 2.2)**  
**Factoring Algebraic Expressions (Alg 2.2)**

**M.O.A2.2.03 define complex numbers, simplify powers of ‘i’, perform basic operations with complex numbers, and give answers as complex numbers in simplest form.**

PLATO Modules are not available for this learning expectation.

**M.O.A2.2.04 simplify expressions involving radicals and fractional exponents, convert between the two forms, and solve equations containing radicals and exponents.**

**PLATO® Math Problem Solving**  
**Beginning Algebra**  
**Math Problem Solving: Plan for Fishing Trip**

**Advanced Algebra**  
**Math Problem Solving: Car Rental**

**PLATO® Algebra 1, Part 1**  
**Introduction to Functions (Alg 1.1)**  
**Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**

**PLATO® Algebra 1, Part 2**  
**Sets and Numbers (Alg 1.2)**  
**Square Roots of Integers (Alg 1.2)**  
**Multiplication Rule for Radicals (Alg 1.2)**  
**Division Rule for Radicals (Alg 1.2)**



**Simplifying Radicals, Part 1 (Alg 1.2)**  
**Simplifying Radicals, Part 2 (Alg 1.2)**  
**Review: Exponents and Radicals (Alg 1.2)**

**PLATO® Algebra 2, Part 2**

**Numbers and their Properties (Alg 2.2)**  
**Rules for Exponents and Radicals (Alg 2.2)**  
**Rationalizing the Denominator in Rational Expressions (Alg 2.2)**  
**Applying Rules for Exponents and Radicals (Alg 2.2)**

**Functions and their Graphs (Alg 2.2)**  
**Solving Problems with Linear Functions (Alg 2.2)**

**M.O.A2.2.05 solve quadratic equations over the set of complex numbers: apply the techniques of factoring, completing the square, and the quadratic formula; use the discriminate to determine the number and nature of the roots; identify the maxima and minima; use words, graphs, tables, and equations to generate and analyze solutions to practical problems..**

**PLATO® Math Problem Solving**

**Beginning Algebra**  
**Math Problem Solving: Plan for Fishing Trip**  
**Math Problem Solving: Bean-Counting**

**Advanced Algebra**  
**Math Problem Solving: Car Rental**

**PLATO® Algebra 1, Part 1**

**Math Sentences (Alg 1.1)**  
**Special Quadratic Equations, Part 1 (Alg 1.1)**  
**Using Quadratic Equations to Solve Problems (Alg 1.1)**

**Introduction to Functions (Alg 1.1)**  
**Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**

**PLATO® Algebra 1, Part 2**

**Equations and Inequalities (Alg 1.2)**  
**Solving Simple Quadratic Equations (Alg 1.2)**  
**Solving Quadratic Equations by Factoring, Part 1 (Alg 1.2)**  
**Solving Quadratic Equations by Factoring, Part 2 (Alg 1.2)**  
**Solving Quadratic Equations by Factoring, Part 3 (Alg 1.2)**  
**Quadratic Formula (Alg 1.2)**  
**Solving Problems with the Quadratic Equations (Alg 1.2)**  
**Review: Equations and Inequalities (Alg 1.2)**

**PLATO® Algebra 2, Part 2**

**Numbers and their Properties (Alg 2.2)**  
**Factoring or Using the Quadratic Formula (Alg 2.2)**

**Coordinates and Curves (Alg 2.2)**  
**Distance and Circles (Alg 2.2)**  
**Parabola and Its Intercepts (Alg 2.2)**  
**Parabola and Its Vertex (Alg 2.2)**



**Functions and their Graphs (Alg 2.2)**  
**Solving Problems with Linear Functions (Alg 2.2)**  
**Solving Problems with Quadratic Functions (Alg 2.2)**

**M.O.A2.2.06** develop and use the appropriate field properties of matrices by adding, subtracting, and multiplying; solve a system of linear equations using matrices; and apply skills toward solving practical problems.

**PLATO® Algebra 2, Part 1**  
**Linear Systems of Equations and Inequalities (Alg 2.1)**  
**Solving Linear Systems of Equations: Matrices I (Alg 2.1)**

**M.O.A2.2.07** define a function and find its zeros; express the domain and range using interval notation; find the inverse of a function; find the value of a function for a given element in its domain; and perform basic operations on functions including composition of functions.

**PLATO® Math Problem Solving**  
**Advanced Algebra**  
**Math Problem Solving: Building Boats**

**PLATO® Algebra 1, Part 1**  
**Introduction to Functions (Alg 1.1)**  
**Functions (Alg 1.1)**  
**Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**

**PLATO® Algebra 2, Part 2**  
**Functions and their Graphs (Alg 2.2)**  
**Defining a Function with Its Rule (Alg 2.2)**  
**Functions and their Graphs (Alg 2.2)**  
**Finding Values of a Function Using Its Rule (Alg 2.2)**  
**Functions and their Graphs (Alg 2.2)**  
**Translations and Transformations (Alg 2.2)**  
**Functional Values (Alg 2.2)**  
**Composite Functions (Alg 2.2)**  
**Domain Values of Composite Functions (Alg 2.2)**  
**Inverse of a Function (Alg 2.2)**  
**Determining if a Function Has an Inverse (Alg 2.2)**

**M.O.A2.2.08** analyze families of functions and their transformations; recognize linear, quadratic, radical, absolute value, step, piece-wise, and exponential functions; analyze connections among words, graphs, tables and equations when solving practical problems with and without technology.

