

Board Approved August 2017
Department Math Course Math Test Prep

Week	Marking Period 1
1	Introducing the SAT
2	Pre test: Practice Test/Scoring and discussion
3	Arithmetic Skills and Concepts
4	Arithmetic Skills and Concepts
5	Algebraic Methods
6	Algebraic Methods
7	Word Problems
8	Word Problems
9	Word Problems
10	Geometric Concepts and Reasoning
Week	Marking Period 2
11	Geometric Concepts and Reasoning
12	Special Problem Types
13	Special Problem Types
14	Word Problems
15	Word Problems
16	Algebra II Methods
17	Algebra II Methods
18	Algebra II Methods
19	Post Test/Scoring and Discussion
20	Prepare for exam/ take exam

Time Frame	Block – 2 week
Topic	
Introducing the SAT	
Essential Questions	
<ul style="list-style-type: none"> • What does the SAT look like? • How do you do your best on the SAT? • What does the SAT measure? • What math do you need to know? • Can you study for the SAT? 	
Enduring Understandings	
<ul style="list-style-type: none"> • Know what to expect on test day. • Become test wise. • Learn general math strategies. • Learn special math strategies. • Special math strategies for regular multiple-choice questions. • Review SAT math topics. • Take practice exams under test conditions. • Students will practice the skills needed to succeed on the SAT. • Students will learn about the test and its structure. • Students will learn about different strategies for taking each part of the test. • Students will learn about how the test is scored. • Students will learn to pace themselves and to skip some questions when necessary. • Students will understand the functions and importance of the test parts and the test as a whole. 	
Alignment to New Jersey Student Learning Standards	
<p>MA.9-12.HSA-REI.4 MA.9-12.HSS-CP.9 MA.9-12.HSS-MD.6 MA.9-12.HSA-CED.2</p>	
Key Concepts and Skills	
<ul style="list-style-type: none"> • Approaches to taking the SAT • How the SAT Math Sections are organized, timed and scored • Calculators and the SAT • Tips for boosting your score • Making Educated Guesses • Pacing and Timing 	
Learning Activities	
<ul style="list-style-type: none"> • Modeling Wild Guessing and Educated Guessing (Bean Probability Game)- Mastering the Math SAT – Paul Lawrence pg 363-364 • Know what you’re up Against pg 3 Barron’s • Math Strategies you need to know pg 23 Barron’s • Skills 1-5 from McGraw Hill’s Top 50 Skills for a Top Score SAT Math • Skills 1-5 Flash Cards from McGraw Hill’s Top 50 Skills for a Top Score SAT Math 	
Assessments	
<ul style="list-style-type: none"> • Pretest from McGraw-Hill’s Top 50 Skills for a Top Score SAT Math • Practice Test 1 from Barron’s SAT Math Workbook <p>http://www.propofs.com/sat/exams/sat_1/intro.php?xid=2&n=0&assign=</p>	

21st Century Skills				
Creativity	X	Critical Thinking	Communication	Collaboration
Life & Career Skills		Information Literacy	Media Literacy	
Interdisciplinary Connections				
Technology Integration				
<p>8.1 Educational Technology - All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge. http://sat.collegeboard.org/home http://sat.collegeboard.org/home?affiliateId=nav&bannerId=g-cbh-sat http://sat.collegeboard.org/register/sat-test-day-simulator http://sat.collegeboard.org/register/sat-test-day-checklist http://sat.collegeboard.org/practice/sat-skills-insight http://sat.collegeboard.org/practice/sat-skills-insight/math/band/700/skill/8 http://www.testpreppractice.net/SAT/sat-scores.html http://www.testpreppractice.net/SAT/the-sat.html http://www.testpreppractice.net/SAT/sat-downloads.html http://ineedapencil.ck12.org/ http://www.sparknotes.com/testprep/books/newsat/ http://sat.testfrenzy.com/fullsat.html</p>				

Time Frame	Block – 2 week
Topic	
Arithmetic Skills and Concepts	
Essential Questions	
<ul style="list-style-type: none"> • What is the essential vocabulary needed to answer math questions? • How can I remember all of the exponent rules? • Will my calculator ALWAYS get me the correct answer? (order of operations) • Will reviewing basic arithmetic skills and concepts help me get through the SAT math test easier? • Can I FINALLY overcome my fear of fractions? • Do we really use percent every day? 	
Enduring Understandings	
<ul style="list-style-type: none"> • Knowing that the “Basic Skills” learned are still needed. • The more Arithmetic Skills are mastered, the better your speed and accuracy on the SAT. 	
Alignment to New Jersey Student Learning Standards	
MA.9-12.HSA-RN.1	
Key Concepts and Skills	
<ul style="list-style-type: none"> • Numbers, Symbols and Variables • Powers and Roots • Divisibility and Factors • Number Lines and Signed Numbers • Fractions and Decimals • Operations with Fractions • Fraction Word Problems • Percent 	
Learning Activities	
<ul style="list-style-type: none"> • Create five SAT problems about this topic. Let your classmates solve them. 	

