Curriculum Map: Algebra 1A

Course: ALGEBRA 1 Sub-topic: Algebra

Grade(s): 9

Course Description: Algebra 1A continues the algebraic concepts learned in 8th grade mathematics. Topics include solving linear equations and inequalities, graphing linear equations and inequalities, functions and their absolute value equations and inequalities, systems of equations and inequalities, exponents, polynomials, applications, and reasoning.

Unit: Unit 1 - Numbers and Expressions

Unit Description: UNIT 1: NUMBERS/EXPRESSIONS –

• TYPES / CLASSIFICATIONS OF NUMBERS

• PROPERTIES OF NUMBERS

• OPERATIONS WITH FRACTIONS

• SIMPLIFYING USING ORDER OF OPERATIONS

• EVALUATING EXPRESSIONS USING VARIABLES

• SIMPLIFYING EXPRESSIONS

• STANDARDIZED TEST APPLICATIONS(KEYSTONE/SAT/PSAT/ACT/ETC.) – WORD PROBLEMS

STANDARDS:

STANDARDS

STATE: Pennsylvania SAS Keystone Anchors (2010-2014)

A1.1.1 (Advanced)	Operations with Real Numbers and Expressions	
A1.1.1.1.1 (Advanced)	Compare and/or order any real numbers. Note: Rational and irrational may be mixed.	

Topic: 1.1 - Number Classifications
Minutes for Topic: 172

Topic: 1.2 - Number Properties
Minutes for Topic: 86

Topic: 1.3 - Operations with Fractions
Minutes for Topic: 86

Topic: 1.4 - Order of Operations / Evaluation
Minutes for Topic: 172

Topic: 1.5 - Combining Like Terms and Applications
Minutes for Topic: 172

Topic: 1.6 - Unit 1 Review and Test
Minutes for Topic: 172

Unit: Unit 2 - One-Variable Linear Equations

STANDARDS:

STANDARDS

STATE: Pennsylvania SAS Keystone Anchors (2010-2014)

A1.1.2 (Advanced)	Linear Equations	
A1.1.2.1 (Advanced)	Write, solve, and/or graph linear equations using various methods.	
A1.1.2.1.1 (Advanced)	Write, solve, and/or apply a linear equation (including problem situations).	
A1.1.2.1.2 (Advanced)	Use and/or identify an algebraic property to justify any step in an equation-solving process. Note: Linear equations only.	
A1.1.2.1.3 (Advanced)	Interpret solutions to problems in the context of the problem situation. Note: Linear equations only.	

Topic: 2.1 - Solving Equations
    Minutes for Topic: 172

Topic: 2.2 - Consecutive Integers
    Minutes for Topic: 172

Topic: 2.3 - Geometry Applications
    Minutes for Topic: 86

Topic: 2.4 - Money and Length Applications
    Minutes for Topic: 86

Topic: 2.5 - Unit 2 Review and Test
    Minutes for Topic: 172

Unit: Unit 3 - One-Variable Linear Inequalities

STANDARDS:	**STANDARDS**	
	STATE: Pennsylvania SAS Keystone Anchors (2010-2014)	
	A1.1.3.1.2 (Advanced)	Identify or graph the solution set to a linear inequality on a number line.	

Topic: 3.1 - Solve Linear Inequalities and Graph
    Minutes for Topic: 172

Topic: 3.2 - Solve Compound Inequalities and Graph
    Minutes for Topic: 258

Topic: 3.3 - Review All Inequalities
    Minutes for Topic: 86

Topic: 3.4 - Inequalities Applications
    Minutes for Topic: 344

Topic: 3.5 - Unit 3 Review and Test
    Minutes for Topic: 172

Unit: Unit 4 - Absolute Value

STANDARDS:	**STANDARDS**	
	STATE: Pennsylvania SAS Keystone Anchors (2010-2014)	
	A1.1.1.3 (Advanced)	Use exponents, roots, and/or absolute values to solve problems.	
	A1.1.1.3.1 (Advanced)	Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems. Note: Exponents should be integers from −10 to 10.	
	A1.1.3.1.1 (Advanced)	Write or solve compound inequalities and/or graph their solution sets on a number line (may include absolute value inequalities).	