**PLATO® Math Problem Solving**  
**Beginning Algebra**  
**Math Problem Solving: Plan for Fishing Trip**  
**Advanced Algebra**  
**Math Problem Solving: Car Rental**



**PLATO® Algebra 1, Part 1**

**Introduction to Functions (Alg 1.1)**

**Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**

**PLATO® Algebra 2, Part 2**

**Coordinates and Curves (Alg 2.2)**

**Parabola and Its Intercepts (Alg 2.2)**

**Functions and their Graphs (Alg 2.2)**

**Equations and Graphs of Functions, Part 2 (Alg 2.2)**

**Solving Problems with Linear Functions (Alg 2.2)**

**Exponential and Logarithmic Functions (Alg 2.2)**

**Properties of Exponential Functions (Alg 2.2)**

**M.O.A2.2.09 solve quadratic inequalities, graph their solution sets, and express solutions using interval notation.**

**PLATO® Math Problem Solving**

**Beginning Algebra**

**Math Problem Solving: Bean-Counting**

**PLATO® Algebra 2, Part 2**

**Special Equations and Inequalities (Alg 2.2)**

**Graphing Solution Sets of Associated Inequalities (Alg 2.2)**

**Functions and their Graphs (Alg 2.2)**

**Solving Problems with Quadratic Functions (Alg 2.2)**

**M.O.A2.2.10 solve and graph the solution set of systems of linear inequalities in two variables by finding the maximum or minimum values of a function over the feasible region using linear programming techniques.**

**PLATO® Math Problem Solving**

**Intermediate Algebra**

**Math Problem Solving: Video Rental**

**Advanced Algebra**

**Math Problem Solving: Building Boats**

**PLATO® Algebra 2, Part 1**

**Linear Systems of Equations and Inequalities (Alg 2.1)**

**Solving Linear Systems of Inequalities: Graphs (Alg 2.1)**

**Solving Problems with Linear Systems (Alg 2.1)**

**Review: Linear Systems (Alg 2.1)**

**M.O.A2.2.11 solve practical problems involving direct, inverse and joint variation.**

**PLATO® Algebra 2, Part 2**

**Functions and their Graphs (Alg 2.2)**

**Solving Problems with Linear Functions (Alg 2.2)**



**M.O.A2.2.12 analyze the conic sections; identify and sketch the graphs of a parabola, circle, ellipse, and hyperbola and convert between graphs and equations.**

**PLATO® Algebra 2, Part 2**

- Coordinates and Curves (Alg 2.2)**
- Distance and Circles (Alg 2.2)**
- Parabola and Its Intercepts (Alg 2.2)**
- Parabola and Its Vertex (Alg 2.2)**
- Ellipse (Alg 2.2)**
- Hyperbola (Alg 2.2)**
- Equations of Ellipses and Hyperbolas (Alg 2.2)**

**M.O.A2.2.13 solve absolute value inequalities graphically, numerically and algebraically and express the solution set in interval notation.**

**PLATO® Algebra 1, Part 1**

- Math Sentences (Alg 1.1)**
- Linear Inequalities in 1 Variable, Part 1 (Alg 1.1)**
- Linear Inequalities in 1 Variable, Part 2 (Alg 1.1)**
- More Difficult Linear Inequalities in 1 Variable (Alg 1.1)**

**PLATO® Algebra 1, Part 2**

- Equations and Inequalities (Alg 1.2)**
- Absolute Value of a Number (Alg 1.2)**
- Equations with Absolute Values (Alg 1.2)**
- Graphing a Solution Set on a Number Line (Alg 1.2)**
- Linear Inequalities in 1 Variable, Part 1 (Alg 1.2)**
- Linear Inequalities in 1 Variable, Part 2 (Alg 1.2)**
- Linear Inequalities in 1 Variable, Part 3 (Alg 1.2)**
- Review: Equations and Inequalities (Alg 1.2)**

**PLATO® Algebra 2, Part 2**

- Special Equations and Inequalities (Alg 2.2)**
- Evaluating Expressions with Absolute Value (Alg 2.2)**
- Absolute Value, Inequalities, and Interval Notation (Alg 2.2)**
- Graphing Linear Inequalities in 1 Variable (Alg 2.2)**
- Graphing with Restrictions on the Variable (Alg 2.2)**

**M.O.A2.2.14 define a logarithmic function, transform between exponential and logarithmic forms, and apply the basic properties of logarithms to simplify or expand an expression.**

**PLATO® Math Problem Solving**

- Advanced Algebra**
- Math Problem Solving: Saving the Birds**

**PLATO® Algebra 2, Part 2**

- Exponential and Logarithmic Functions (Alg 2.2)**
- Properties of Logarithmic Functions (Alg 2.2)**
- Recognizing Graphs of Types of Functions (Alg 2.2)**
- Solving Problems: Exponential and Logarithmic (Alg 2.2)**



**M.O.A2.2.15** perform a quadratic regression, determine the regression equation and use the results to predict specific values of a variable.

**PLATO® Math Problem Solving**  
Advanced Algebra  
Math Problem Solving: Saving the Birds

**M.O.A2.2.16** describe and illustrate how patterns and sequences are used to develop recursive and closed form equations; analyze and describe characteristics of each form.

**PLATO® Math Problem Solving**  
Intermediate Algebra  
Math Problem Solving: Video Rental

**PLATO® Algebra I, Part I**  
Introduction to Functions (Alg 1.1)  
Patterns and Sequences (Alg 1.1)

### **Conceptual Mathematics**

**M.O.CM.2.1** use a variety of problem solving strategies (e.g., draw a diagram, look for a pattern, work backwards) to solve real-world problems.