- Modeling Fractions with Connecting Cubes - Mastering the Math SAT – Paul Lawrence pg 84-85
- Number Sense and Estimation - Mastering the Math SAT – Paul Lawrence pg 76
- Computational Competency Test (Integers) - Mastering the Math SAT – Paul Lawrence pg 92
- Computational Competency Test (Order of Operations) - Mastering the Math SAT – Paul Lawrence pg 95-96
- Developing “Please Excuse My Dear Aunt Sally” - Mastering the Math SAT – Paul Lawrence pg 97-105
- Skills 6-11 from McGraw-Hill’s Top 50 Skills for a Top Score SAT Math
- Skills 6-11 Flash Cards from McGraw Hill’s Top 50 Skills for a Top Score SAT Math

Assessments

- Lesson 3-1 to 3-8 Tune-Up Exercises from Barron’s SAT Math Workbook
- Chapter 3 Test <http://www.freemathpracticetest.com/free-printable-math-tests-fractions.htm> <http://www.freemathpracticetest.com/free-printable-math-tests-algebra.htm> <http://www.freemathpracticetest.com/free-printable-math-tests-decimals.htm> http://www.proprofs.com/sat/exams/sat_1/intro.php?xid=5&n=0&asign=

21st Century Skills

Creativity	X	Critical Thinking	Communication	Collaboration
Life & Career Skills		Information Literacy	Media Literacy	

Interdisciplinary Connections

Arithmetic skills and concepts will always be a needed everyday life skill.

Technology Integration

8.1 Educational Technology - All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge. <http://www.ixl.com/math/algebra-1> <http://www.testpreppractice.net/SAT/sat-downloads.html> <http://www.proprofs.com/sat/study-guide/index.shtml>

Time Frame	Block – 2 week
Topic	
Algebraic Methods	
Essential Questions	
Do I need to completely solve every equation? Are you answering the question asked?	
Enduring Understandings	
<ul style="list-style-type: none"> • If you are taking too long on one equation, you are not doing the problem correctly. • Plug your solution of an equation back into the original equation to make sure that it works. • Algebraic methods need to be done quickly and accurately to work through your SAT correctly. 	
Alignment to New Jersey Student Learning Standards	
MA.9-12.HSA-APR.1 MA.9-12.HSF-IF.8 MA.9-12.HSA-REI.4 MA.9-12.HSA-SSE.3	

MA.9-12.HSA-REI.5-6

MA.9-12.HSA-CED.1

Key Concepts and Skills

- Solving Equations
- Equations with More Than One Variable
- Polynomials and Algebraic Fractions
- Factoring
- Quadratic Equations
- Systems of Equations
- Algebraic Inequalities

Learning Activities

- What’s the Rule? Write a verbal and symbolic description of the relationship between the variables - Mastering the Math SAT – Paul Lawrence pg 134-138
- The Evaluation Game (Variables) - Mastering the Math SAT – Paul Lawrence pg 146-147
- Using Cards to Model Variables - Mastering the Math SAT – Paul Lawrence pg 108-110
- The Addition/Subtraction/Multiplication Game (Review Systems of Equations) - Mastering the Math SAT – Paul Lawrence pg 320-321
- Create five SAT problems about this topic. Let your classmates solve them.
- Skills 12-15 from McGraw-Hill’s Top 50 Skills for a Top Score SAT Math
- Skills 12-15 Flash Cards from McGraw Hill’s Top 50 Skills for a Top Score SAT Math

Assessments

- Lesson 4-1 to 4-7 Tune-Up Exercises from Barron’s SAT Math Workbook
 - Chapter 4 Test
 - Test 3 & 4 from College Board – The Official SAT Study Guide
- <http://www.freemathpracticetest.com/free-printable-math-tests-algebra.htm>
http://www.proprofs.com/sat/exams/sat_1/intro.php?xid=7&n=0&assign=

21st Century Skills

Creativity	X	Critical Thinking	Communication	Collaboration
Life & Career Skills		Information Literacy	Media Literacy	

Interdisciplinary Connections

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<http://www.testpreppractice.net/SAT/sat-downloads.html> <http://www.proprofs.com/sat/study-guide/index.shtml>

Time Frame **Block – 3 weeks**

Topic

Word Problems

Essential Questions

- Can you identify key phrases that can be translated directly into mathematical terms?
- Do you know “less” and “less than” are NOT interchangeable?
- Do you need more or less days to solve the following problem ?
- - Four workers can build a house in 9 days. How many days would it take 3 workers to build

the same house? MORE than 9 days !!!

