

Pre-Algebra

COURSE DESCRIPTION:

This course builds upon the essential skills or arithmetic as they apply to algebra. Real numbers and linear equations, linear inequalities, factoring, fractions, graphing and some elements of geometry are stressed.

PREREQUISITES: None

COURSE LENGTH: Two semesters

REQUIRED TEXT: None

COURSE OUTLINE:

Semester 1

Basics

- Integer math, including addition, subtraction, multiplication, and division of positive and negative integers, and orders of operations
- Absolute values
- Positive exponents, and exponents in orders of operations
- Factors, prime numbers, prime factors, GCF, and LCM

Fractions

- Fractions as division problems, reducing fractions using prime factors, mixed numbers, and improper fractions
- Multiplying and dividing fractions
- Adding and subtracting fractions
- Negative exponents and multiplying exponents

Decimals and Percents

- Decimal numbers
- Converting fractions to decimals and decimal to fractions
- Number sense regarding decimals
- Percents
- Converting decimals to percents and percents to decimals
- Converting fractions to percents and percents to fractions

Word Problems

- Translating English word problems into math equations
- Creating and using a translation dictionary
- Strategies for problems solving

Pre-Algebra (continued)

COURSE OUTLINE (continued):

Semester 2

More Number Basics

- Number properties
- Rounding
- Significant digits
- Practicing skills from last semester

Polynomials

- Definitions
- Adding and subtracting polynomials
- Multiplying and dividing polynomials
- Evaluating polynomials
- Practicing skills from last semester

Factoring and Basic Geometry

- Factoring basics
- Factoring polynomials
- Basic geometric shapes
- Formulas for perimeter and area
- Right triangles and the Pythagorean Theorem
- Practicing skills from last semester

Equations

- Solving equations
- Checking your work
- Cartesian coordinate system
- Plotting points
- Linear equations
- Graphing linear equations
- Solving linear equations

Probability and Data Analysis

- Definition of probability
- Expressing probabilities as fractions, decimals, and percents
- Graphical data representations
- Making predictions from data
- Mean, median, and mode
- Data analysis projects