**PLATO® Math Problem Solving**  
Math Fundamentals  
Math Problem Solving: Building a Highway  
Math Problem Solving: Smart Shopping

**Data Skills**  
Math Problem Solving: Planning a Playground  
Math Problem Solving: Growing Lilies

**Beginning Algebra**  
Math Problem Solving: Plan for Fishing Trip  
Math Problem Solving: Tunnel through Bald Mountain  
Math Problem Solving: Bean-Counting

**Intermediate Algebra**  
Math Problem Solving: Video Rental  
Math Problem Solving: Running a Race

**Advanced Algebra**  
Math Problem Solving: Car Rental  
Math Problem Solving: Building Boats

**Geometry and Measurement**  
Math Problem Solving: Planning a Park  
Math Problem Solving: Shelf Space

**Probability and Statistics**  
Math Problem Solving: The Fund Raiser  
Math Problem Solving: Making the Grade  
Math Problem Solving: Statistics for Quality



**PLATO® Algebra I, Part I**

**Basic Number Ideas (Alg 1.1)**

**Using Basic Number Ideas (Alg 1.1)**

**Math Sentences (Alg 1.1)**

**Using Linear Equations to Solve Problems (Alg 1.1)**

**Using Quadratic Equations to Solve Problems (Alg 1.1)**

**Graphing Basics (Alg 1.1)**

**Solving Problems with Systems of Linear Equations (Alg 1.1)**

**Equations and Formulas (Alg 1.1)**

**Literal Equations (Alg 1.1)**

**Special Topics (Alg 1.1)**

**Solving Problems with Percents (Alg 1.1)**

**Solving Problems with Mean, Median, and Mode (Alg 1.1)**

**Solving Problems with Probability (Alg 1.1)**

**M.O.CM.2.2 interpret graphs of functions including linear, quadratic, and exponential.**

**PLATO® Math Problem Solving**

**Advanced Algebra**

**Math Problem Solving: Saving the Birds**

**PLATO® Algebra I, Part I**

**Math Sentences (Alg 1.1)**

**Determining the Truth Value of a Statement (Alg 1.1)**

**Graphing Basics (Alg 1.1)**

**Ordered Pairs as Solutions of Linear Equations (Alg 1.1)**

**Introduction to Functions (Alg 1.1)**

**Functions (Alg 1.1)**

**Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**

**Linear Patterns (Alg 1.1)**

**Interpreting Graphs to Solve Problems (Alg 1.1)**

**PLATO® Algebra 2, Part I**

**Graphs and Linear Equations (Alg 2.1)**

**Solutions of Linear Equations as Ordered Pairs (Alg 2.1)**

**PLATO® Algebra 2, Part 2**

**Coordinates and Curves (Alg 2.2)**

**Parabola and Its Intercepts (Alg 2.2)**

**Functions and their Graphs (Alg 2.2)**

**Defining a Function with Its Rule (Alg 2.2)**

**Functions and their Graphs (Alg 2.2)**

**Finding Values of a Function Using Its Rule (Alg 2.2)**

**Functions and their Graphs (Alg 2.2)**

**Equations and Graphs of Functions, Part 2 (Alg 2.2)**

**Exponential and Logarithmic Functions (Alg 2.2)**

**Properties of Exponential Functions (Alg 2.2)**

**Inspired solutions for teaching and learning™**



**M.O.CM.2.3 solve application problems using linear, quadratic and exponential functions with emphasis on data collection and analysis.**

**PLATO® Math Problem Solving**

**Beginning Algebra**

- Math Problem Solving: Plan for Fishing Trip**
- Math Problem Solving: Tunnel through Bald Mountain**
- Math Problem Solving: Bean-Counting**

**Intermediate Algebra**

- Math Problem Solving: Video Rental**
- Math Problem Solving: Running a Race**

**Advanced Algebra**

- Math Problem Solving: Car Rental**
- Math Problem Solving: Building Boats**
- Math Problem Solving: Saving the Birds**

**PLATO® Algebra 1, Part 1**

- Introduction to Functions (Alg 1.1)**
- Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**
- Linear Patterns (Alg 1.1)**
- Interpreting Graphs to Solve Problems (Alg 1.1)**

**PLATO® Algebra 2, Part 2**

- Coordinates and Curves (Alg 2.2)**
- Parabola and Its Intercepts (Alg 2.2)**
- Functions and their Graphs (Alg 2.2)**
- Equations and Graphs of Functions, Part 2 (Alg 2.2)**
- Composite Functions (Alg 2.2)**
- Solving Problems with Linear Functions (Alg 2.2)**
- Exponential and Logarithmic Functions (Alg 2.2)**
- Properties of Exponential Functions (Alg 2.2)**

**M.O.CM.2.4 choose the appropriate formulas to solve workplace problems and judge the reasonableness of the solutions.**

**PLATO® Math Problem Solving**

**Beginning Algebra**

- Math Problem Solving: Plan for Fishing Trip**
- Math Problem Solving: Tunnel through Bald Mountain**
- Math Problem Solving: Bean-Counting**

**Intermediate Algebra**

- Math Problem Solving: Video Rental**
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**Advanced Algebra**

- Math Problem Solving: Car Rental**
- Math Problem Solving: Building Boats**
- Math Problem Solving: Saving the Birds**



**Geometry and Measurement**  
**Math Problem Solving: Planning a Park**  
**Math Problem Solving: Shelf Space**

**PLATO® Geometry and Measurement 1**  
**Measurement**  
**Area, Part 1**  
**Area, Part 2**  
**Volume**  
**Using Measurement**

**PLATO® Geometry and Measurement 2**  
**Transformations, Symmetry, and Area**  
**Area of Right Triangles and Parallelograms**  
**Area of Any Triangle**  
**Area of Trapezoids and Rhombuses**

**Solids and Coordinate Geometry**  
**Area and Volume of Cylinders**  
**Area and Volume of Cones**

**PLATO® Algebra 1, Part 1**  
**Math Sentences (Alg 1.1)**  
**Using Linear Equations to Solve Problems (Alg 1.1)**

**Graphing Basics (Alg 1.1)**  
**Solving Problems with Systems of Linear Equations (Alg 1.1)**

**Equations and Formulas (Alg 1.1)**  
**Literal Equations (Alg 1.1)**  
**Adapting and Using Formulas (Alg 1.1)**

**Introduction to Functions (Alg 1.1)**  
**Interpreting Graphs to Solve Problems (Alg 1.1)**

**PLATO® Algebra 1, Part 2**  
**Equations and Inequalities (Alg 1.2)**  
**Solving Problems with Linear Equations in 1 Variable (Alg 1.2)**  
**Review: Equations and Inequalities (Alg 1.2)**

**PLATO® Algebra 2, Part 2**  
**Functions and their Graphs (Alg 2.2)**  
**Solving Problems with Linear Functions (Alg 2.2)**

**PLATO® Foundational Mathematics**  
**Using Geometry**  
**Calculating the Area of Rectangles and Squares**  
**Calculating the Area of Triangles**  
**Calculating the Volume of Rectangular Prism**

**M.O.CM.2.5 describe and illustrate how calculating costs, simple and compound interest, finance charge, loan payment and tax functions are used to solve real-world problems.**

**PLATO® Algebra 2, Part 2**  
**Exponential and Logarithmic Functions (Alg 2.2)**



**Solving Problems: Exponential and Logarithmic (Alg 2.2)**  
**Exponential Growth (Alg 2.2)**

**M.O.CM.2.6 compare various methods of investing money.**

PLATO Modules are not available for this learning expectation.

