Warren County School District

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: SAT Math

Course Number: 00295

Course Description and Prerequisites:

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SAT Math is a math elective credit. It is designed to give students practice in types of arithmetic, algebraic, and geometric problems that would be found on the Scholastic Aptitude Test (SAT) test. Test taking strategies and problem solving skills will be emphasized.

A student taking this course should have successfully completed the first two years of any of the High School Mathematics sequences and is presently enrolled in or has completed the third year of the sequence.

Suggested Grade Level: 10, 11, 12

Length of Course: __X_One Semester _____Two Semesters _____Other (Describe)_____

Units of Credit: 0.5

PDE *Certification and Staffing Policies and Guidelines (CSPG)* Required Teacher Certification(s) Mathematics CSPG 50

Certification verified by WCSD Human Resources Department:

__X__Yes ____No

Board Approved Textbooks, Software, Materials:

Title:
Publisher:
ISBN #:
Copyright Date:

Date of WCSD Board Approval:

BOARD APPROVAL:

Date Written: 12/11/06
Date Approved:
Implementation Year: 2007-2008

Suggested Supplemental Materials:

www.collegeboard.com
www.takesat.com
Appropriate Calculators
Nova Net or other similar software
Other on-line resources as they become available.

Course Standards

PA Academic Standards: (List by Number and Description)

2.1 – Numbers, Number Systems and Number Relationships
2.2 – Computation and Estimation
2.4 – Mathematical Reasoning and Connections
2.5 – Mathematical Problem Solving and Communication
2.6 – Statistics and Data Analysis
2.7 – Probability and Predictions
2.8 – Algebra and Functions
2.9 - Geometry
2.10 - Trigonometry

WCSD Academic Standards: None

Industry or Other Standards: None

WCSD EXPECTATIONS

WCSD K-12 Expectations for instruction in writing, reading, mathematics and, technology have been developed and revised annually. The teacher will integrate all WCSD Expectations into this planned instruction

SPECIAL EDUCATION AND GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (I.E.P.) or Gifted Individual Education Plan (G.I.E.P.).

SPECIFIC EDUCATIONAL OBJECTIVES/CORRESPONDING STANDARDS AND ELIGIBLE CONTENT WHERE APPLICABLE

(List Objectives, PA Standards #'s, Other Standards))
This is written using the Anchor Assessments

M11.A – NUMBERS AND OPERATIONS

x – performance assessed during that semester

	Performance Indicator	1	2	Assessment
A.	Review the number systems • Whole numbers • Integers • Rational Numbers • Irrational Numbers • Real Numbers • Complex numbers	**x**		Formative Assessments: • Evaluate written work • Performance assessment • Tests/quizzes • Problem-solving Summative Assessments: • Portfolio • Test Performance assessment • Practice SAT Tests
B.	Review Laws of Arithmetic	x		
C.	Apply the Laws of Arithmetic to Algebraic Expressions	x		
D.	Meaning of Exponents • Positive Exponents • Negative Exponents • Rational Exponents	x		
E.	Apply the Laws of Exponents to solve problems	x		
F.	Solve problems using Order of Operations	x		
G.	Square and Cube Root Radicals • Solve problems using a calculator • Solve problems without using a calculator • Simplify square root and cube root expressions	x		
H.	Review Divisibility Rules • Divisible by 2, 3, 4, 5, 6, 9	x		
I.	Find Factors and Multiples of Expressions • Monomials • Binomials • Trinomials • Polynomials • Simplify algebraic Fractions	x		

M11.B MEASUREMENT

	Performance Indicator	1	2	Assessment
A.	Classify, use, determine measurements of angles • Complementary • Supplementary • Alternate interior • Alternate Exterior • Vertical	**x**		Formative Assessments: • Evaluate written work • Performance assessment • Tests/quizzes • Problem-solving Summative Assessments: • Portfolio • Test Performance assessment Practice SAT Tests
B.	Calculate surface area and/or volume of • Prisms • Cylinders • Cones • Pyramids • Spheres	**x**		
C.	Find Perimeter, area, and circumference of polygons and circles	**x**		
D.	Find the measurement of a missing length given area, volume, circumference, or perimeter of a figure.	**x**		
E.	Use ratios to determine how changing linear measurements affects the perimeter, area, volume or circumference of a figure.	**x**		

