WEST ORANGE PUBLIC SCHOOLS

MAthematics
Course: Prealgebra 6
Middle School: Grade 6

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
Unit 1 *Rational Numbers*	6 weeks	In this unit, the students will examine relationships among factors, multiples, divisors, and products and develop an understanding that rational numbers consist of positive numbers, negative numbers, and zero.
Unit 2 *Rational Number Operations*	7 weeks	In this unit, the students will examine rational numbers and extend addition, subtraction, multiplication, and division to all rational numbers - including positive and negative integers, fractions, and decimals - with a focus on the relationship between multiplication and division to divide fractions. They will use the arithmetic of rational numbers to create number sentences to model real world situations involving positive and negative numbers.
Unit 3 *Expressions, Equations, and Inequalities*	5 weeks	In this unit, the students will examine the arithmetic of rational numbers and variable terms by writing, interpreting, and using expressions, equations, and inequalities to model and solve real world problems. Students will understand that expressions in different forms can be equivalent, and they will use the properties of operations to rewrite expressions in equivalent forms. Students will also learn to solve one step, two step, and multi-step equations and inequalities. Students will understand that in order to solve equations and inequalities, they must maintain equality on both sides of an equation/inequality by using inverse operations.
Unit 4 *Ratios and Proportional Relationships*	6 weeks	In this unit, the students will create ratios and rates to describe quantities. Students will use ratios and rates to develop understanding of proportionality to solve real world problems. Students will apply their understanding of ratios and proportionality to solve a wide variety of percent problems. Students solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships.
Unit 5 *Geometry*	5 weeks	In this unit, the students will reason about relationships among shapes to determine area, surface area, and volume. Students will develop and justify formulas for areas of triangles, and parallelograms and use them to decompose shapes to find their areas. Students will extend their understanding of area 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.
Unit 6 *Statistics and Probability*	4 weeks	In this unit, the students will reinforce their understanding of numbers and begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different measures of center yield different values. Students recognize that a measure of variability can also be useful for summarizing data because data sets can also be distinguished by their variability.
Unit 7 *Linear Relationships*	2 weeks	In this unit, the 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 graphs of linear relationships.

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
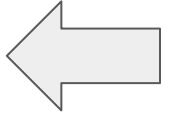
Algebra I

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: Pralgebra 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)

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