Enduring Understandings

- Representing one quantity in terms of another.
- Percent problems can be solving using algebraic equations and proportions.
- “Special types” of word problems are not so special once you learn their secret!
- Always use common sense when solving inverse variation problems.

Alignment to New Jersey Student Learning Standards

MA.9-12.HSA-SSE.2

Key Concepts and Skills

- Translating from English to Algebra
- Percent Problems
- Some Special Types of Word Problems
- Ratio and Variation
- Rate Problems

Learning Activities

- Create five SAT problems about this topic. Let your classmates solve them.
- Skills 16-23 from McGraw-Hill’s Top 50 Skills for a Top Score SAT Math
- Skills 16-23 Flash Cards from McGraw Hill’s Top 50 Skills for a Top Score SAT Math

Assessments

- Lesson 5-1 to 5-5 Tune-Up Exercises from Barron’s SAT Math Workbook
- Chapter 5 Test
- Test 5 & 6 from College Board – The Official SAT Study Guide
- http://www.proprofs.com/sat/exams/sat_2/intro.php?xid=2&n=0&asign=

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Creativity	X	Critical Thinking	Communication	Collaboration
Life & Career Skills		Information Literacy	Media Literacy	

Interdisciplinary Connections

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<http://www.proprofs.com/sat/>

<http://www.math-tests.com/sat-math-test.html>

Time Frame	Block – 2 weeks
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Topic

Geometric Concepts and Reasoning

Essential Questions

- What are the important relationships among angles formed when two lines intersect?
- What are the angle and side relationships in an equilateral triangle?
- What are the triangle inequality relationships?
- What are the angle and side relationships in polygons with three or more sides?
- What are the many properties needed to solve circle problems?
- What are the many properties needed to solve solid figure problems?
- How do you find the distance between two points?

Enduring Understandings

- Knowing and being able to apply the many facts of angle relationships.
- Applying the angle and side relationships in triangles to solve SAT problems.
- Polygon properties needed to solve SAT problems.
- Perimeter and area within an SAT style problem.
- Geometric concepts needed to solve an SAT style problem.
- Geometric reasoning needed to solve an SAT style problem.

Alignment to New Jersey Student Learning Standards

- MA.9-12.HSG-CO.9**
MA.9-12.HSG-SR.6-11
MA.9-12.HSG-C.1-4
MA.9-12.HSG-GMD.3
MA.9-12.HSG-GPE.4

Key Concepts and Skills

- Angle Relationships
- Special Triangles
- Triangle Inequality Relationships
- Polygons and Parallelograms
- Perimeter and Area
- Circles
- Solid Figures
- Coordinate Geometry

Learning Activities

- The Special Triangle Game (30-60-90 & 45-45-90 Triangles) - Mastering the Math SAT – Paul Lawrence pg 441-442
- Understanding Perimeter (Experiment) - Mastering the Math SAT – Paul Lawrence pg 200206
- Understanding Area (Experiment) - Mastering the Math SAT – Paul Lawrence pg 212-214
- Rectangle and Circle Game - Mastering the Math SAT – Paul Lawrence pg 219-220 Double Trouble (Volume Experiment) - Mastering the Math SAT – Paul Lawrence pg 227 Create five SAT problems about this topic. Let your classmates solve them.
- Skills 24-31 from McGraw-Hill’s Top 50 Skills for a Top Score SAT Math
- Skills 24-31 Flash Cards from McGraw Hill’s Top 50 Skills for a Top Score SAT Math

Assessments

- Lesson 6-1 to 6-8 Tune-Up Exercises from Barron’s SAT Math Workbook
- Chapter 6 Test
 - Test 7 & 8 from College Board – The Official SAT Study Guide
 - <http://www.freemathpracticetest.com/free-printable-math-tests-geometry.htm>
 - http://www.proprofs.com/sat/exams/sat_2/intro.php?xid=5&n=0&asign=

