



Mathematics
 Course: Prealgebra 7
 Middle School: Grade 7

Essential Course Information

- Course Revision
- Full Year - 5 Credits
- Prerequisite for Algebra I.
- Honors level requires proper placement according to district policy and guidelines

Course Overview

In this course, students will develop understanding of rational numbers, expressions, equations, and inequalities and utilize ratios and proportional reasoning, linear equations and inequalities, geometric relationship, and probability and statistics to model and solve application problems.

Unit	Estimated Class Time	Overview
<u>Unit 1 Rational Number Operations</u>	7 weeks	In this unit, students will examine the Real Number System by recognizing different representations of Real Numbers as fractions, decimals (rational and irrational), and percents. Arithmetic operations will be extended to include all positive and negative Rational Numbers while maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. Students will use the arithmetic of Rational Numbers to create number sentences to model real world situations involving positive and negative numbers.
<u>Unit 2 Expressions, Equations, and Inequalities</u>	6 weeks	In this unit, students will examine the arithmetic of rational numbers and variables to formulate expressions, equations, and inequalities to model and solve real world problems. Students will also utilize equivalent expressions as well as inverse operations to simplify expressions and formulate and solve two-step and multi-step equations and inequalities.
<u>Unit 3 Ratios and Proportional Relationships</u>	8 weeks	In this unit, students will extend their understanding of ratios and develop understanding of proportionality to solve real world problems including a wide variety of percent problems, scale drawings, and similar figures and objects. Students will also graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. A clear distinction between proportional and nonproportional relationships will be established.
<u>Unit 4 Linear Relationships</u>	4 weeks	In this unit, students will extend their knowledge of the constant of proportionality and proportional relationships to investigate other types of linear relationships. Students will understand that the slope of a line is a constant rate of change and that the additional constant is the y-intercept. Students will examine the effects of a negative slope and vertical shifts on the graph of linear relationships.
<u>Unit 5 Statistics and Probability</u>	8 weeks	In this unit, students will build on their previous work with single data distributions to compare two data distributions and address questions about difference between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples from drawing inferences.
<u>Unit 6 Geometry</u>	4 weeks	In this unit, the students will examine relationships among shapes to determine area, surface area, and volume. Students will continue solving problems involving area and circumference of a circle and surface area of three dimensional figures and extend their understanding to solve real world problems involving area, surface area, and volume of two-and-three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Content Continuum

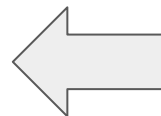
Math 6

Fundamentals of grade 6 mathematics including:

- expansion of the number system and the concepts of area, surface area, and volume
- introduction to ratios and proportional reasoning, expressions and equations
- Understanding of statistical variability and summarizing and describing distributions.

Prealgebra 7

Prealgebra 6



Algebra I

Topics in Algebra I including: notations for functions, linear functions, systems of equations, statistical analysis of data, operations with polynomials, quadratic functions, and exponential and radical functions.

INSTRUCTIONAL / SUPPLEMENTAL MATERIALS

1. Textbook: Prealgebra Glencoe(c) 2014.
2. Online resources and supplemental to enhance understanding of course content and skills
 - McGraw Hill ConnectED
 - Computer lab
 - and others.

All existing resources will be evaluated for alignment to new curriculum

KEY FEATURES OF REVISION

- Prealgebra 6 curriculum was last revised in 2015.
- Student access to digital resources and has expanded greatly.
- Integration of performance based assessments and common writing tasks.
- Incorporations of activities and assessments that develop 21st century skills.

Special Education sections of Prealgebra are offered.

Differentiation strategies will be included (DATE)

Mathematics Department
West Orange Public Schools
Emad Abu-Hakmeh, Supervisor 6-12

