Township of Ocean Schools

Assistant Superintendent
Office of Teaching and Learning

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Meeting the needs of all students with a proud tradition of academic excellence.

DEPARTMENT Mathematics COURSE Math Test Prep

Curriculum Development Timeline

School: Ocean Township High School

Course: Math Test Prep

Department: Mathematics

Board Approval	Supervisor	Notes
August 2013	Janet Bluefield	Born Date
August 2019	Nichole Kerney	Review
August 2022	Gerard Marrone	Alignment to Standards

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DEPARTMENT Mathematics COURSE Math Test Prep

Township of Ocean Pacing Guide	
Week	Marking Period 1
1	Introducing the SAT
2	Arithmetic Skills and Concepts
3	Algebraic Methods
4	Word Problems
5	Word Problems
Week	Marking Period 2
6	Geometric Concepts and Reasoning
7	Special Problem Types
8	Word Problems
9	Algebra II Methods
10	Algebra II Methods

Core Instructional & Supplemental Materials including various levels of Texts
Collegeboard.org Accuplacer and ASVAB Test Prep Materials IXL Math NJSLA Released Questions Supplemental Textbook: Algebra II Textbook (Cengage)

Time Frame	1 Week (5 blocks)
Topic	
Introducing the SAT	

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#spartanlegacy

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Alignment to Standards

A.REI.4, S.CP.9, S.MD.6, A.CED.2

Learning Objectives and Activities

SWBAT answer the following questions:

- 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?

SWBAT demonstrate understanding of the following:

- 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.

Learning Activities:

- 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
- 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

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Assessments

Formative:

- Daily Practice Problems
- Teacher Observation
- Class Debate of Approaches/Mathematical Methods
- Entrance/Exit Cards
- Pretest from McGraw-Hill's Top 50 Skills for a Top Score SAT Math

Summative:

- Quizzes
- Practice Test 1 from Barron's SAT math workbook

Alternative:

- Observation Assessment with Problem-solving
- Kahoot/Quizizz

Interdisciplinary Connections

Science: MS-PS3-1: In lessons on comparing distance-time graphs to speed-time graphs students will construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

Career Readiness, Life Literacies, and Key Skills

Technology Integration

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.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will use internet based game sites such as Quizizz, Kahoot, and Quizlet live to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Supplemental instruction and math games will be presented using IXL Math and Video Tutor bigideasmath.com.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Students will use graphing calculators to use math tools strategically and attend to

DEPARTMENT Mathematics COURSE Math Test Prep

precision and will use Desmos in order to discover new concepts involving graphing and functions.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.12.TL.4: Collaborate in online learning communities or social networks or virtual worlds to analyze and propose a resolution to a real-world problem.

Students will utilize Geogebra to further investigate scale drawings and similar figures to demonstrate understanding of standards.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Students will access SAT sites to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Career Education

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11: Use technology to enhance productivity.

Time Frame	1 Week (5 blocks)

Topic

Arithmetic Skills and Concepts

Alignment to Standards

N.RN.1

Learning Objectives and Activities

SWBAT answer the following questions:

- What is the essential vocabulary needed to answer math questions?

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- 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?

SWBAT demonstrate understanding of the following:

- Knowing that the "Basic Skills" learned are still needed.
- The more Arithmetic Skills are mastered, the better your speed and accuracy on the SAT.

Learning Activities:

- 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
- 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

Formative:

- Classwork
- Teacher Observation
- Class Debate of Approaches
- Math Scavenger Hunt/Trail
- Lesson 3-1 to 3-8 Tune-Up Exercises from Barron's SAT Math Workbook

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Summative:

- Quizzes

Alternative:

- Kahoot/Quizizz
- Individual or group productive struggle assessment during introductory lessons

Interdisciplinary Connections

Science: MS-ETS1-1: Students estimate irrational numbers while defining the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles.

Career Readiness, Life Literacies, and Key Skills

Technology Integration

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- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will use internet based game sites such as Quizizz, Kahoot, and Quizlet live to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Supplemental instruction and math games will be presented using IXL Math and Video Tutor bigideasmath.com.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Students will use graphing calculators to use math tools strategically and attend to precision and will use Desmos in order to discover new concepts involving graphing and functions.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.12.TL.4: Collaborate in online learning communities or social networks or

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virtual worlds to analyze and propose a resolution to a real-world problem.
Students will utilize Geogebra to further investigate scale drawings and similar figures to demonstrate understanding of standards.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Students will access SAT sites to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Career Education

CRP4: Communicate clearly and effectively with reason.
CRP11: Use technology to enhance productivity.

Time Frame	1 Week (5 blocks)

Topic

Algebraic Methods

Alignment to Standards

A.APR.1, F.IF.8, A.REI.4, A.SSE.3, A.REI.5, A.REI.6, A.CED.1

Learning Objectives and Activities

SWBAT answer the following questions:

- I need to completely solve every equation?
- Are you answering the question asked?

SWBAT demonstrate understanding of the following:

- 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.

