High School (9-12)
Gateway High School
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Monroeville, PA 15146
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Gateway School District
Curriculum Map

Curriculum Map: Mathematics

Course: College Entrance Exam Preparation Course
Grade(s):

Unit 1: Introduction To The Math Test

Brief Summary of Unit	
Introduce students to the new SAT format and procedures.	
Stage One—Desired Results	
Established Goals: (Standards of Learning, Content Standards) 1. Know the basics of the SAT math test. 2. Review the topics included on the SAT math test. 3. Score and know the question type on the SAT math test.	
Understandings: 1. **Understand the format of the new SAT math test.** 2. **Which topics/questions are emphasized on the new SAT math test.** 3. **Scores and implications of the new SAT math test.**	**Essential Questions:** **1.** How can you use what you know to receive a desired score on the new SAT math test?
Stage Two—Assessment Evidence	
Performance Tasks:	
Other Evidence: :(quizzes, tests and so on)	
Stage Three—Learning Plan	

Unit 2: Approaching The Math Test

Brief Summary of Unit
Students should be able to use prior knowledge and strategies to make a plan for taking a standardized test.

Stage One—Desired Results
Established Goals: (Standards of Learning, Content Standards) 1. Plan ahead to avoid the stress of an exam. 2. Use the answer grid to enter open-ended answers correctly. 3. Use of problem solving strategies to answer questions quickly and reduce chances of making mistakes.

Understandings:	**Essential Questions:**
1. Understand that the knowledge of the test and procedures can better prepare for a favorable outcome.	1. How can the knowledge of the test procedures/instructions improve standardized test scores?

Stage Two—Assessment Evidence
Performance Tasks:
Other Evidence: :(quizzes, tests and so on)
Stage Three—Learning Plan

Unit 3: Fundamental Math Review

Brief Summary of Unit
Review the basic arithmetic that you will need to know for the SAT math test.
Stage One—Desired Results
Established Goals: (Standards of Learning, Content Standards) 1. Use the properties of integers and operations to solve problems. 2. Solve problems using factors, multiples, and fractions. 3. Change between units using ratios, percentages, proportions, and rates. 4. Use exponents, radicals, and scientific notation to simplify expressions.

Understandings:	**Essential Questions:**
1. Basic arithmetic will be needed to answer higher order questions for the SAT math test.	1. How can you use basic arithmetic to answer higher order SAT math questions?

Stage Two—Assessment Evidence
Performance Tasks:

Other Evidence: :(quizzes, tests and so on)

Stage Three—Learning Plan

Unit 4: Heart Of Algebra

Brief Summary of Unit

Overview of fundamental skills used in Algebra.

Stage One—Desired Results

Established Goals: (Standards of Learning, Content Standards)

1. Solve linear equations, inequalities in one and two variables to solve complex word problems.
2. Use algebraic expressions, absolute value, and functions to interpret and graph equations.

Understandings:	**Essential Questions:**
1. Equations and inequalities can be used to model and solve everyday real world situations. **2. Understand what the solution of an equation/inequality represents.**	1. How does representing functions graphically help you solve a problem? 2. How does writing and solving equations help obtain a better score standardized tests?

Stage Two—Assessment Evidence

Performance Tasks:

Other Evidence: :(quizzes, tests and so on)

Stage Three—Learning Plan

Unit 5: Passport To Advanced Math

Brief Summary of Unit

Students will cover important topics used for college-level math.

Stage One—Desired Results

Established Goals: (Standards of Learning, Content Standards)

1. Use factoring and polynomial expressions to solve quadratic equations.
2. Apply functions and use advanced equations to solve higher-level mathematics problems.
3. Use quadratic functions and their graphs to analyze and answer questions involving advanced mathematics topics.

Understandings:	**Essential Questions:**
1. Polynomials and factoring can be used to model and solve problems on the SAT math test. **2. Understand the applications of functions in real world situations.**	**1. How can you apply polynomials and factoring to answer SAT math test questions?** **2. How can functions be used for real-world applications?**

Stage Two—Assessment Evidence
Performance Tasks:
Other Evidence: :(quizzes, tests and so on)

Stage Three—Learning Plan

Unit 6: Problem Solving And Data Analysis

Brief Summary of Unit
Students will use measurements and conversions of quantities between different units. Students will also learn how to read different types of diagrams as well as how to interpret and analyze data.

Stage One—Desired Results
Established Goals: (Standards of Learning, Content Standards) 1. Interpret information in circle graphs, line graphs, bar graphs, pictographs, tables, charts, and histograms. 2. Determine and apply arithmetic mean of a set of data. 3. Determine and apply the median and mode of a set of data. 4. Apply the fundamental counting principle. 5. Identify and solve problems involving permutations and combinations. 6. Apply and determine the probabilities of simple, independent, and dependent events.

Understandings:	**Essential Questions:**
1. Analyzing data can be a key component to better performance on the SAT exam. **2. Strategies can be used to answer different types of statistical questions.** **3. Probability can be used to make predictions and draw conclusions.**	1. How can the collection, organization, interpretation, and display of data be used to answer SAT questions? 2. What counting strategy works best? 3. How can theoretical probabilities be used to make predictions or draw conclusions?

Stage Two—Assessment Evidence
Performance Tasks:

Other Evidence: :(quizzes, tests and so on)
Stage Three—Learning Plan

Unit 7: Additional Topics

Brief Summary of Unit	
We will cover advanced topics in geometry, trigonometry, and complex numbers that will appear on the SAT math test.	
Stage One—Desired Results	
Established Goals: (Standards of Learning, Content Standards) 1. Review lines, angles, and basics of introductory geometry. 2. Find angle measures and sides of special right triangles. 3. Convert angles to radian measures and use the unit circle. 4. Find the area of sectors of a circle and graph circles given the center or equation of the circle.	
Understandings: **1. Introductory geometry can be used in a small number of questions on the new SAT test.** **2. Right triangle properties and trigonometry can be used to find angles and lengths.** **3. Different parts of the circle can be used for real-world applications of circles.**	**Essential Questions:** 1. How can introductory geometry be used to succeed on the SAT test? 2. How can you find angles and lengths of figures using the properties of right triangles? 3. How can finding the area of a sector or length of an arc be used to solve problems in the real world.
Stage Two—Assessment Evidence	
Performance Tasks:	
Other Evidence: :(quizzes, tests and so on)	
Stage Three—Learning Plan	

Unit 8:

Brief Summary of Unit	
Stage One—Desired Results	
Established Goals: (Standards of Learning, Content Standards) 4.	
Understandings:	**Essential Questions:**

4.	**2.**
Stage Two—Assessment Evidence	
Performance Tasks:	
Other Evidence: :(quizzes, tests and so on)	
Stage Three—Learning Plan	

Unit 9:

Brief Summary of Unit	
Stage One—Desired Results	
Established Goals: (Standards of Learning, Content Standards) 5.	
Understandings: 5.	**Essential Questions:** **3.**
Stage Two—Assessment Evidence	
Performance Tasks:	
Other Evidence: :(quizzes, tests and so on)	
Stage Three—Learning Plan	