



# Course Syllabus

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**COURSE TITLE:** Algebra I

**PREREQUISITE:** Grades 6 and 7 Mathematics

**DESCRIPTION:** In Algebra I, students continue to develop algebraic thinking and proportional reasoning skills necessary to solve problems. Students use algebra as a tool for solving a variety of practical problems. Tables, graphs, calculators, and computer simulations are used to interpret algebraic expressions, equations, and inequalities, and to analyze linear and quadratic functions.

**MAIN TOPICS** Identify and use the field properties for real numbers.

**Standards for  
Mathematical Practice**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.

Simplify polynomial, rational, and square root expressions.

Translate phrases and sentences into algebraic expressions and equations.

Add, subtract, and multiply, and divide polynomials.

Factor polynomials.

Investigate and analyze linear and quadratic function families.

Interpret graphs and identify relevant data. Compare and contrast multiple one-variable data sets.

Write, solve, and graph linear and quadratic equations and inequalities.

Solve systems of linear equations and systems of linear inequalities.

Interpret variation by examining mean absolute deviation, standard deviation, and z-scores in real-world contexts.

Determine the equations of curves of best fit, using mathematical models.

Solve application problems using a variety of techniques.

Incorporate the use of technology when appropriate.

**CREDIT INFO:** This course may provide a standard unit of credit for a Standard, Standard Technical, Advanced Technical, or Advanced Studies Diploma.