

## Eighth Grade Honors Algebra 1 Syllabus 2011 – 2012

### Instructor

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### Course Description

This high school level class is an introduction to the fundamental rules of Algebra. It is taught at an accelerated pace that is suitable for students with advanced mathematical ability and a strong interest in the subject. Algebra I includes the introduction of variables, constants, expressions, equations, and functions. The language of numbers is examined. Topics include solving equations, simplifying expressions, understanding order of operations, performing operations with positive and negative numbers, exploring polynomials, factoring, graphing (linear and quadratic equations), working with radicals, and expanding arithmetic knowledge.

Essential mathematical ideas, based on NCTM standards, form the foundation of this course. These ideas include developing the language of algebra, solving equations and inequalities, analyzing and representing linear and non-functions and solving linear equations, analyzing and summarizing data, and problem solving. Activities and inquiry are designed to develop student understandings.

### Course Assessment Benchmarks

Develop mathematical reasoning to support skill development and conceptual understanding

Exhibit persistence, flexibility, and appropriate independence when solving problems

Organize mathematical thinking by following logical steps and proper technique

Computes fluently with real numbers in all forms

Applies algebraic methods to represent relationships and solve problems

### Methods of Instruction

Classroom activities involve students in performance tasks designed to lead to understandings.

Teaching approaches include modeling, lecture, class discussion, multi-media presentations, written assignments, small group work, games, and activities with manipulatives. Lessons include visual, auditory, and kinesthetic components whenever possible. Students are encouraged to work together and to discuss their thinking. Individualized instruction is offered as appropriate.

### Course Materials

Required text: *Algebra 1* (Prentice Hall)

composition book/spiral notebook and binder

2 sharpened pencils, pen and eraser

graphing calculator

### Assessments

Students will demonstrate understanding with various kinds of performance tasks. Students will be assessed quarterly on progress based on benchmarks outlined above. Forms of assessment include daily homework, class work, projects, skill checks, quizzes and tests. Students will keep a portfolio of work to use as a resource; portfolio work will also support self-reflection.

### Weekly Schedule

This course is scheduled to meet daily. Class periods are rotated daily on the schedule so that no class is always the first or the last of the day. On Mondays, academic classes are 40 minutes long. Tuesday through Friday classes meet for 50 minutes.