M11.C – GEOMETRY

	Performance Indicator	1	2	Assessment
A.	Examine and review relationships between angles formed when two lines intersect.	**x**		Formative Assessments: • Evaluate written work • Performance assessment • Tests/quizzes • Problem-solving Summative Assessments: • Portfolio • Test Performance assessment Practice SAT Tests
B.	Examine and review relationships between angles formed when parallel lines are cut by a transversal.	x		
C.	Examine and review relationships between angles of triangles.	x		
D.	Use relationships of 30 – 60 right triangles to solve for sides of the triangle.	x		
E.	Use relationships of 45 – 45 right triangles to solve for sides of the triangle.	x		
F.	Use relationships of opposite sides of equal angles in isosceles and equilateral triangles to determine lengths of sides.	x		
G.	Use properties of right triangles to solve for lengths of sides and measures of angles of the triangle.	x		
.H.	Test three numbers as possible side lengths of triangles.	x		
I	Use side relationships to determine possible lengths or sides of triangles.	x		
J.	Review properties of polygons to determine sums of angles in the polygon and measure of exterior angles.	x		
K	Determine if polygons are similar and determine lengths of corresponding sides if necessary.	x		
L.	Review properties of circles to determine lengths of chords and measure of angles formed by intersecting chords.	x		
M.	Calculate the distance and/or midpoint between any two given points	x		
N.	Determine the slope of lines and use parallel and perpendicular line properties to determine quadrilateral relationships.	x		

M11.D – ALGEBRA CONCEPTS

	Performance Indicator	1	2	Assessment
A.	Solve linear equations in one and two variables.	**X**		Formative Assessments: • Evaluate written work • Performance assessment • Tests/quizzes • Problem-solving Summative Assessments: • Portfolio • Test Performance assessment Practice SAT Tests
B.	Solve quadratic equations in one and two variables.	X		
C.	Solve systems of equations and inequalities in two variables.	X		
D.	Solve systems of equations in three variables.	X		
E.	Determine equations of lines.	X		
F.	Determine if a relation is a function.	X		
G.	Identify domain, range, or inverse of a relation.	X		
H.	Solve compound inequalities and/or graph their solution including absolute value relationships.	X		
I.	Apply linear relationships to solve practical problems in both one and two variables.	X		
J.	Solve problems using factoring.	X		
K.	Solve quadratic problems by completing the square or use of the Quadratic formula.	X		
L.	Use algebraic properties to solve rate problems.	X		
.M.	Perform operations of addition, subtraction, multiplication, and division for polynomials.	X		
N.	Use Laws of Exponents to simplify algebraic expressions.	X		
O.	Solve rational equations.	X		
P.	Simplify radical expressions.	X		
Q.	Solve Radical equations.	X		
R.	Determine the domain and range of functions.	X		
S.	Determine the maximum and minimum value of functions.	X		

M11.E – DATA ANALYSIS AND PROBABILITY

	Performance Indicator	1	2	Assessment
A.	Find the mean, median, and mode for a set of data.	**x**		Formative Assessments: • Evaluate written work • Performance assessment • Tests/quizzes • Problem-solving Summative Assessments: • Portfolio • Test Performance assessment Practice SAT Tests
B.	Determine a weighted average for a set of data.	X		
C.	Solve problems using the multiplication principle of counting.	X		
D.	Use Venn diagrams to solve problems.	X		
E.	Evaluate the factorial of a number.	X		
F.	Use properties of permutations and combinations to solve problems.	X		
G.	Find the probability of independent and dependent events.	X		
H.	Determine the geometric probability of a situation.	X		
I.	Solve problems using box-whisker plots.	X		
J.	Estimate or calculate values based on information given in circle, line, or bar charts.	X		
K.	Use probability to predict outcomes.	X		

ASSESSMENTS

PSSA Assessment Anchors Addressed: The teacher must be knowledgeable of the PDE Assessment Anchors and/or Eligible Content and incorporate them into this planned instruction. Current assessment anchors can be found at pde@state.pa.us.

Formative Assessments: The teacher will develop and use standards-based assessments throughout the course.

Portfolio Assessment: ____ Yes __X__ No

District-wide Final Examination Required: __X__ Yes ____ No

Course Challenge Assessment:
This course is designed as a tool to help students improve their skills in math and improve the score they may receive on the SAT test. There should be no course challenge as this would defeat the purpose of the course.

REQUIRED COURSE SEQUENCE AND TIMELINE

(Content must be tied to objectives)

Content Sequence	Dates
1. Practice Exams	12 days
2. Arithmetic	10 days
3. Algebra	25 days
4. Geometry	20 days
5. Miscellaneous	
a. Strategies	3 days
b. Statistics	5 days
c. Probability	5 days
d. Open Ended Questions	5 days

WRITING TEAM:

Virginia Barrett

Kellie Blasco

WCSD STUDENT DATA SYSTEM INFORMATION

1. Is there a required final examination? __X__ Yes ____ No
2. Does this course issue a mark/grade for the report card?
   ___X_ Yes____ No
3. Does this course issue a Pass/Fail mark? ____ Yes __X__ No
4. Is the course mark/grade part of the GPA calculation?
   __X__ Yes ____ No
5. Is the course eligible for Honor Roll calculation?__X__ Yes ____ No
6. What is the academic weight of the course?
   ____ No weight/Non credit __X__ Standard weight
   ____ Enhanced weight