
NMH SUMMER SESSION

2010
Middle School Program
P R E – A L G E B R A

The goal of this course was to provide a strong foundation in some of the most important concepts of Algebra I. It was designed to give students the skills and confidence necessary to succeed in first-year algebra.

The course was geared toward giving each student, no matter the prior skill level or experience, an effective problem-solving plan, a strong foundation in the relevant vocabulary, and substantial practice with representative problems. Homework was assigned and collected daily. Learning opportunity assessment tests and quizzes were given regularly in order to chart each student's progress. The course met for 75 minutes a day, six days a week, for the five-week session. Homework was expected to take approximately one hour each night

TEXT: *Pre-Algebra* by Malloy, Price, Willard, and Sloan (Glencoe, 2003)

TOPICS COVERED:

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| Week 1: The Tools of Algebra
Numbers and Expressions
Variables and Expressions
Properties
Variables and Equations
Order Pairs and Relations
Integers and Absolute Value
Adding and Subtracting Integers
Multiplying and Dividing Integers | Multiplying and Dividing Monomials
Writing Fractions as Decimals
Rational Numbers
Multiplying and Dividing Rational Numbers
Adding and Subtracting Like Fractions
Least Common Multiples |
| Week 2: The Coordinate System
The Distributive Property
Simplifying Algebraic Expressions
Solving Equations by Adding or Subtracting
Solving Equations by Multiplying or Dividing
Solving Two-Step Equations
Writing Two-Step Equations
Using Formulas
Factors and Monomials
Powers and Exponents | Week 4: Adding and Subtracting Unlike Fractions
Central Tendency: Means, Medians, and Modes
Solving Equations with Rational Numbers
Arithmetic and Geometric Sequences
Ratios and Rates
Using Proportions
Scale Drawings and Models
Fractions, Decimals and Percents
Using the Percent Proportion
Probability and Prediction |
| Week 3: Prime Factorization
Greatest Common Factor
Simplifying Algebraic Fractions | Week 5: Solving Equations with Variables on Each Side
Solving equations with Grouping
Inequalities
Solving Inequalities: Addition and Subtraction
Introduction to Linear Equations |

Master Teacher: Nathaniel Hemphill
Northfield Mount Hermon School

Teaching Interns: Mark Davenport
Dartmouth College

Scott Middleton
Brown University