Learning Activities:

- Solving Equations

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

Formative:

- Daily Practice Problems
- Teacher Observation
- Class Debate of Approaches/Mathematical Methods
- Math Scavenger Hunt/Trail
- Lesson 4-1 to 4-7 Tune-Up Exercises from Barron's SAT Math Workbook
- Test from College Board – The Official SAT Study Guide

Summative:

- Quizzes

Alternative:

- Observation Assessment with Problem-solving
- Kahoot/Quizizz

Interdisciplinary Connections

Science: HS-ETS1-2: In the quadratics section students will design a solution to a complex real-world problem involving maximum/minimum/projectile motion by breaking it down into smaller, more manageable problems that can be solved through engineering.

Career Readiness, Life Literacies, and Key Skills

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Technology Integration

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.

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Students will use internet based game sites such as Quizizz, Kahoot, and Quizlet live to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

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- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Students will use graphing calculators to use math tools strategically and attend to precision and will use Desmos in order to discover new concepts involving graphing and functions.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.12.TL.4: Collaborate in online learning communities or social networks or virtual worlds to analyze and propose a resolution to a real-world problem.

Students will utilize Geogebra to further investigate scale drawings and similar figures to demonstrate understanding of standards.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Students will access SAT sites to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Career Education

CRP4: Communicate clearly and effectively with reason.

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CRP11: Use technology to enhance productivity.

Time Frame	3 Weeks (15 blocks)

Topic

Word Problems

Alignment to Standards

A.SSE.2

Learning Objectives and Activities

SWBAT answer the following 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?

SWBAT demonstrate understanding of the following:

- Representing one quantity in terms of another.
- Percent problems can be solved 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

Learning Activities:

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

Formative:

- Daily Practice Problems
- Khan Academy or IXL Practice
- Teacher Observation

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- Lesson 5-1 to 5-5 Tune-Up Exercises from Barron's SAT Math Workbook

Summative:

- Quizzes
- Test from College Board – The Official SAT Study Guide

Alternative:

- Observation Assessment with Problem-solving
- Kahoot/Quizizz

Interdisciplinary Connections

ELA: W.11-12.1: When students are justifying their reasoning on short answer and extended constructed response questions they write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
Science: HS-ETS1-2: Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

Career Readiness, Life Literacies, and Key Skills

Technology Integration

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.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will use internet based game sites such as Quizizz, Kahoot, and Quizlet live to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Supplemental instruction and math games will be presented using IXL Math and Video Tutor bigideasmath.com.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Students will use graphing calculators to use math tools strategically and attend to precision and will use Desmos in order to discover new concepts involving graphing and functions.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data

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set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.12.TL.4: Collaborate in online learning communities or social networks or virtual worlds to analyze and propose a resolution to a real-world problem.

Students will utilize Geogebra to further investigate scale drawings and similar figures to demonstrate understanding of standards.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Students will access SAT sites to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Career Education

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11: Use technology to enhance productivity.

Time Frame	1 Week (5 blocks)

Topic

Geometric Concepts and Reasoning

Alignment to Standards

G.CO.9, G.SRT.6, G.SRT.7, G.SRT.8, G.SRT.9, G.SRT.10, G.SRT.11, G.C.1, G.C.2, G.C.3, G.C.4, G.GMD.3, G.GPE.4

Learning Objectives and Activities

SWBAT answer the following 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?

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- 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?

SWBAT demonstrate understanding of the following:

- 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.

Learning Activities:

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

Formative:

- Daily Practice Problems
- Teacher Observation
- Math Scavenger Hunt/Trail
- Entrance/Exit Cards

Summative:

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- Quizzes

Alternative:

- Kahoot/Quizizz
- Lesson 6-1 to 6-8 Tune-Up Exercises from Barron's SAT Math Workbook

Interdisciplinary Connections

Career Readiness, Life Literacies, and Key Skills

Technology Integration

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.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will use internet based game sites such as Quizizz, Kahoot, and Quizlet live to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Supplemental instruction and math games will be presented using IXL Math and Video Tutor bigideasmath.com.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Students will use graphing calculators to use math tools strategically and attend to precision and will use Desmos in order to discover new concepts involving graphing and functions.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.12.TL.4: Collaborate in online learning communities or social networks or virtual worlds to analyze and propose a resolution to a real-world problem.

Students will utilize Geogebra to further investigate scale drawings and similar figures to demonstrate understanding of standards.

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- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Students will access SAT sites to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Career Education

CRP2: Apply appropriate academic and technical skills.
CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

Time Frame	1 Week (5 blocks)

Topic

Special Problem Types

Alignment to Standards

S.CP.9, S.MD.6, A.CED.2

Learning Objectives and Activities

SWBAT answer the following questions:

- 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?

SWBAT demonstrate understanding of the following:

- 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.