### **Standard 3: Geometry**

**M.O.CM.3.1 apply concepts of geometry including the Pythagorean Theorem, similar triangles, and right triangle trigonometry.**

**PLATO® Geometry and Measurement 1**  
**Geometry**  
**The Pythagorean Theorem 1**  
**Using Geometry**

**PLATO® Geometry and Measurement 2**  
**Triangles and Lines**  
**Congruent Triangle Problems**  
**The Pythagorean Theorem 2**  
**Solving Right Triangle Problems**  
**Proportionality**  
**A Sense of Proportion**

**Solid and Coordinate Geometry**  
**The Distance Formula**

**PLATO® Trigonometry**  
**Trigonometric Functions**  
**Right Angle Trigonometry**

**PLATO® Algebra 2, Part 2**  
**Coordinates and Curves (Alg 2.2)**  
**Distance between 2 Points (Alg 2.2)**

**M.O.CM.3.2 compute measures to solve real-world problems, using relationships involving perimeter, area, surface area and volume of geometric figures.**

**PLATO® Math Problem Solving**  
**Geometry and Measurement**  
**Math Problem Solving: Planning a Park**  
**Math Problem Solving: Shelf Space**

**PLATO® Applied Mathematics**  
**Applied Math**  
**Converting Volume Measurements**

**PLATO® Geometry and Measurement 1**  
**Measurement**  
**Area, Part 1**  
**Area, Part 2**  
**Volume**  
**Using Measurement**



**PLATO® Geometry and Measurement 2**  
Transformations, Symmetry, and Area  
Area of Right Triangles and Parallelograms  
Area of Any Triangle  
Area of Trapezoids and Rhombuses

**Solids and Coordinate Geometry**  
Area and Volume of Cylinders  
Area and Volume of Cones

**PLATO® Foundational Mathematics**  
Using Geometry  
Area: Counting Square Units  
Calculating the Area of Rectangles and Squares  
Calculating the Area of Triangles  
Calculating the Volume of Rectangular Prism

**M.O.CM.3.3 analyze the connections of various geometric shapes and patterns to art, architecture, and nature.**

**PLATO® Math Problem Solving**  
Geometry and Measurement  
Math Problem Solving: Planning a Park

## **Standard 5: Data Analysis and Probability**

**M.O.CM.5.1 relate mathematical content to its historical development.**

PLATO Modules are not available for this learning expectation.

**M.O.CM.5.2 integrate other disciplines into the study of mathematics through simulations, research, and projects.**

**PLATO® Math Problem Solving**  
Math Fundamentals  
Math Problem Solving: Building a Highway  
Math Problem Solving: Smart Shopping

**Data Skills**  
Math Problem Solving: Planning a Playground  
Math Problem Solving: Growing Lilies

**Beginning Algebra**  
Math Problem Solving: Plan for Fishing Trip  
Math Problem Solving: Tunnel through Bald Mountain  
Math Problem Solving: Bean-Counting

**Intermediate Algebra**  
Math Problem Solving: Video Rental  
Math Problem Solving: Running a Race

**Advanced Algebra**  
Math Problem Solving: Car Rental  
Math Problem Solving: Building Boats  
Math Problem Solving: Saving the Birds

**Inspired solutions for teaching and learning™**



**Geometry and Measurement**

**Math Problem Solving: Planning a Park**

**Math Problem Solving: Shelf Space**

**Probability and Statistics**

**Math Problem Solving: The Fund Raiser**

**Math Problem Solving: Making the Grade**

**Math Problem Solving: Statistics for Quality**

**M.O.CM.5.3 determine possible outcomes using tree diagrams and the counting principles of permutations and combinations, develop conclusions and offer solutions for new situations, using real-world data.**

**PLATO® Math Problem Solving**

**Data Skills**

**Math Problem Solving: Planning a Playground**

**Math Problem Solving: Growing Lilies**

**Advanced Algebra**

**Math Problem Solving: Saving the Birds**

**Probability and Statistics**

**Math Problem Solving: The Fund Raiser**

**Math Problem Solving: Making the Grade**

**Math Problem Solving: Statistics for Quality**

**PLATO® Algebra 1, Part I**

**Special Topics (Alg 1.1)**

**Probability and Possible Outcomes (Alg 1.1)**

**Probability of an Event (Alg 1.1)**

**Solving Problems with Probability (Alg 1.1)**

**PLATO® Algebra 2, Part I**

**Probability (Alg 2.1)**

**Chance Experiments and Probability (Alg 2.1)**

**Determining the Probability of an Event (Alg 2.1)**

**Multiplication Principle of Counting (Alg 2.1)**

**Review: Probability (Alg 2.1)**

**M.O.CM.5.4 design and conduct probability investigations and then determine, analyze, and communicate the results.**

**PLATO Modules are not available for this learning expectation.**

**M.O.CM.5.5 collect and interpret data using various methods of displaying numerical data, including frequency distributions, graphs, histograms, stem-and-leaf plots, and box-and-whiskers plots, using technology when appropriate.**

