COURSE DESCRIPTION

Course Title: SAT Math
Course Number: 00295
Course Prerequisites: Completion of a full Algebra 1 Course

Course Description: SAT Math is an elective math credit. It is designed to give students practice in types of Algebra, Geometry, Trigonometry, Data Analysis, Probability, and Problem-Solving problems that would be found on the Scholastic Aptitude Test (SAT). Test taking strategies and problems solving skills will be emphasized. Scientific calculator use will be developed. Students are expected to have developed a knowledge base in mathematics and Algebra 1 before taking this course.   District mid-term exam and final exam required.

Suggested Grade Level: Grades 10-12
Length of Course: One Semester
Units of Credit: .5
PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:
CSPG #50 Mathematics (7-12)
To find the CSPG information, go to CSPG
Certification verified by the WCSD Human Resources Department: ☒Yes   ☐No

WCSD STUDENT DATA SYSTEM INFORMATION

Course Level: Academic
Mark Types: Check all that apply.
                ☒F – Final Average   ☒MP – Marking Period   ☒EXM – Final Exam

GPA Type: ☐ GPAEL-GPA Elementary   ☐ GPAML-GPA for Middle Level   ☒ NHS-National Honor Society
                ☒ UGPA-Non-Weighted Grade Point Average   ☒ GPA-Weighted Grade Point Average

State Course Code: 02993
To find the State Course Code, go to State Course Code, download the Excel file for *SCED*, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:
Title:	*SAT 2022*
Publisher:	McGraw-Hill Education (Professional Publishing)
ISBN #:	9781264266524
Copyright Date:	2021
WCSD Board Approval Date:	6/28/2020

Supplemental Materials: Kuta Software, Khan Academy, pdesas.org

Curriculum Document

WCSD Board Approval:
Date Finalized:	5/23/2022
Date Approved:	6/13/2022
Implementation Year:	2022-2023

SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

SCOPE AND SEQUENCE OF CONTENT, AND CONCEPTS

Marking Period 1: Algebra 1, Problem Solving, and Data Analysis

- Word Problems
- Order of Operations and Laws of Arithmetic
- Algebraic Expressions
- Conversions
- Linear Equations and Graphs
- Linear Inequalities and Graphs
- Absolute Value
- Linear Systems: Graphing and Solving
- Measures of Central Tendency and Data Spread
- Direct and Inverse Variations
- Rate and Ratio Problems
- Percentages and Percent Change
- Proportions and Scaling
- Tables and Venn Diagrams
- Conditional Probabilities from Tables
- Relations Analysis from Tables
- Scatterplots
- Nonlinear Relationships
- Inferences from Graphs and Data Displays
- Mid-Term Review and Assessment

Marking Period 2: Algebra 2, Geometry, Trigonometry, and More Algebra 2

- Functions
- Compositions and Transformations
- Quadratics: Expressions, Equations and Graphs
- Higher Order Equations and Systems
- Exponential Expressions and Equations
- Radical Expressions and Equations
- Rational Expressions and Equations
- Angles and Parallel Lines
- Triangles
- Coordinate Plane Geometry
- The Pythagorean Theorem
- Circles
- Areas and Volume
- Similarity
- Basic Trigonometry
- Imaginary and Complex Numbers
- Final Exam Review and Assessment

Marking Period 3: Algebra 1, Problem Solving, and Data Analysis

- Word Problems
- Order of Operations and Laws of Arithmetic
- Algebraic Expressions
- Conversions
- Linear Equations and Graphs
- Linear Inequalities and Graphs
- Absolute Value
- Linear Systems: Graphing and Solving
- Measures of Central Tendency and Data Spread
- Direct and Inverse Variations
- Rate and Ratio Problems
- Percentages and Percent Change
- Proportions and Scaling
- Tables and Venn Diagrams
- Conditional Probabilities from Tables
- Relations Analysis from Tables
- Scatterplots
- Nonlinear Relationships
- Inferences from Graphs and Data Displays
- Mid-Term Review and Assessment

