



# Course Overview

High School | Algebra I - Last Updated on April 2, 2025

## DESCRIPTION

### K-12 Content Area | Mission & Philosophy Statement

- With confidence and perseverance, young people can tackle complex and novel mathematical challenges, becoming skilled problem solvers who take ownership over their learning process.
- Young people possess the ability to reason mathematically, make conjectures, solve problems and build understanding through effective dialogue and collaboration.
- Learners exhibit critical inquiry through the deliberate asking of questions and the integration of conceptual understanding, reasoning abilities, and procedural fluency.
- Strategically selecting materials, technology, and other resources support mathematical learning and aid in achieving mathematical goals. (NCTM, 2024)

### Course Description

Students will learn to think logically as they study number systems and properties, signed numbers, variables, expressions, open sentences, solving linear equations/inequalities with one variable, absolute value, exponents, scientific notation, how to construct graphs using a number line, and the coordinate plane. Students will also apply critical thinking skills as they learn to solve a variety of application problems. The Algebra 1 Keystone Exam will be administered at the conclusion of this course.

## STANDARDS

### Pennsylvania - High School - Keystone Algebra I

A1.1.1.1.1	A1.1.1.1.2	A1.1.1.2.1	A1.1.1.3.1	A1.1.1.4.1	A1.1.1.5.1	A1.1.1.5.2
A1.1.1.5.3	A1.1.2.1.1	A1.1.2.1.2	A1.1.2.1.3	A1.1.2.2.1	A1.1.2.2.2	A1.1.3.1.1
A1.1.3.1.2	A1.1.3.1.3	A1.1.3.2.1	A1.1.3.2.2	A1.2.1.1.1	A1.2.1.1.2	A1.2.1.1.3
A1.2.1.2.1	A1.2.1.2.2	A1.2.2.1.1	A1.2.2.1.2	A1.2.2.1.3	A1.2.2.1.4	A1.2.2.2.1
A1.2.3.1.1	A1.2.3.2.1	A1.2.3.2.2	A1.2.3.2.3	A1.2.3.3.1		

## COURSE OBJECTIVES

Specific objectives for this course are aligned to the Pennsylvania Core Standards for Mathematics and the Common Core State Standards for Mathematics.



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### ASSESSMENT TYPES

The following assessment types will be used during the course:

- Diagnostic Assessments
- Formative Assessments
- Summative Assessments

### SUGGESTED METHODS OF INSTRUCTION

Below is a list of suggested strategies for high-quality instruction in Mathematics:

- Instructional components outlined in the *Framework for Teaching* by Charlotte Danielson
- Teacher-Centered Instruction
- Inquiry-Based Learning
- Small Group Instruction
- Cooperative Learning
- Student-Centered/Constructivist Approach
- Project-Based Learning
- Flipped Classroom



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## RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
<p><i>Algebra 1</i>. Prentice Hall (2011) Pearson Publishing</p>	<ul style="list-style-type: none"> <li>• TI-Calculators 84Central Calculator Activities <a href="https://education.ti.com/en/84activitycentral/us/algebra-i">https://education.ti.com/en/84activitycentral/us/algebra-i</a></li> <li>• Nearpod <a href="https://nearpod.com/">https://nearpod.com/</a></li> <li>• Desmos <a href="https://www.desmos.com/">https://www.desmos.com/</a></li> <li>• Khanacademy <a href="https://www.khanacademy.org/math/algebra">https://www.khanacademy.org/math/algebra</a></li> <li>• ixL Online Learning Platform <a href="https://www.ixl.com/math/algebra-1">https://www.ixl.com/math/algebra-1</a></li> <li>• <i>Algebra 1</i> <a href="#">Prentice Hall Digital Resources 2011.</a></li> <li>• Geogebra: Interactive Algebra Resources <a href="https://www.geogebra.org/m/rfqkadzg">https://www.geogebra.org/m/rfqkadzg</a></li> <li>• Teacher created materials</li> </ul>	<ul style="list-style-type: none"> <li>• TI-84Plus TI-84CE Graphing Calculators (with software programs)</li> <li>• District Approved Technology</li> </ul>