**PLATO® Math Problem Solving**

**Data Skills**

**Math Problem Solving: Planning a Playground**

**Math Problem Solving: Growing Lilies**



**Beginning Algebra**  
**Math Problem Solving: Tunnel through Bald Mountain**

**Probability and Statistics**  
**Math Problem Solving: Making the Grade**  
**Math Problem Solving: Statistics for Quality**

**PLATO® Quality Fundamentals**  
**Charting and Graphing**  
**Charts and Graphs for Quality**  
**Interpreting Histograms**

**M.O.CM.5.6 relate the measures of central tendency and the measures of dispersion to a normal distribution.**

**PLATO® Math Problem Solving**  
**Data Skills**  
**Math Problem Solving: Growing Lilies**

**Probability and Statistics**  
**Math Problem Solving: Making the Grade**  
**Math Problem Solving: Statistics for Quality**

**PLATO® Algebra I, Part I**  
**Special Topics (Alg I.1)**  
**Mean, Median, and Mode (Alg I.1)**  
**Solving Problems with Mean, Median, and Mode (Alg I.1)**

**PLATO® Quality Fundamentals**  
**Charting and Graphing**  
**Interpreting Histograms**  
**Basic Statistics**

**M.O.CM.5.7 apply the measures of central tendency and the measures of dispersion to workplace situations.**

**PLATO® Math Problem Solving**  
**Data Skills**  
**Math Problem Solving: Growing Lilies**

**Probability and Statistics**  
**Math Problem Solving: Making the Grade**  
**Math Problem Solving: Statistics for Quality**

**PLATO® Algebra I, Part I**  
**Special Topics (Alg I.1)**  
**Mean, Median, and Mode (Alg I.1)**  
**Solving Problems with Mean, Median, and Mode (Alg I.1)**

**PLATO® Quality Fundamentals**  
**Charting and Graphing**  
**Interpreting Histograms**  
**Basic Statistics**

**M.O.CM.5.8 use statistical tools for workplace applications such as quality control, marketing and predicting trends.**



## **PLATO® Math Problem Solving**

### **Data Skills**

**Math Problem Solving: Planning a Playground**

**Math Problem Solving: Growing Lilies**

### **Advanced Algebra**

**Math Problem Solving: Saving the Birds**

### **Probability and Statistics**

**Math Problem Solving: Making the Grade**

**Math Problem Solving: Statistics for Quality**

## **PLATO® Quality Fundamentals**

### **Charting and Graphing**

**Interpreting Scatter Diagrams**

## **PLATO® Trigonometry**

### **Standard 3: Geometry**

**M.O.T.3.01** apply the right triangle definition of the six trigonometric functions of an angle to determine the values of the function values of an angle in standard position given a point on the terminal side of the angle.

- determine the value of the other trigonometric functions given the value of one of the trigonometric functions and verify these values with technology.
- using geometric principles and the Pythagorean Theorem, determine the six function values for the special angles and the quadrantal angles and use them in real-world problems.
- compare circular functions and the trigonometric function values to draw inferences about coterminal angles and co-functions.

### **PLATO® Geometry and Measurement 1**

#### **Geometry**

**Special Angles, Part 1**

**Special Angles, Part 2**

**The Pythagorean Theorem 1**

**Using Geometry**

### **PLATO® Geometry and Measurement 2**

#### **Introduction to Geometry**

**Supplementary and Complementary Angles**

**Two of a Kind**

#### **Triangles and Lines**

**The Pythagorean Theorem 2**

**Solving Right Triangle Problems**

#### **Solid and Coordinate Geometry**

**The Distance Formula**

### **PLATO® Trigonometry**

#### **Trigonometric Functions**

**Right Angle Trigonometry**

**Inspired solutions for teaching and learning™**



**Trigonometric Functions**  
**Circular Functions**

**Trigonometric Functions**  
**More Trigonometric Functions**  
**Graphing Trigonometric Functions**

**Trigonometric Identities and Equations**  
**Trigonometric Identities of Single Variable**

**PLATO® Algebra 2, Part 2**  
**Coordinates and Curves (Alg 2.2)**  
**Distance between 2 Points (Alg 2.2)**

**M.O.T.3.02 convert angle measures from degrees to radians (and vice versa) and apply this concept to • create a data set, analyze, and formulate a hypotheses to test and develop formulas for the arclength, area of a sector, and angular velocity and use the formula for application in the real-world. • compare and contrast the concepts of angular velocity and linear velocity and demonstrate by graphical or algebraic means relationship between them and apply to real-world problems.**

**PLATO® Geometry and Measurement 2**  
**Circles**  
**The Length of Arcs**

**PLATO® Trigonometry**  
**Trigonometric Functions**  
**Radian Measure**

**M.O.T.3.03 using various methods, basic identities and graphical representation • verify trigonometric identities • prove the sum and difference to two angles, double-angles, and half-angle identities**

**PLATO® Trigonometry**  
**Trigonometric Functions**  
**Circular Functions**

**Trigonometric Functions**  
**More Trigonometric Functions**  
**Graphing Trigonometric Functions**

**Trigonometric Identities and Equations**  
**Trigonometric Identities of Single Variable**  
**Trigonometric Identities II**

**M.O.T.3.04 justify and present the solutions of trigonometric equations that include both infinite and finite (over a restricted domain) solutions.**

**PLATO® Trigonometry**  
**Trigonometric Identities and Equation**  
**Trigonometric Equations**

**Trigonometric Functions**  
**Inverse Trigonometric Functions: Trigonometry**



**M.O.T.3.05** find the value of the inverse trigonometric functions using special angle trigonometric function values and technology. • draw inferences of restricted domain to recognize and produce a graph of the inverse trigonometric functions. • prove conjectures made about the solution of the equations such as  $x = \sin(\arcsin y)$ ,  $x = \sin(\arccos y)$  being sure to consider restrictions of the domain.

