6th Grade Math --- Pre-Algebra

Course Code: MATH 6A
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Textbook:
Holt Pre-Algebra, 1992, Eugene D. Nichols, et al., ISBN: 0-03-047068-4

Note: Parents to order. When ordering this textbook, search by ISBN to avoid confusions.

Prerequisite
5th grade or higher math; Holt Pre-Algebra Chapter 1-8. .

Learning Objectives
The pre-algebra will be a two-semester course to prepare students for algebra courses in 7th and 8th grade. The course is a continuation of 5th grade pre-Algebra and covers the 2nd half of the textbook described above. Fall semester materials covered include analyzing data, the number line, the coordinate plane, square roots and right triangles. Spring semester will cover polynomials, equations in Geometry, volume and surface area. Due to limited number of classes offered, the instructor will make effort to inspire students' interests in mathematics and focus on students' understanding of the material rather than full coverage. Depending on students' progress, materials will be adjusted to ensure students full understanding of the material. Homework will be given weekly. Parents' supervision on homework is recommended.

Fall Semester

Analyzing data
Misleading graphs 09/12
Using data from graphs and tables
Organizing and presenting data 09/19
Measures of central tendency
Problem solving strategy: analyzing sample data
Stem and leaf plots 09/26
Box and whisker plots
Review 10/03

The number line
The set of real numbers 10/10
The addition property of inequality
The multiplication property of inequality 10/17
Problem solving strategy: Using generalizations
Solving inequalities 10/24

Conjunctions
Disjunctions

The coordinate plane

Coordinate graphs 10/31
Graphing linear equations
The standard form of a linear equation 11/07
The slope of a line
Problem solving strategies: revising the solution 11/14
Graphing equations and inequalities
Problem solving: using two variables 12/21
Translation

Review 12/05
Final Tests 12/19

Spring Semester

Square roots and right triangles

Problem solving exploration: square roots
Using square roots
The Pythagorean Theorem
Problem solving strategies: Formulating Questions
Similar triangles
The tangent ratio

Polynomials

Adding polynomials
Subtracting polynomials
Problem solving exploration: a multiplication model
Multiplying polynomials
Problem solving strategies: too much/too little data
Using the Distributive property
Special products
Common factors
Factoring a polynomial

Using equations

Angles and angle measures
Parallel and perpendicular lines
Problem solving strategies: extending patterns
Triangles
Polygons
Circumference and area
Circle graphs

Volume and surface area

Problem solving exploration: surface area and volume
Volume of a rectangular prism
Surface area of a rectangular prism
Volume of a cylinder
Volume of a pyramid
Volume of a cone
Problem solving strategies: making a model
Volume and area of a sphere