

WARREN COUNTY SCHOOL DISTRICT

Planned Instruction

Course Title Advanced Mathematics – Grade 6

Course Number: 00209

Prerequisite: Completion of Math 5, 80 percent or better on the proficiency test, 93 percent average in the first three weeks, and a teacher recommendation
Advanced Math is for the student who

Suggested Educational Level(s): Grade 6

Suggested Periods Per Week: 5 **Length of Period:** 40 min.

Suggested Length Of Course: 1 year

Units Of Credit (If Appropriate): 1

Date Written: February 2, 2000 **Date Approved:** June 26, 2000

Date Reviewed: _____ **Implementation Year:** 2000/2001

Teacher Certification Required: Elementary Certification

Standards Addressed (code):	2.1.8	2.8.8
	2.3.8	2.9.8
	2.6.8	2.11.8
	2.7.8	

Relationship to Other Planned Instruction:

- Social Studies
- Spelling
- Science
- Health

Prerequisites: Students must take a placement test to determine eligibility to take the class, and maintain a strict policy of eligibility to maintain statues in Advanced math.

Special Requirements:

- Manipulatives
- Calculators with Fraction capabilities

Standards addressed (code and description):

2.1 Number Sense, properties and operations

2.3 Measurement

2.6 Data Analysis, Statistics and Probability

2.7 Data Analysis, Statistics and Probability

2.8 Algebra and Functions

2.9 Geometry

2.11 Calculus

Administrative Addendum to Mathematics 6:

Sequencing/Timeline Effective school year 2005-2006. K-6 math teachers must use the instructional timeline below in teaching this planned instruction.

J. Hugh Dwyer, Assistant Superintendent – 8/8/05

Approximately 85 days – September, October, November, December and**January**

Chapter 2 Multiplication and Division of Whole Numbers and
Decimals

Chapter 1 Numeration

Chapter 4 Introduction to Fractions

Chapter 5 Addition and Subtraction of Fractions

Chapter 6 Multiplication and Division of Fractions

Approximately 15 days – February

Chapter 8 Ratio and Probability

Chapter 9 Percents

Chapter 3 Data and Statistics

Approximately 30 days – March, April

Chapter 7	Measurement
Chapter 10	Geometry
Chapter 11	Perimeter, Area, Volume

Approximately 10 days – May, June

Chapter 12	Integers
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Outline of Content Sequence and Recommended Time (weeks or days):

85 days	I. Numbers, Number Systems and Number Relationship with Basic Computations and Estimation (2.2), Remediation and Enrichment
30 days	II. Geometry (2.9), Measurement and Estimation (2.3), Trigonometry, Problem Solving, Calculus, Remediation and Enrichment.
15 days Solving	III. Probability and Predictions, Statistics and Data Analysis, Problem and Estimation, Remediation and Enrichment
30 days Solving, and Enrichment	IV. Mathematical Reasoning and Connections/Mathematical Problem Communication, Problem Solving and Estimation, Remediation and Enrichment
<u>20 days</u>	V. Algebra, Functions, Problem Solving, Estimation, Remediation and Enrichment
180 days	

Specific Educational Objectives to be Taught:

I. Numbers, Number Systems, and Number Relationship (2.1.8 A-G)

1. Basic operations with whole numbers (+, −, ×, ÷) (2.1.8 A, 2.2.8 B)

- estimation and rounding (2.2.8 B)
- terms/vocabulary
- order of operations (2.2.8 A)

2. Decimals (+, −, ×, ÷) (2.2.8 B)

- place value (2.1.8A)
- comparing and ordering (2.1.8A)
- estimation and rounding (2.2.8B)
- equivalent forms (2.1.8A)

3. Multiples/Factors/Divisibility

- exponents (2.1.8 E)

4. Fractions (+, −, ×, ÷) (2.2.8 B)

- terms/vocabulary
- comparing and ordering (2.2.8 A and 2.4.8 B)
- estimation (2.2.8 B)
- equivalent forms (2.1.8 A)

5. Percents/Ratios/Proportion/Probability

- solving ratios/proportions (2.1.8 D)
- scale drawings (2.7.8 B and 2.3.8 F)
- addition, subtraction, multiplication, division (2.2.8 B)
- terms/vocabulary (2.1.8 D)
- equivalent forms (2.1.8 A)

6. Integers (+, −, comparing, ordering) (2.1.8 F)

- equivalent forms (2.1.8 A)
- estimation (2.2.8 B)

II. A-Geometry (2.9), B-Measurements & Estimation (2.3), C-Concepts of Calculus (2.11)

A- Geometry

1. Visualize, Draw and Construct Geometric Figures

- list properties of, identify, name (2.9.8 D)
- draw . . .