**PLATO® Trigonometry**  
Trigonometric Identities and Equation  
Trigonometric Equations

Trigonometric Functions  
Inverse Trigonometric Functions: Trigonometry

**M.O.T.3.06** identify a real life problem utilizing graphs of trigonometric functions and/or the inverse functions; make a hypothesis as to the outcome; develop, justify, and implement a method to collect, organize, and analyze data; generalize the results to make a conclusion; compare the hypothesis and the conclusion; present the project using words, graphs, drawings, models, or tables.

**PLATO® Math Problem Solving**  
Data Skills  
Math Problem Solving: Planning a Playground  
Math Problem Solving: Growing Lilies

Advanced Algebra  
Math Problem Solving: Saving the Birds

Probability and Statistics  
Math Problem Solving: Making the Grade  
Math Problem Solving: Statistics for Quality

**PLATO® Trigonometry**  
Trigonometric Functions  
Circular Functions

Trigonometric Functions  
More Trigonometric Functions  
Graphing Trigonometric Functions

Trigonometric Identities and Equations  
Trigonometric Identities of Single Variable  
Trigonometric Identities II

Trigonometric Identities and Equation  
Trigonometric Equations

Trigonometric Functions  
Inverse Trigonometric Functions: Trigonometry  
Laws of Sines and Cosines



**M.O.T.3.07 model periodic data sets using graphs, tables, and equations and use them to analyze real-world problems such as electricity and harmonic motion.**

PLATO Modules are not available for this learning expectation.

**M.O.T.3.08 investigate real-world problems within a project based investigation involving triangles using the trigonometric functions, the law of sines and the law of cosines, justify and present results.**

**PLATO® Math Problem Solving**

**Beginning Algebra**

**Math Problem Solving: Plan for Fishing Trip**

**Advanced Algebra**

**Math Problem Solving: Car Rental**

**PLATO® Trigonometry**

**Trigonometric Functions**

**Right Angle Trigonometry**

**Trigonometric Functions**

**Circular Functions**

**Trigonometric Functions**

**More Trigonometric Functions**

**Graphing Trigonometric Functions**

**Trigonometric Identities and Equations**

**Trigonometric Identities of Single Variable**

**Trigonometric Functions**

**Laws of Sines and Cosines**

**PLATO® Algebra 1, Part 1**

**Introduction to Functions (Alg 1.1)**

**Describing Functions with Equations, Tables, and Graphs (Alg 1.1)**

**PLATO® Algebra 2, Part 2**

**Functions and their Graphs (Alg 2.2)**

**Solving Problems with Linear Functions (Alg 2.2)**

**M.O.T.3.09 develop and test a hypothesis to find the area of a triangle given the measures of two sides and the included angle or the measures of three sides (Heron's formula) and use these formulas to find total area of figures constructed of multiple shapes.**

**PLATO® Math Problem Solving**

**Geometry and Measurement**

**Math Problem Solving: Planning a Park**

**PLATO® Geometry and Measurement 2**

**Transformations, Symmetry, and Area**

**Area of Any Triangle**

**Area of Trapezoids and Rhombuses**



**M.O.T.3.10** express complex numbers in polar form: • perform operations including adding, subtracting, multiplying, and dividing • evaluate powers and roots of complex numbers using De Moivre's Theorem; and graph complex numbers. • graph complex numbers in the polar coordinate plane and make conjectures about some polar graphs and real-world situations such as the paths that the planets travel.

PLATO Modules are not available for this learning expectation.

**M.O.T.3.11** create graphical and algebraic representations for performing vector operations and analyze these to solve real-world problems such as force analysis and navigation.

PLATO® Algebra 2, Part I  
Vectors (Alg 2.1)  
Introduction to Vectors (Alg 2.1)  
Vector Addition (Alg 2.1)

## Probability and Statistics

### Standard 5: Data Analysis and Probability

**M.O.PS.5.01** distinguish between experimental and theoretical probability.

PLATO Modules are not available for this learning expectation.

**M.O.PS.5.02** using a real-world problem solving investigation, create and interpret data using various methods of displaying circle graphs, histograms, and frequency curves, make predictions, include information concerning outliers, present and justify results.

PLATO® Math Problem Solving  
Data Skills  
Math Problem Solving: Planning a Playground  
Math Problem Solving: Growing Lilies  
Beginning Algebra  
Math Problem Solving: Tunnel through Bald Mountain  
Advanced Algebra  
Math Problem Solving: Saving the Birds  
Probability and Statistics  
Math Problem Solving: Making the Grade  
Math Problem Solving: Statistics for Quality  
PLATO® Quality Fundamentals  
Charting and Graphing  
Charts and Graphs for Quality  
Interpreting Histograms  
Basic Statistics



**M.O.PS.5.03 determine possible outcomes using tree diagrams and the counting principles of permutations and combinations.**

**PLATO® Math Problem Solving**  
Probability and Statistics  
Math Problem Solving: The Fund Raiser

**PLATO® Algebra 1, Part I**  
Special Topics (Alg 1.1)  
Probability and Possible Outcomes (Alg 1.1)  
Probability of an Event (Alg 1.1)  
Solving Problems with Probability (Alg 1.1)

**PLATO® Algebra 2, Part I**  
Probability (Alg 2.1)  
Chance Experiments and Probability (Alg 2.1)  
Determining the Probability of an Event (Alg 2.1)  
Multiplication Principle of Counting (Alg 2.1)  
Review: Probability (Alg 2.1)

**M.O.PS.5.04 express the chances of events occurring either in terms of a probability or odds.**

**PLATO® Math Problem Solving**  
Probability and Statistics  
Math Problem Solving: The Fund Raiser

**PLATO® Algebra 1, Part I**  
Special Topics (Alg 1.1)  
Probability of an Event (Alg 1.1)  
Solving Problems with Probability (Alg 1.1)

**PLATO® Algebra 2, Part I**  
Probability (Alg 2.1)  
Chance Experiments and Probability (Alg 2.1)  
Determining the Probability of an Event (Alg 2.1)  
Review: Probability (Alg 2.1)

