

Course: 8th Grade Algebra Horizon
Instructor: Mrs. Sepe
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Year: 2016-2017

Course Description:

This advanced **Algebra 1** course is designed for students with exceptional ability and interest in mathematics. Students in this course are expected to be independent learners with well-developed study habits. Upon entering this course, students are expected to be fluent in their ability to complete operations with rational numbers (decimals, fractions, percents, integers) without a calculator.

This challenging, rigorous curriculum is intended to provide students with an in-depth level of instruction, at an accelerated pace. Students will experience engaging activities that encompass a variety of grouping styles, offering students a wide array of learning opportunities to exchange ideas and develop the ability to communicate and reason mathematically. Mathematics will be expanded into and integrated with other subjects. Instructional emphasis is placed on the development of critical thinking skills and algebraic problem solving skills which provide the foundation for real world problem-solving.

The curriculum focuses on five critical areas:

- (1) Developing fluency in writing, interpreting, and translating between various forms of linear equations and inequalities, and using them to solve problems.
- (2) Understanding function notation, interpreting functions graphically, numerically, symbolically, and verbally, translating between representations and understanding the limitations of various representations.
- (3) Extending the properties of exponents to rational exponents and comparing and contrasting linear and exponential functions.
- (4) Applying an understanding of data in order to create linear models for data.
- (5) Extending understanding of functions to quadratic functions and creating and solving quadratic equations.

In addition, students will also apply the Eight Standards for Mathematical Practices throughout the course, along with the newly adopted New Jersey Student Learning Standards which prescribe that students experience mathematics as a coherent, useful, and logical subject.

Technology is incorporated throughout the year, including but not limited to: use of a TI-83 Plus graphing calculator, Publisher on-line resources and SMART Board where appropriate.

Textbook: *Big Ideas Math Algebra 1*, Larson, R. Boswell, Copyright 2015 by Big Ideas Learning, LLC.

