

The Correlation of PLATO® instructional curricula to California Academic Content Standards (CACCS)

Mathematics

Grade 8–12

Linear Algebra

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PLATO Learning Correlation to the California Academic Content Standards

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 California Academic Content Standards, Mathematics, Grade 8–12, Linear Algebra.

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 alignment:

- PLATO® Algebra 1, Part 1 and 2
- PLATO® Algebra 2, Part 1 and 2
- PLATO® Geometry and Measurement 1 and 2
- PLATO® Trigonometry
- PLATO® Calculus 1 and 2
- PLATO® Quality Fundamentals

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

Component 1.0 Students solve linear equations in any number of variables by using Gauss-Jordan elimination.

PLATO Algebra 2, Part 1

- Linear Systems of Equations and Inequalities
- Solving Linear Systems of Equations: Matrices 1
- Solving Linear Systems of Equations: Matrices 2
- Review: Linear Systems

Component 2.0 Students interpret linear systems as coefficient matrices and the Gauss-Jordan method as row operations on the coefficient matrix.

PLATO Algebra 2, Part 1

- Linear Systems of Equations and Inequalities
- Solving Linear Systems of Equations: Matrices 1
- Solving Linear Systems of Equations: Matrices 2
- Review: Linear Systems

Component 3.0 Students reduce rectangular matrices to row echelon form.

PLATO Algebra 2, Part 1

- Linear Systems of Equations and Inequalities
- Solving Linear Systems of Equations: Matrices 1
- Solving Linear Systems of Equations: Matrices 2
- Review: Linear Systems

Component 4.0 Students perform addition on matrices and vectors.

PLATO Algebra 2, Part 1

- Vectors
- Vector Addition

Component 5.0 Students perform matrix multiplication and multiply vectors by matrices and by scalars.

PLATO Algebra 2, Part 1

- Vectors
- Vector Addition

Component 6.0 Students demonstrate an understanding that linear systems are inconsistent (have no solutions), have exactly one solution, or have infinitely many solutions.

PLATO Algebra 2, Part 1

- Linear Systems of Equations and Inequalities
- Solving Linear Systems of Equations: Graphs
- Classifying Linear Systems
- Review: Linear Systems

Component 7.0 Students demonstrate an understanding of the geometric interpretation of vectors and vector addition (by means of parallelograms) in the plane and in three-dimensional space.

PLATO Algebra 2, Part 1

- Vectors
- Introduction to Vectors
- Vector Addition

Component 8.0 Students interpret geometrically the solution sets of systems of equations. For example, the solution set of a single linear equation in two variables is interpreted as a line in the plane, and the solution set of a two-by-two system is interpreted as the intersection of a pair of lines in the plane.

PLATO Algebra 1, Part 1

- Graphing Basics
- Solving and Graphing Systems of Equations

PLATO Algebra 2, Part 1

- Linear Systems of Equations and Inequalities
- Solving Linear Systems of Equations: Graphs
- Solving Problems with Linear Systems
- Review: Linear Systems

Component 10.0 Students compute the determinants of 2×2 and 3×3 matrices and are familiar with their geometric interpretations as the area and volume of the parallelepipeds spanned by the images under the matrices of the standard basis vectors in two-dimensional and three-dimensional spaces.

PLATO Algebra 2, Part 1

- Vectors
- Introduction to Vectors
- Vector Addition