**M.O.PS.5.05 use the normal distribution and the binomial distribution including Pascal's triangle, to determine probability of events.**

**PLATO® Quality Fundamentals**  
Charting and Graphing  
Basic Statistics

**M.O.PS.5.06 analyze measures of central tendency (mean, median, and mode) from data presented in a variety of forms such as charts, tables, and graphs or from data created through experimentation. .**

**PLATO® Math Problem Solving**  
Data Skills  
Math Problem Solving: Growing Lilies  
  
Probability and Statistics  
Math Problem Solving: Making the Grade



**PLATO® Algebra I, Part I**  
**Special Topics (Alg I.1)**  
**Mean, Median, and Mode (Alg I.1)**  
**Solving Problems with Mean, Median, and Mode (Alg I.1)**

**PLATO® Quality Fundamentals**  
**Charting and Graphing**  
**Basic Statistics**

**M.O.PS.5.07 interpret and calculate measures of dispersions (range and standard deviation) from data presented in a variety of forms such as charts, tables and graphs or from data created through experimentation.**

**PLATO® Math Problem Solving**  
**Probability and Statistics**  
**Math Problem Solving: Statistics for Quality**

**PLATO® Quality Fundamentals**  
**Charting and Graphing**  
**Basic Statistics**

**M.O.PS.5.08 analyze individual performances in terms of percentiles, z-scores, and t- scores.**

**PLATO® Quality Fundamentals**  
**Charting and Graphing**  
**Basic Statistics**

**M.O.PS.5.09 analyze the role of sampling, randomness, bias, and sample size in data collection and interpretation.**

**PLATO® Math Problem Solving**  
**Data Skills**  
**Math Problem Solving: Growing Lilies**  
  
**Probability and Statistics**  
**Math Problem Solving: Statistics for Quality**

**M.O.PS.5.10 test the validity of a hypothesis using statistical concepts including a t- test, justify results.**

**PLATO Modules are not available for this learning expectation.**

**M.O.PS.5.11 determine the correlation values for given data or for data generated by students and use the results to describe the association of the variables within the given data. Identify whether this association is systematic or predictable.**

**PLATO Modules are not available for this learning expectation.**

**M.O.PS.5.12 calculate the Chi-Square values for a given population.**

**PLATO Modules are not available for this learning expectation.**



**M.O.PS.5.13** perform a regression analysis on a set of data, either given or created through experimentation, and use the results to predict specific values of a variable. Identify the regression equation.

PLATO® Math Problem Solving  
Advanced Algebra  
Math Problem Solving: Saving the Birds

**M.O.PS.5.14** perform an analysis of variance (ANOVA) and interpret the results

PLATO Modules are not available for this learning expectation.

## Pre-Calculus

### Standard 2: Algebra

**M.O.PC.2.01** investigate and sketch the graphs of polynomials and rational functions by analyzing and using the characteristics of zeros, upper and lower bounds, y-intercepts, symmetry, asymptotes and end behavior, maximum and minimum points, and domain and range.

PLATO® Algebra 1, Part 1  
Introduction to Functions (Alg 1.1)  
Functions (Alg 1.1)

PLATO® Algebra 2, Part 2  
Coordinates and Curves (Alg 2.2)  
Parabola and Its Vertex (Alg 2.2)

Functions and their Graphs (Alg 2.2)  
Finding Values of a Function Using Its Rule (Alg 2.2)

Functions and their Graphs (Alg 2.2)  
Composite Functions (Alg 2.2)  
Domain Values of Composite Functions (Alg 2.2)

**M.O.PC.2.02** solve higher order polynomial equations utilizing techniques such as Descartes' Rule of Signs, upper and lower bounds, and the Rational Root Theorem.

PLATO® Algebra 2, Part 2  
Coordinates and Curves (Alg 2.2)  
Parabola and Its Vertex (Alg 2.2)

**M.O.PC.2.03** relate Pascal's Triangle and the Binomial Theorem; use both to expand binomials with positive integral exponents.

PLATO Modules are not available for this learning expectation.

**M.O.PC.2.04** establish and explain the inverse relationship between exponential and logarithmic functions; graph related functions and include their domain and range using interval notation.



**PLATO® Math Problem Solving**  
**Advanced Algebra**  
**Math Problem Solving: Saving the Birds**

**PLATO® Algebra 2, Part 2**  
**Exponential and Logarithmic Functions (Alg 2.2)**  
**Properties of Exponential Functions (Alg 2.2)**  
**Properties of Logarithmic Functions (Alg 2.2)**  
**Recognizing Graphs of Types of Functions (Alg 2.2)**  
**Solving Problems: Exponential and Logarithmic (Alg 2.2)**  
**Exponential Growth (Alg 2.2)**  
**Exponential Decay (Alg 2.2)**

**M.O.PC.2.05 compare laws of exponents to properties of logarithms; solve equations and practical problems involving exponential and logarithmic expressions, including natural and common logarithms; confirm solutions graphically and numerically.**

**PLATO® Math Problem Solving**  
**Advanced Algebra**  
**Math Problem Solving: Saving the Birds**

**PLATO® Algebra 1, Part 1**  
**Basic Number Ideas (Alg 1.1)**  
**Exponents: Product Rule (Alg 1.1)**  
**Exponents: Power Rule (Alg 1.1)**

**Math Sentences (Alg 1.1)**  
**Multiplying Monomials (Alg 1.1)**  
**Dividing Monomials (Alg 1.1)**

**PLATO® Algebra 1, Part 2**  
**Sets and Numbers (Alg 1.2)**  
**Positive and Negative Exponents (Alg 1.2)**  
**Integer Exponents and the Product Rule (Alg 1.2)**  
**Integer Exponents and the Quotient Rule (Alg 1.2)**  
**Integer Exponents and the Power Rule, Part 1 (Alg 1.2)**  
**Integer Exponents and the Power Rule, Part 2 (Alg 1.2)**  
**Review: Exponents and Radicals (Alg 1.2)**