Learning Activities:

- Average Problems

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- Counting Problems
- Probability Problems
- Graphs and Tables
- Miscellaneous Problem Types
- 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 Mat

Assessments

Formative:

- Teacher Observation
- Class Debate of Approaches
- Entrance/Exit Cards

Summative:

- Quizzes
- Mystery Data (Interpreting Data) - Mastering the Math SAT – Paul Lawrence pg 344-347
- Problem-based Quiz

Alternative:

- Lesson 7-1 to 7-5 Tune-Up Exercises from Barron's SAT Math Workbook
- Kahoot/Quizizz

Interdisciplinary Connections

Career Readiness, Life Literacies, and Key Skills

Technology Integration

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.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will use internet based game sites such as Quizizz, Kahoot, and Quizlet live

to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Supplemental instruction and math games will be presented using IXL Math and Video Tutor bigideasmath.com.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Students will use graphing calculators to use math tools strategically and attend to precision and will use Desmos in order to discover new concepts involving graphing and functions.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.12.TL.4: Collaborate in online learning communities or social networks or virtual worlds to analyze and propose a resolution to a real-world problem.

Students will utilize Geogebra to further investigate scale drawings and similar figures to demonstrate understanding of standards.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Students will access SAT sites to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Career Education
CRP6: Demonstrate creativity and innovation. CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

Time Frame	2 Weeks (10 blocks)

Topic
Algebra II Methods

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Alignment to Standards

A.APR.2, N.RN.2, F.BF.1, F.LE.2, AREI.12

Learning Objectives and Activities

SWBAT answer the following 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?

SWBAT demonstrate understanding of the following:

- 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.

Learning Activities:

- 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
- 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

Formative:

- Classwork and Homework
- Khan Academy or IXL Practice
- Teacher Observation
- Graphic Organizer
- Math Scavenger Hunt/Trail
- Entrance/Exit Cards

Summative:

- Quizzes

- Problem-based Quiz/Test

Benchmark:

- Cumulative final exam with multiple choice, short answer, and extended constructed response questions.

Alternative:

- Observation Assessment with Problem-solving
- Kahoot/Quizizz

Interdisciplinary Connections

ELA: W.11-12.1: When students are justifying their reasoning on short answer and extended constructed response questions they write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

Career Readiness, Life Literacies, and Key Skills

9.1.12.CDM.8: When learning exponential equations students will compare and compute interest and compound interest.
9.3.ST.2: When determining a regression model that fits data students will use technology to acquire, manipulate, analyze and report data.

Technology Integration

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.

- 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem.

Students will use internet based game sites such as Quizizz, Kahoot, and Quizlet live to reflect on their learning progress.

- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.

Supplemental instruction and math games will be presented using IXL Math and Video Tutor bigideasmath.com.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Students will use graphing calculators to use math tools strategically and attend to precision and will use Desmos in order to discover new concepts involving graphing and functions.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data

set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Additional resources and extension activities will be posted on Google Classroom in order to encourage students to reflect on their learning and expand on their knowledge.

- 9.4.12.TL.4: Collaborate in online learning communities or social networks or virtual worlds to analyze and propose a resolution to a real-world problem.

Students will utilize Geogebra to further investigate scale drawings and similar figures to demonstrate understanding of standards.

- 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping

Students will access SAT sites to further investigate lesson concepts and demonstrate understanding of standards.

- 9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Career Education

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11: Use technology to enhance productivity.

Modifications (ELL, Special Education, At Risk Students, Gifted & Talented, & 504 Plans)

ELL:

- Work toward longer passages as skills in English increase
- Use visuals
- Introduce key vocabulary before lesson
- Teacher models reading aloud daily
- Provide peer tutoring
- Use of Bilingual Dictionary
- Guided notes and/or scaffold outline for written assignments
- Provide students with English Learner leveled readers.

Supports for Students With IEPs:

- Allow extra time to complete assignments or tests
- Guided notes and/or scaffold outline for written assignments

DEPARTMENT Mathematics COURSE Math Test Prep

- Work in a small group
- Allow answers to be given orally or dictated
- Use large print books, Braille, or books on CD (digital text)
- Follow all IEP modifications

At-Risk Students:

- Guided notes and/or scaffold outline for written assignments
- Introduce key vocabulary before lesson
- Work in a small group
- Lesson taught again using a differentiated approach
- Allow answers to be given orally or dictated
- Use visuals / Anchor Charts
- Leveled texts according to ability

Gifted and Talented:

- Create an enhanced set of introductory activities (e.g. advance organizers, concept maps, concept puzzles)
- Provide options, alternatives and choices to differentiate and broaden the curriculum
- Organize and offer flexible small group learning activities
- Provide whole group enrichment explorations
- Teach cognitive and methodological skills
- Use center, stations, or contracts
- Organize integrated problem-solving simulations
- Propose interest-based extension activities
- Expose students to beyond level texts.

Supports for Students With 504 Plans:

- Follow all the 504 plan modifications
- Text to speech/audio recorded selections
- Amplification system as needed
- Leveled texts according to ability
- Fine motor skill stations embedded in rotation as needed
- Modified or constrained spelling word lists
- Provide anchor charts with high frequency words and phonemic patterns