Marking Period 4: Algebra 2, Geometry, Trigonometry, and More Algebra 2

- Functions
- Compositions and Transformations
- Quadratics: Expressions, Equations and Graphs
- Higher Order Equations and Systems
- Exponential Expressions and Equations
- Radical Expressions and Equations
- Rational Expressions and Equations
- Angles and Parallel Lines
- Triangles
- Coordinate Plane Geometry
- The Pythagorean Theorem
- Circles
- Areas and Volume
- Similarity
- Basic Trigonometry
- Imaginary and Complex Numbers
- Final Exam Review and Assessment

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Analyze word problems	CC.2.1.HS.F.2	MP1/MP3
Apply the order of operations and the Laws of Arithmetic to expressions	CC.2.2.HS.D.3 A1.1.1.3.1	MP1/MP3
Simplify expressions	A1.1.1.3.1	MP1/MP3
Use conversions in real-world and mathematical problem solving	CC.2.2.HS.D.2 A1.1.1.5.3	MP1/MP3
Create and interpret linear equations	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3	MP1/MP3
Solve linear equations	A1.1.2.1.1	MP1/MP3
Create and analyze linear graphs	CC.2.2.HS.D.7 CC.2.2.HS.D.10	MP1/MP3
Solve and interpret absolute value	A1.1.3.1.1	MP1/MP3
Solve and interpret inequalities	A1.1.3.1.1 A1.1.3.1.2 A1.1.3.1.3	MP1/MP3
Graph inequalities	CC.2.2.HS.D.7 CC.2.2.HS.D.10	MP1/MP3
Create, graph, and interpret linear systems	A1.1.3.2.1 A1.1.3.2.2	MP1/MP3
Solve linear systems	A1.1.3.2.1	MP1/MP3
Calculate and use statistics of average, median, and mode	A1.2.3.1.1 A1.2.3.2.1 A1.2.3.2.2	MP1/MP3
Analyze and draw inferences data spread and variations	A1.2.3.1.1	MP1/MP3
Use rates and ratios to solve real-world and mathematical problems	A1.1.2.1.1 A1.1.2.1.3 A1.2.2.1.1	MP1/MP3
Solve real-world and mathematical problems involving percentages and percent of change	CC.2.4.HS.B.1 A1.1.2.1.1 A1.1.2.1.3 A1.2.3.2.1 A1.2.3.2.2	MP1/MP3
Use proportions and scaling to solve real-world and mathematical problems	A1.1.2.1.1 A1.1.2.1.3	MP1/MP3
Analyze scatterplots, pie graphs, tables, histograms, and other graphs	A1.2.3.2.2	MP1/MP3
Explore and draw inferences from linear and nonlinear relationships in data	A1.2.3.2.3	MP1/MP3
Mid-Term Review and Assessment		MP1/MP3
• Review and extend knowledge of Algebra 1		MP1/MP3