**Polynomials and Factoring (Alg 1.2)**  
**Monomial Product (Alg 1.2)**  
**Monomial Quotient (Alg 1.2)**

**PLATO® Algebra 2, Part 2**  
**Numbers and their Properties (Alg 2.2)**  
**Rules for Exponents and Radicals (Alg 2.2)**  
**Exponential and Logarithmic Functions (Alg 2.2)**  
**Properties of Exponential Functions (Alg 2.2)**  
**Properties of Logarithmic Functions (Alg 2.2)**  
**Recognizing Graphs of Types of Functions (Alg 2.2)**  
**Solving Problems: Exponential and Logarithmic (Alg 2.2)**  
**Exponential Growth (Alg 2.2)**  
**Exponential Decay (Alg 2.2)**



**M.O.PC.2.06** solve problems involving the sum of finite and infinite sequences and series, including Sigma notation.

PLATO® Algebra 1, Part I  
Introduction to Functions (Alg 1.1)  
Patterns and Sequences (Alg 1.1)

**M.O.PC.2.07** use tables of values, graphs, conjectures, algebraic methods, and numerical substitution to find or estimate the limit of a function, a sequence or a series.

PLATO® Algebra 1, Part I  
Introduction to Functions (Alg 1.1)  
Patterns and Sequences (Alg 1.1)

**M.O.PC.2.08** analyze and describe the geometry of vectors, perform mathematical operations with vectors and use vectors to solve practical problems.

PLATO® Algebra 2, Part I  
Vectors (Alg 2.1)  
Introduction to Vectors (Alg 2.1)  
Vector Addition (Alg 2.1)

**M.O.PC.2.09** apply the method of mathematical induction to prove formulas and statements.

PLATO Modules are not available for this learning expectation.

**M.O.PC.2.10** apply parametric methods to represent motion of objects.

PLATO Modules are not available for this learning expectation.

**M.O.PC.2.11** use multiple representations, such as words, graphs, tables, and equations, to solve practical problems involving logarithmic, exponential, polynomial, rational, and radical functions; explain how the representations are related to each other, as well as to the problem.

PLATO® Math Problem Solving  
Beginning Algebra  
Math Problem Solving: Plan for Fishing Trip

Advanced Algebra  
Math Problem Solving: Car Rental  
Math Problem Solving: Saving the Birds

PLATO® Algebra 1, Part I  
Introduction to Functions (Alg 1.1)  
Describing Functions with Equations, Tables, and Graphs (Alg 1.1)

PLATO® Algebra 2, Part 2  
Functions and their Graphs (Alg 2.2)  
Equations and Graphs of Functions, Part 2 (Alg 2.2)  
Solving Problems with Linear Functions (Alg 2.2)



Exponential and Logarithmic Functions (Alg 2.2)  
Properties of Exponential Functions (Alg 2.2)  
Properties of Logarithmic Functions (Alg 2.2)  
Recognizing Graphs of Types of Functions (Alg 2.2)  
Solving Problems: Exponential and Logarithmic (Alg 2.2)  
Exponential Growth (Alg 2.2)  
Exponential Decay (Alg 2.2)

### **Standard 3: Geometry**

#### **M.O.PC.3.1 graph functions and conic sections using transformations.**

##### **PLATO® Math Problem Solving**

###### **Beginning Algebra**

**Math Problem Solving: Tunnel through Bald Mountain**

###### **Intermediate Algebra**

**Math Problem Solving: Video Rental**

##### **PLATO® Algebra 1, Part 1**

###### **Graphing Basics (Alg 1.1)**

**Graphing Linear Equations in 2 Variables (Alg 1.1)**

###### **Introduction to Functions (Alg 1.1)**

**Linear Patterns (Alg 1.1)**

**Graphs, Slopes, and y-Intercepts (Alg 1.1)**

##### **PLATO® Algebra 2, Part 1**

###### **Graphs and Linear Equations (Alg 2.1)**

**Solutions of Linear Equations as Ordered Pairs (Alg 2.1)**

**Graphing a Linear Equation in 2 Variables (Alg 2.1)**

**Using the Slope and y-Intercept to graph a Line (Alg 2.1)**

**Identifying Graphs from Their Equations (Alg 2.1)**

**Review: Graphs (Alg 2.1)**

##### **PLATO® Algebra 2, Part 2**

###### **Coordinates and Curves (Alg 2.2)**

**Parabola and Its Intercepts (Alg 2.2)**

**Ellipse (Alg 2.2)**

**Hyperbola (Alg 2.2)**

**Equations of Ellipses and Hyperbolas (Alg 2.2)**

###### **Functions and their Graphs (Alg 2.2)**

**Equations and Graphs of Functions, Part 2 (Alg 2.2)**

**Translations and Transformations (Alg 2.2)**

**Functional Values (Alg 2.2)**

**Composite Functions (Alg 2.2)**

#### **M.O.PC.3.2 analyze and describe properties of conic sections; explain the interrelationship among the properties; solve practical problems involving conic sections.**

##### **PLATO® Algebra 2, Part 2**

###### **Coordinates and Curves (Alg 2.2)**

**Parabola and Its Intercepts (Alg 2.2)**



Ellipse (Alg 2.2)  
Hyperbola (Alg 2.2)  
Equations of Ellipses and Hyperbolas (Alg 2.2)

### **Standard 5: Data Analysis and Probability**

**M.O.PC.5.1 perform an exponential and or logarithmic regression analysis on a set of data, write the regression equation and use the results to predict specific values of a variable.**

**PLATO® Math Problem Solving**  
**Advanced Algebra**  
**Math Problem Solving: Saving the Birds**

**PLATO® Algebra 2, Part 2**  
**Exponential and Logarithmic Functions (Alg 2.2)**  
**Properties of Exponential Functions (Alg 2.2)**  
**Properties of Logarithmic Functions (Alg 2.2)**  
**Recognizing Graphs of Types of Functions (Alg 2.2)**