

PETERS TOWNSHIP SCHOOL DISTRICT

CORE BODY OF KNOWLEDGE (CBK)

PRE-ALGEBRA

GRADE 7

For each of the sections that follow, students may be required to understand, apply, analyze, evaluate or create the particular concepts being taught.

COURSE DESCRIPTION

This course uses grade-level materials that include integers, variables, equations and inequalities with integers, fractions and decimals, data analysis, ratio, proportion and percents, geometry, graphing, probability, and measurement. This pre-algebra course is designed to prepare students for our 8th grade Algebra I Academic class.

STUDY SKILLS

- Along with mastery of basic math facts, students will be expected to practice concepts covered in class through nightly homework.
- Students are expected to show work in progression of math solutions.

MAJOR UNIT THEMES:

1. INTEGERS

- Variables & Expressions
- Order of Operations with all Operations
- Writing & Evaluating Expressions
- Adding, Subtracting, Multiplying & Dividing Integers
- The Coordinate Plane

2. REVIEW OF FRACTIONS & DECIMALS

- Addition, Subtraction, Multiplication & Division of Fractions
- Addition, Subtraction, Multiplication & Division of Decimals

3. EQUATIONS

- Properties of Numbers
- Simplifying Variable Expressions
- Solving 1, 2, and Multiple Step Equations
- Solving 1, and 2-Step Inequalities
- Solving Equations with Fractions & Decimals

4. EXPONENTS

- Order of Operations with exponents
- Exponents with Multiplication and Division Properties

5. PERCENTS

- Ratios, Proportions and Unit Rates
- Similar Figures and Scale Drawings
- Fractions, Decimals, & Percents
- Proportions & Equations Percents
- Percent of Change
- Markup & Discount

6. LINEAR FUNCTIONS & GRAPHING

- Relations & Functions
- Equations with Two-Variables
- Slope & Y-Intercept
- Scatter-plot
- Solving Systems of Linear Equations

7. GEOMETRY

- Angle Relationships & Parallel Lines

8. AREA & VOLUME

- Area of Parallelograms, Triangles, Trapezoids, Circles, Irregularly Shaped Figures
- Surface of Prisms & Cylinders
- Volume of Prisms & Cylinders

9. RIGHT TRIANGLE IN ALGEBRA

- Square Roots and Irrational Numbers
- The Pythagorean Theorem

10. DATA ANALYSIS

- Theoretical & Experimental Probability

11. POLYNOMIALS

- Adding, Subtracting & Multiplying Polynomials

MATERIALS (and Supplemental materials used in course):

- Pre-Algebra & Algebra I (Prentice Hall) & Supplemental Workbook Pages
- Kutasoftware.com
- Edhelper.com
- Mathematical Connections (Houghton & Mifflin)
- Algebra in Easy Steps (Stein)
- Algebra I (Morgan & Page)
- Middle School Math – course 3 (Scott Foresman)

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