

ALGEBRA
GRADE 9
(2 Semesters)

COURSE OVERVIEW:

This is a college preparatory Algebra course. Students will work with real numbers to solve and graph equations: linear, quadratic; absolute value and exponential, solve systems of equations; and study exponents and radicals. The course aims to meet the curriculum standards of the National Council of Teachers of Mathematics as well as the Illinois Learning Standards.

UNITS OF INSTRUCTION:

Pre-Algebra, Linear Equations, Linear Inequalities, Systems, Powers/Exponent, Quadratics, Polynomials, Rational Equations, Functions, Radicals

STUDENT OUTCOMES:

1. Simplify and operate on numerical, algebraic, polynomial, rational radical and exponential expressions. (8B)
2. Solve linear, quadratic, literal, absolute value, rational, and variation equations and systems of equations. (8C, 8D)
3. Solve simple, compound, and absolute value inequalities. (7A, 8D)
4. Graph one variable equations, inequalities, and absolute value (number line) as well as linear equations, inequalities, absolute value, quadratics, and systems of linear equations (coordinate plane). (9A)
5. Identify and evaluate functions. (8B)
6. Represent and interpret data using various graphical models. (10A)
7. Translate and model real world situations using algebraic expressions, linear equations/inequalities/systems, absolute value equations, exponential equations, quadratic equations, and variation equations.
8. Communicate mathematical ideas orally and in writing.

This course addresses the follow state standards: 6A, 6B, 6C, 6D, 7A, 7C, 8A, 8B, 8C, 8D, 10A, and 10B.

MAJOR LEARNING EXPERIENCES TO ACHIEVE OUTCOMES:

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| 1.
2.
3.
4. | Exploration of mathematical concepts through individual, small group, and whole class lab investigations (to include graphing technologies).
Discussions of mathematical concepts to further develop understanding.
Summarize and apply learning to problem situations.
Assess mastery level using both formal and alternative assessments. |
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ADOPTED TEXT OR PRINCIPAL MATERIALS USED:

Larson, Kanold, Stiff. <i>Algebra 1: An Integrated Approach</i> . D.C. Heath Company.