21st Century Skills

Creativity	X	Critical Thinking	Communication	Collaboration
Life & Career Skills		Information Literacy	Media Literacy	

Interdisciplinary Connections

Technology Integration

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<http://www.proprofs.com/sat/>

Time Frame	Block – 2 weeks		
Topic			
Special Problem Types			
Essential Questions			
<ul style="list-style-type: none"> • What are the three types of statistics that can be used to describe a set of numbers? • What are the many ways to solve counting problems? • How can you find the solution to probability problems? • Are you able to find within a graph the information needed to solve the problem? 			
Enduring Understandings			
<ul style="list-style-type: none"> • Arithmetic mean, median and mode can be used to describe a set of numbers. • Counting problems can be solved by making a list, using the fundamental counting principle and the Venn diagram. • Know the fundamentals of probability to solve an SAT type problem. • Recognizing the type of graph will help you answer questions involving graphs. 			
Alignment to New Jersey Student Learning Standards			
MA.9-12.HSS-CP.9 MA.9-12.HSS-MD.6 MA.9-12.HSA-CED.2			
Key Concepts and Skills			
<ul style="list-style-type: none"> • Average Problems • Counting Problems • Probability Problems • Graphs and Tables • Miscellaneous Problem Types 			
Learning Activities			
<ul style="list-style-type: none"> • The Symbol Game (Evaluating Expressions using symbols) - Mastering the Math SAT – Paul Lawrence pg 409-412 • Create five SAT problems about this topic. Let your classmates solve them. • Mean and Median Game – Mastering the Math SAT – Paul Lawrence pg 7 • Skills 32-39 from McGraw-Hill’s Top 50 Skills for a Top Score SAT Math • Skills 32-39 Flash Cards from McGraw Hill’s Top 50 Skills for a Top Score SAT Math 			
Assessments			
<ul style="list-style-type: none"> • Mystery Data (Interpreting Data) - Mastering the Math SAT – Paul Lawrence pg 344-347 • Lesson 7-1 to 7-5 Tune-Up Exercises from Barron’s SAT Math Workbook • Chapter 7 Test • Test 9 & 10 from College Board – The Official SAT Study Guide http://www.proprofs.com/sat/exams/sat_2/intro.php?xid=7&n=0&asign= 			
21st Century Skills			
Creativity	X	Critical Thinking	Communication
Life & Career Skills		Information Literacy	Media Literacy
Interdisciplinary Connections			

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Time Frame | **Block – 3 weeks**

Topic

Algebra II Methods

Essential Questions

- Do you know the rules of exponents?
- Can you solve an equation containing a radical?
- Can you solve an equation containing an absolute value?
- Can you work with functions?

Enduring Understandings

- Rules of exponents will be applied to many of the problems on the SAT.
- Radical equations are common on the SAT.
- Absolute value equations are difficult for many students.
- Functions within equations and graphs.

Alignment to New Jersey Student Learning Standards

MA.9-12.HSA-APR.2
MA.9-12.HSN-RN.2
MA.9-12.HSF-BF.1
MA.9-12.HSF-LE.2
MA.9-12.HSA-REI.12

Key Concepts and Skills

- Zero, Negative and Fractional Exponents
- Equations Involving Radicals and Exponents
- Absolute Value Equations and Inequalities
- Working with Functions
- Some Special Functions
- Reflecting and Translating Function Graphs

Learning Activities

- What’s Happening in Your Car? (Interpreting Graphs Experiment) - Mastering the Math SAT – Paul Lawrence pg 283-290
- Create five SAT problems about this topic. Let your classmates solve them.
- Skills 40-50 from McGraw-Hill’s Top 50 Skills for a Top Score SAT Math
- Skills 40-50 Flash Cards from McGraw Hill’s Top 50 Skills for a Top Score SAT Math

Assessments

- Lesson 8-1 to 8-6 Tune-Up Exercises from Barron’s SAT Math Workbook Chapter 8 Test
 - Practice Test 2 from Barron’s SAT Math Workbook
 - Test 2 from College Board – The Official SAT Study Guide
- http://www.ivyglobal.ca/sat/sat_math.asp

21st Century Skills

Creativity	X	Critical Thinking		Communication		Collaboration
Life & Career Skills		Information Literacy		Media Literacy		

Interdisciplinary Connections

Technology Integration

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http://www.ivyglobal.com/sat/practice_tests.asp