2. Classify familiar polygons/describe and compare (2.9.8 C)

3. Congruent and Similar Angles and Shapes (2.9.8 F)

4. Solve Problems by applying Geometric Properties and Relationships

- approximate the value of π (pi) through experimentation (2.9.8 G)
- classify familiar polygons (2.9.8 C)

5. Describe/Solve Problems Involving Intersection of Geometric Figures

- analyze geometric pattern and develop descriptions of the pattern (2.9.8 J)
- analyze objects to determine whether they illustrate tessellations, symmetry, congruence, similarity and scale (2.9.8 K)

B- Measurements & Estimation

1. Customary and Metric Conversion (2.3.8 D)

- estimate, use, and describe measurement of distance, rate, perimeter, area, volume, weight, mass
- solve rate problems

2. Reasonable Measurement Units and Estimates

- estimate, use, and describe measurement of distance, rate, perimeter, area, volume, weight, mass(2.3.8 D)

3. Perimeter and Circumference (2.3.8 A)

- develop formulas and procedures for determining measurements

4. Area and Volume (2.3.8 A)

- develop formulas and procedures for determining measurements

5. Scales and Scaled Drawings (2.3.8 G and 2.3.8 F)

C- Concepts of Calculus

1. Analyze graphs of related quantities for minimum and maximum values and justify the findings (2.11.8 A)

2. Describe concepts of units (2.11.8 B)

- rates, ratios, slope in context of rate of change

3. Continuing patterns infinitely (2.11.8 C)

- patterns of numbers
- continue patterns of objects

III. A-Probability and Predictions (2.7), B-Statistics and Data Analysis (2.6)

A-Probability and Predictions

1. Solving Proportions

- analyze predictions (2.7.8 C)

2. Making Predictions (2.7.8 C)

- interpreting charts and graphs and tables
- determine the number of combinations and permutations for an event (2.7.8 A)

3. Analyzing data

- comparing and contrasting results from observations and mathematical models (2.7.8 C)
- analyze predictions (2.7.8 C)

B-Statistics and Data Analysis

1. Compare and contrast different plots of data using values of mean, median, mode, quartiles and range (2.6.8 A and 2.6.8 F)

2. Design and carry out a random sampling procedure (2.6.8 D)

IV. Algebra and Functions (2.8)

1. Expressions and Equations (2.8.8 D, 2.8.8 C, and 2.1.8 G)

- solving for an unknown (2.8.8 G)
- performing algebraic operations (+, −, ×, ÷) (2.8.8 J)
- relationships with tables, verbal, or symbolic rules

2. Grids and Ordered Pairs (2.1.8 F)

- patterns and sequences
- number lines and coordinates

V. A-Mathematical Reasoning and Connections (2.4), B-Mathematical Problem Solving and Communications (2.5)

A/B

1. Representing problems in various ways (2.4.8 A, 2.5.8 A, 2.5.8 C, 2.5.8 D, 2.5.8 B)

- make conjectures based on logical reasoning

2. Develop a plan to solve the problem, check if answer makes sense (2.4.8 B, 2.4.8 A, 2.4.8 C, 2.4.8 D)

(written problems--fractions, whole numbers, decimals)

Formative Assessments (optional):

Summative Assessments:

6th Grade Advanced Placement Test--see attached sample inventory test

Two or More Sample Units (optional):

Writing Team Members:

Judy Gibson
Kristy Lucia
Janet Mack

Danene Mattern
Janet Whitmire

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
☒ No

District-wide Final Examination Required:

Yes ☐ X ☐ No

Challenge Assessment for Grade 6, Advanced Math

Eligibility Requirements for Advanced Math 6

First three 9 weeks grades
(*calculate each nine weeks individually*)

93% - 100%	4 points
84% - 92%	3 points
72% - 83%	2 points
60% - 71%	1 point
59% -	0 points

Placement Test

(*based on total points*)

30	24 points
28 - 29	23 points
26 - 27	22 points
24 - 25	21 points

22 - 23	20 points
20 - 21	19 points
18 - 19	18 points
16 - 17	17 points
15 - 16	16 points
13 - 14	15 points
11 - 12	14 points
10	13 points
7 - 9	12 points
5 - 6	11 points
4 - 2	10 points
0 - 1	9 points

29-36 Points Advanced Math 6

Letter sent to parents for approval with this phrase –WCSD reserves the right to make a schedule change if, at the end of the first nine weeks, student’s grade is not 80% or higher in order for the student to succeed.

WCSD STUDENT DATA SYSTEM INFORMATION

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

____ Enhanced weight

(Describe)_____