South Williamsport Area School District
Course Plan Template

Teacher: Dave Rovenolt	**School Year:** 2014-2015
Course: Applied Algebra and Algebra C.C.	**Intended Grade Level:** 9th Grade

Course Summary:

Applied Algebra: This course is designed for students who struggled in 8th grade math and may need extra assistance while completing the Algebra Course. In Applied Algebra, there are two certified math teachers to help assist students in their areas of weaknesses. This course uses the same curriculum/materials as the Algebra I class, but course is designed to move at a slower pace, have adapted homework assignments, and a modified approach to the curriculum. The ultimate goal of this course is give every student the skills needed to pass the Algebra Keystone Exam and be prepared for 10th grade Geometry.

Algebra C.C.: This course is designed for students to take in conjunction with Algebra I. Students will receive additional instruction in areas where they are experiencing difficulty. The goal of this course is to help students to be successful in Algebra I and ultimately do better on the Algebra Keystone Exam.

Course Outcomes:

By the end of the course, students will know:

How to complete Algebra problems that fulfill the Common Core State Standards.

By the end of the course, students will be able to:

Compute, analyze, interpret, create, compare, and contrast Algebra problems that fulfill the Common Core State Standards.

Standards Targeted[1]

Common Core State Standards

Units of Study	
Units Topic	**Primary Learning Outcome**
Chapter 1: Expressions, Equations, and Functions	*Write algebraic expressions, use the order of operations, solve equations, represent and interpret relations and functions, use function notation, and interpret graphs of functions.
Chapter 2: Linear Equations	*Create equations that describe relationships, solve linear equations with one variable, and use

[1] Indicate primary Standards emphasis:
- PA Core - Math / ELA / Science & Technology / History & Social Studies
- National Content Standards (Name and Type)
- Industry Recognized Standards (Name and Type)

	formulas to solve real-world problems.
Chapter 3: Linear Functions	*Identify linear equations, intercepts, and zeros, graph and write linear equations, and use rate of change to solve problems.
Chapter 4: Equations of Linear Functions	*Write and graph linear equations in various forms, use scatter plots and lines of best fit, write equations of best fit using linear regression, and find inverse linear functions.
Chapter 5: Linear Inequalities	*Solve one-step and multi-step inequalities, solve compound inequalities involving absolute value, and graph inequalities.
Chapter 6: System of Linear Equations and Inequalities	*Solve systems of linear equations by graphing, substitution, and elimination and solve systems of inequalities by graphing.
Chapter 7: Exponents and Exponential Functions	*Simplify and perform operations on expressions involving exponents, extend the properties of integer exponents to rational exponents, use scientific notation, graph and use exponential functions.
Chapter 8: Quadratic Expression and Equations	*Add, subtract, and multiply polynomials, factor trinomials, factor differences of squares, graph quadratic functions, and solve quadratic equations.
Chapter 9: Quadratic Functions and Equations	*Solve quadratic equations by graphing, completing the square, and using the Quadratic Formula, analyze functions with successive differences and ratios, and identify and graph special functions.
Chapter 10: Radical Functions and Geometry	*Graph and transform radical functions, simplify, add, subtract, and multiply radical expressions, solve radical equations, use the Pythagorean Theorem, and find trigonometric ratios.
Chapter 11: Rational Functions and Equations	*Identify and graph inverse variations, identify excluded values of rational functions, multiply, divide, and add rational expressions, divide polynomials, and solve rational equations.
Chapter 12: Statistics and Probability	*Design surveys and evaluate results, use permutations and combinations, find probabilities of compound events, and design and use simulations.

Advanced Learner Recommendations
• Lessen number of practice problems, accelerate to higher level questions/problems such as real world word problems. • Allow more freedom when deciding how to solve a problem. • More project-based assessments. *Advanced Learners with GIEPs: All Specially Design Instruction is followed as outlined by the student's Gifted Individualized Education Plan. *Advanced Learners without GIEPs: Ability grouping (ex: Honors Geometry, Honors English, and Advanced Biology), performance-based assessments (ex: projects and papers), upper-level questioning, and critical thinking exercises.
Struggling Learner Recommendations
• Enroll in Algebra C.C. • Decrease number and difficulty of assignments • Allow students to correct failed assessments and explain process in order to receive a 70% • Have two teachers available to assist students with the areas of difficulty • Study guide materials • Detailed reviews prior to quizzes and tests • More project-based assessments *Struggling Learners with IEPs: All accommodations/modifications are followed as outlined by the student's Individualized Education Plan. Examples: extended time, small group testing, study guides, test read aloud, and modifications made to the regular education curriculum. *Struggling Learners without IEPs: Available during the daily FLEX period to ask questions or review materials, restating of directions, project-based assessments (ex: projects, homework, notebook grades), and instruction that incorporates the different types of learning modalities (ex: visual, auditory, or kinesthetic).