

# 3 Linear Systems

Content Area: **Math**  
Course(s): **Accelerated Algebra II**  
Time Period: **Marking Period 1**  
Length: **3**  
Status: **Published**

## Unit Overview

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This unit allows students to master solving systems of linear equations and inequalities.

## Enduring Understandings

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Interpret functions that arise in applications in terms of the context.

Analyze functions using different representations.

Build new functions from existing functions.

Interpret the structure of expressions.

Create equations that describe numbers or relationships.

Solve systems of equations.

Represent and solve equations and inequalities graphically.

## Essential Questions

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How does representing functions graphically help you solve a system of equations?

How does writing equivalent equations help you solve a system of equations?

How are the properties of equality used in the matrix solution of a system of equations?

## New Jersey Student Learning Standards (No CCS)

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MA.A-SSE.A.1a	Interpret parts of an expression, such as terms, factors, and coefficients.
MA.F-IF.B.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
MA.A-SSE.B.3	Choose and produce an equivalent form of an expression to reveal and explain properties

	of the quantity represented by the expression.
MA.F-IF.C.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
MA.A-CED.A.1	Create equations and inequalities in one variable and use them to solve problems.
MA.A-CED.A.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
MA.A-CED.A.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.
MA.A-CED.A.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.
MA.A-REI.C	Solve systems of equations
MA.A-REI.C.6	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
MA.A-REI.C.9	Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension $3 \times 3$ or greater).

## Interdisciplinary Connections

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LA.W.9-10.6	Use technology, including the Internet, to produce, share, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
SCI.HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
TECH.8.1.12.C.CS4	Contribute to project teams to produce original works or solve problems.

## Technology Standards

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TECH.8.1.12.C.CS4	Contribute to project teams to produce original works or solve problems.
TECH.8.1.12.D.CS3	Exhibit leadership for digital citizenship.
TECH.8.1.12.E.CS4	Process data and report results.
TECH.8.1.12.F.CS3	Collect and analyze data to identify solutions and/or make informed decisions.
TECH.8.1.12.F.CS4	Use multiple processes and diverse perspectives to explore alternative solutions.
TECH.8.2.12.C.CS2	The application of engineering design.

## 21st Century Themes/Careers

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CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
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## Financial Literacy Integration

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PFL.9.1.12.C.1	Compare and contrast the financial benefits of different products and services offered by a variety of financial institutions.
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PFL.9.1.12.C.2

Compare and compute interest and compound interest and develop an amortization table using business tools.

PFL.9.1.12.C.3

Compute and assess the accumulating effect of interest paid over time when using a variety of sources of credit.

## **Instructional Strategies & Learning Activities**

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- Use graphing calculator to explore tables.
- Spend time with modeling activities.
- Spend at least one day dedicated to modeling problems
- Use problems and activities from book involving modeling problems
- Provide access to online book
- Provide access to book pages and problems through Canvas and Twitter
- Provide access to review keys
- Assign ExamView Questions to provide practice and assessment.

## **Formative Assessments**

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- Daily homework checks
- ExamView Questions
- Chapter Test
- Exit Tickets
- Warm-ups

## **Summative Assessment**

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- Unit Test