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
• Review and extend knowledge of Problem Solving and Data Analysis		MP1/MP3
Define and represent functions	CC.2.2.HS.C.1 CC.2.2.HS.C.2 A2.2.1.1.3 A2.2.1.1.4 A2.2.2.1.1	MP2/MP4
Use compositions and transformations of functions	CC.2.2.HS.C.1 CC.2.2.HS.C.2 A2.2.2.1.1 A2.2.2.1.4	MP2/MP4
Add, subtract, multiply, and factor polynomials	A2.1.2.2 A2.1.2.2.1	MP2/MP4
Solve quadratic equations	A2.1.3.1.1	MP2/MP4
Analyze the graphs of quadratic equations	CC.2.2.HS.C.2 CC.2.2.HS.C.5	MP2/MP4
Solve and analyze polynomial equations	A2.1.3.1.2	MP2/MP4
Use and apply the Laws of Exponentials	A2.1.2.1.1 A2.1.2.1.2 A2.1.2.1.3	MP2/MP4
Sove exponential equations	A2.1.3.1.2	MP2/MP4
Use and apply the Laws of Radicals	A2.1.2.1.1 A2.1.2.1.2	MP2/MP4
Solve radical equations	A2.1.3.1.2	MP2/MP4
Calculate with and simplify rational expressions.	A2.1.2.2.2	MP2/MP4
Solve rational equations	A2.1.3.1.2	MP2/MP4
Use properties of angles formed by intersecting and parallel lines to find the measures of missing angles.	G.2.2.1.1 G.2.2.1.2	MP2/MP4
Identify and use properties of triangles	G.1.2.1.1 G.1.2.1.3	MP2/MP4
Apply coordinate geometry to prove geometric theorems algebraically	G.2.1.2.1 G.2.1.2.3	MP2/MP4
Use the Pythagorean Theorem to write and solve real-world and mathematical problems involving right triangles	G.2.1.1.1	MP2/MP4
Calculate the distance and mid-point between two points	G.2.1.2.1 G.2.1.2.3	MP2/MP4
Analyze graphs of circles in the coordinate plane	G.1.1.1.1 CC.2.3.HS.A.11	MP2/MP4
Calculate the area and circumference of circles	G.2.2.2.1 G.2.2.2.2	MP2/MP4
Use tangents of circles to find indicated measures	G.1.1.1.3	MP2/MP4
Use chords, arcs, and sectors to analyze areas and circumferences of circles	G.1.1.1.1 G.1.1.1.2 G.1.1.1.3	MP2/MP4

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Determine and describe the measures of perimeter, circumference, and area of two-dimensional, irregular figures, and circles	G.2.2.2.1 G.2.2.2.2 G.2.2.2.3 G.2.2.2.4 G.2.2.2.5	MP2/MP4
Determine and describe the measures of surface area and/or volume of three-dimensional shapes and figures	G.2.3.1.1 G.2.3.1.2 G.2.3.1.3	MP2/MP4
Identify and use the properties of congruent and similar polygons or solids	G.1.3.1.1	MP2/MP4
Identify and use proportional relationships in similar figures	G.1.3.1.2	MP2/MP4
Use trigonometric ratios to write and solve real-world and mathematical problems involving right triangles	G.2.1.1.2	MP2/MP4
Use the Pythagorean and Cofunction Identifies to solve real-world and mathematical problems involving right triangles	G.2.1.1.1 G.2.1.1.2 CC.2.2.HS.C.9	MP2/MP4
Simplify imaginary and complex numbers	A2.1.1.1.1 A2.1.1.1.2	MP2/MP4
Add, subtract, multiply, and divide complex numbers	A2.1.1.2.1 A2.1.1.2.2	MP2/MP4
Final Exam Review and Assessment		MP2/MP4
• Review and extend knowledge of Algebra 1		MP2/MP4
• Review and extend knowledge of Problem Solving and Data Analysis		MP2/MP4
• Review and extend knowledge of Algebra 2		MP2/MP4
• Review and extend knowledge of Geometry		MP2/MP4
• Review and extend knowledge of Trigonometry		MP2/MP4
• Review and extend knowledge of more Algebra 2		MP2/MP4

ASSESSMENTS

PDE Academic Standards, Assessment Anchors, and Eligible Content: The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

Formative Assessments: The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

Effective formative assessments for this course include:
Suggested but not limited to:

- Pre-assessments of prior knowledge (e.g., Entrance cards or KWL chart)
- Bellringers/Problems of the Day (PODs)
- Discussions
- Exit ticket
- Teacher observations/Questioning
- Graphic organizers (e.g., Venn Diagrams, word mapping, webbing, KWL chart, etc.)
- Outlining
- Cooperative learning
- Written work
- Quizzes
- Oral response
- Self-evaluation
- Homework
- Summarizing
- Note-taking

Summative Assessments: The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

Effective summative assessments for this course include:
Suggested but not limited to:

- Performance assessment
- Chapter/unit tests
- Quizzes
- Mid-term exam
- Final exam
- Projects
- Student presentations