



SOUTHERN LEHIGH SCHOOL DISTRICT
5775 Main Street
Center Valley, PA 18034

Planned Course for Mathematics

Course: Middle School Algebra I

Standards:

This course is aligned to standards within the following Domains of the PA Core Standards:

8.EE Expressions and Equations
8.F Functions
8.G Geometry
8.SP Statistics and Probability

HS.F Number and Quantity
HS.D Algebra
HS.C Functions
HS.B Statistics and Probability

Course Description:

The K-12 mathematics program within Southern Lehigh School District will provide opportunities for all students to develop the ability to independently apply mathematical knowledge and skills to real-world situations. A robust and coherent curriculum will prepare students to think and reason mathematically while requiring them to demonstrate a deep understanding of mathematics. Students will develop critical thinking, problem solving, innovation, collaboration, and communication skills. A focus will be placed on using mathematics as a key to understanding the world, in order to meet the challenges of a dynamic society.

MIDDLE SCHOOL ALGEBRA I is an accelerated course that addresses mathematical content from Grade 8 and High School Algebra I. Instruction focuses on developing students' skills and accuracy in algebraic techniques and their applications. This course is designed to develop understanding of the real number system. It includes a study of number properties, formulating and reasoning about expressions and linear equations and inequalities, as well as systems of equations and inequalities. Students will use functions to describe quantitative relationships and model an association in bivariate data. In addition, students will explore polynomials and work with quadratics. Additionally, two- and three-dimensional space and figures using distance, angle, similarity, and congruence will be explored. Students will develop an understanding of and ability to apply the Pythagorean Theorem. Emphasis is placed on the development of conceptual understanding, logical reasoning, problem solving, and procedural fluency. Concepts are developed through authentic applications. **This is a Keystone course where students are required to take the Keystone Algebra I exam at the end of the course.**

Prerequisite(s):

- Successful completion of Extended Grade 6 Mathematics or Extended Grade 7 Mathematics; OR
- Successful completion of Grade 7 Mathematics and placement recommendation based on a holistic review of both student achievement and growth data

Measurable objectives to be attained by students:

Specific objectives for this course are aligned to the Pennsylvania Core Standards for Mathematics and the Common Core State Standards for Mathematics as outlined in the Scope and Sequence for Middle School Algebra I.

Instructional Strategies:

Below is a list of suggested strategies for high-quality instruction in mathematics:

- Instructional components outlined in the *Framework for Teaching* by Charlotte Danielson
- Use Concrete Representational Abstract (CRA) representations
- Promote productive struggle
- Promote mathematical discourse
- Use precise mathematical language

Estimated Instructional Time:

Approximately 46 minutes per day for one school year

Forms of Assessment to Measure Attainment of Course Objectives:

- Universal Screener
- Progress Monitoring
- Diagnostic Assessments
- Curriculum-based measures
- Benchmark Assessments
- Formative Assessments
- Summative Assessments

Resources:**Student Text Resources:**

Larson, Ron, and Laurie Boswell. *Big Ideas Math: A Common Core Curriculum Algebra I*. Big Ideas Learning, LLC, 2019.

- Student Text Printed Version
- Student Text Online Version
- Student Journal

Teacher Resources:

Larson, Ron, and Laurie Boswell. *Big Ideas Math: A Common Core Curriculum Algebra I*. Big Ideas Learning, LLC, 2019.

- Teacher's Guide Printed Version with Online Access
- Assessment Book
- Resources by Chapter

Technology:

- District approved supplemental technology

Other Resources:

- Manipulatives
- Teacher created resources
- District approved supplemental resources