

7th Grade Math  
2011-2012

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### Course Description

This course is designed to give students a solid foundation in the essential skills and concepts needed for further study in higher-level mathematics courses. Course activities and inquiry are designed to facilitate development of student understandings. Flexible pacing gives students time to synthesize concepts and master essential skills. Class activities require students to apply problem-solving skills, to think creatively and critically, and to compute fluently with rational numbers.

Three essential mathematical ideas, based on NCTM (National Council of Teachers of Mathematics) curriculum focal points, form the foundation of this course. These ideas are as follows: an understanding of and applying proportionality, including similarity; an understanding of and applying formulas to determine the surface areas and volumes of 3-dimensional shapes; and an understanding of operations on all rational numbers and solving linear equations.

### Learning Objectives and 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  
Compute fluently with rational numbers in all forms

### Preparation for Class / Course Materials

Required textbook: Mathematics, Course 2 (Prentice Hall); scientific calculator

### Methods of Instruction

Classroom activities involve students in performance tasks designed to lead to understandings. Teaching approaches include modeling, lecture, class discussion, technology, written assignments, small group work, and activities with manipulatives. Lessons include visual, auditory, and kinesthetic components whenever possible. Students are encouraged to work together and to communicate their thinking. Individualized instruction is offered as appropriate.

### Assessment

Students will demonstrate understanding with various kinds of authentic performance tasks. Their progress will be assessed based on benchmarks outlined above. Numerical course grades for each trimester are determined by a point system. Forms of assessment include performance tasks, daily homework, class work, projects, skill checks, quizzes and tests. The student handbook contains information about missing and late assignment policies.

### Projected Course Schedule

Units of study spread over 3 trimesters:

Unit 1 - data analysis

Unit 2 - decimals and integers

Unit 3 - fraction concepts and operations

Unit 4 - algebraic expressions, equations, and inequalities

Unit 5 - ratios, proportions, percents

Unit 6 - geometry and measurement

Unit 7 - patterns, rules, and functions