WARREN COUNTY SCHOOL DISTRICT

Planned Instruction

Course Title: Applied Geometry III

Course Number: 00212

Suggested Educational Level: 11th grade

Suggested Periods Per Week: 5   **Length of Period**:   40 minutes

Suggested Length Of Course: 1 year

Units Of Credit (If Appropriate): 1

Date Written: November, 2004   **Date Approved**: June 13, 2005

Date Reviewed: 2004-2005   **Implementation Year**: 2005-2006

Teacher Certification Required: BS/BA Secondary Education/Mathematics

Standards Addressed (code):

2.1.11	Numbers, Number Systems and Number Relationships
2.2.11	Computation and Estimation
2.3.11	Measurement and Estimation
*2.4.11	Mathematical Reasoning and Connections
2.5.11	Mathematical Problem Solving and Communication
2.6.11	Statistics and Data Analysis
2.8.11	Algebra and Functions
2.9.11	Geometry
2.10.11	Trigonometry
	* This is a component of all other standards taught

Relationship to Other Planned Instruction: This is the third course of a three year applied mathematics sequence. Completion of the first two years of this sequence must have been taken and passed prior to this course.

Prerequisites: Applied Algebra I and Applied Algebra II with at least a 60% average in each course or Algebra I and Algebra II with an average in each between 60% and 70%.

Special Requirements   Graphing and scientific Calculators, Graphing software such as Geometer's Sketchpad. Modifications will be made for students with special needs.

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COURSE DESCRIPTION:

Applied Geometry III is the third course of a three-year Career sequence of Applied Algebra I, Applied Algebra II and Applied Geometry III. It is designed to assist students in learning to think mathematically. It will include a review of algebra topics as they apply to geometry beginning with basic terms, usage and definitions, up through properties of simply or complex figures, right triangle trigonometry, and estimating and interpreting maximum and minimum values of functions in problem situations.

Outline of Content Sequence and Recommended Time (weeks or days):

15 days	I.	Math Reasoning
10 days	II.	Algebra Review
60 days	III.	Probability, Statistics and Analysis
65 days	IV.	Geometry
15 days	V.	Trigonometry
<u>5 days</u>	VI.	Calculus concepts (baby steps)
170 days		

Specific Educational Objectives to be Taught:

I. Math Reasoning (2.4.11A, 2.4.11D)

> August -
> September

- ❑ Truth Tables
- ❑ Inductive Reasoning
- ❑ Deductive Reasoning
- ❑ Venn Diagram

II. Algebra Review (2.1.11A, 2.5.11B, 2.5.11C, 2.8.11F, 2.8.11G)

> September
>
> October

- ❑ Equations and Inequalities
- ❑ Review of Exponents
- ❑ Simplify Square roots
- ❑ Review of Polynomials
- ❑ Review of Systems of Equations

III. Probability, Statistics, and Analysis(2.3.11A, 2.6.11A, 2.7.11A, 2.7.11C, 2.7.11E)

- ❑ Simple Probability
   - i. Odds
   - ii. Dependent Events
   - iii. Independent Events
- ❑ Compound Events

> November -
> December

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- ❑ Compare and Calculate Odds
- ❑ Permutations and Combinations
    - i. Estimate and predict outcomes
- ❑ Scatter Plot and Line of best fit
- ❑ Calculate mean, median and mode (from a table, line plot and stem and leaf)
- ❑ Create box and whisker plot
    - i. Range and quartile
    - ii. Interquartile range
    - iii. Outliers
- ❑ Data representation box-and-whisker plots, stem-and-leaf plots, line and double line graphs, bar and double bar graphs and circle graphs.
- ❑ Answer questions based on display data

IV. Geometry(2.5.11A, 2.4.11B, 2.9.11B, 2.9.11C, 2.9.11D, 2.9.11E, 2.9.11G, 2.9.11I, 2.10.11B, s.10.11I, 2.11.11B)

January - March

- ❑ Recognize and define geometry terms starting with point, line, segment, ray, etc.
- ❑ Distance and midpoint formulas
- ❑ Compare and measure angles
- ❑ Parallel and perpendicular lines
- ❑ Complementary, supplementary, alternate interior, alternate exterior, vertical, reflexive angles
- ❑ Calculate perimeter and circumference of inscribed and circumscribed (simple or complex figures, reference PSSA formula sheet)
- ❑ Calculate area and Surface Area
    (Simple or complex figures, reference PSSA formula sheet)
- ❑ Identify and use properties of Triangles
    - i. SAS
    - ii. SSS
    - iii. ASA
    - iv. Application of Pythagorean Theorem
- ❑ Identify and use properties of Quadrilaterals
- ❑ Identify and use properties of Circles
- ❑ Congruent and Similar Polygons
- ❑ Calculate volume

V. Trig(2.5.11A, 2.10.111B, 2.10.11I)

April

- ❑ Right Triangle
- ❑ Applications of Right Triangles
- ❑ Graphs of trig functions

VI. Calculus concepts (baby steps) (2.11.11B)

May

- ❑ Estimate maximum and minimum values of a function
- ❑ Interpret maximum and minimum values in problem situations
- ❑ Estimate areas under curves

Summative Assessments: WILL BE DEVELOPED BY A TEAM OF MATH INSTRUCTORS OF WCSD TO BE USED DISTRICT-WIDE.

Required/Approved Textbooks and Materials:

    Book Title: Geometry: Integration, Applications, Connections
    Publisher: Glencoe/McGraw-Hill
    ISBN #: 0-07-822880-8
    Copyright: 2001
    Date of Adoption: August 12, 2002

    Book Title: Algebra One
    Publisher: Glencoe/McGraw-Hill
    ISBN #: 0-07-822894-8
    Copyright: 2001
    Date of Adoption: August 12, 2002

Listed below is the developmental sequence to be followed in writing planned instruction.

I.   Complete a scope and sequence chart of the standards (K-12).

II.   Identify and place in written form major specific objectives to be taught.

III.   Identify and place in written form summative assessments of the course.

IV.   Complete Content Sequence and Recommended time frame.

V.   Complete Formative Assessment (optional).

VI.   Complete 2 or 3 sample units (optional).

VII.   Select recommended materials included integrated technology hardware and software.