Topic: 4.1 - Solving Absolute Value Equations
    Minutes for Topic: 258

Topic: 4.2 - Solving Absolute Value Inequalities
    Minutes for Topic: 258

Topic: 4.3 - Writing Absolute Values from Graph
    Minutes for Topic: 86

Topic: 4.4 - Absolute Value Applications
    Minutes for Topic: 172

Topic: 4.5 - Unit 4 Review and Test
    Minutes for Topic: 258

Unit: Unit 5 - Functions and Slope

STANDARDS:	**STANDARDS**	
	STATE: Pennsylvania SAS Keystone Anchors (2010-2014)	
	A1.2.1 (Advanced)	Functions	

Topic: 5.1 - Functions and Relations
Minutes for Topic: 86

Topic: 5.2 - Function Notation
Minutes for Topic: 86

Topic: 5.3 - Slope and Applications
Minutes for Topic: 516

Topic: 5.4 - Unit 5 Review and Test
Minutes for Topic: 172

Unit: Unit 6 - Graphing Linear Equations and Inequalities
STANDARDS:

STANDARDS

Topic: 6.1 - Graphing Linear Equations
Minutes for Topic: 258

Topic: 6.2 - Graphing Inequalities and Applications
Minutes for Topic: 344

Topic: 6.3 - Unit 6 Review and Test
Minutes for Topic: 258

Unit: Unit 7 - Writing Equations of Lines / Lines of Best Fit
STANDARDS:

STANDARDS

Topic: 7.1 - Writing Linear Equations
Minutes for Topic: 258

Topic: 7.2 - Writing Linear Inequalities
Minutes for Topic: 86

Topic: 7.3 - Linear Equations / Inequality Applications
Minutes for Topic: 86

Topic: 7.4 - Lines of Best Fit and Applications
     Minutes for Topic: 172

Topic: 7.5 - Unit 7 Review and Test
     Minutes for Topic: 172

Unit: Unit 8 - Systems of Equations

STANDARDS: **STANDARDS**

<u>STATE: Pennsylvania SAS Keystone Anchors (2010-2014)</u>

A1.1.2.2 (Advanced)	Write, solve, and/or graph systems of linear equations using various methods.	
A1.1.2.2.1 (Advanced)	Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination. Note: Limit systems to two linear equations.	
A1.1.2.2.2 (Advanced)	Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear equations.	

Topic: 8.1 - Graphing Systems of Equations
     Minutes for Topic: 172

Topic: 8.2 - Solve Systems by Substitution
     Minutes for Topic: 86

Topic: 8.3 - Solve Systems by Elimination
     Minutes for Topic: 86

Topic: 8.4 - Systems of Equations Applications
     Minutes for Topic: 86

Topic: 8.5 - Unit 8 Review and Test
     Minutes for Topic: 172

Unit: Unit 9 - Systems of Inequalities

STANDARDS: **STANDARDS**

<u>STATE: Pennsylvania SAS Keystone Anchors (2010-2014)</u>

A1.1.3.2 (Advanced)	Write, solve, and/or graph systems of linear inequalities using various methods.	
A1.1.3.2.1 (Advanced)	Write and/or solve a system of linear inequalities using graphing. Note: Limit systems to two linear inequalities.	
A1.1.3.2.2 (Advanced)	Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear inequalities.	

Topic: 9.1 - Graphing Systems of Inequalities
     Minutes for Topic: 172

Topic: 9.2 Applications
     Minutes for Topic: 86

Topic: Unit 9 - Unit 9 Review and Test
     Minutes for Topic: 172

Unit: Final Exam

Topic: Final Exam Review
     Minutes for Topic: 172

Topic: Final Exam
     Minutes for Topic: 180