

Wallenpaupack Area School District

COURSE: Mathematics

GRADE LEVEL: Sixth Grade

LENGTH OF COURSE: Middle School: 90 Days/70 Minutes Per Day

South School: 180 Days/40 Minutes Per Day

TEXT: Middle School: Middle Grades Math Tools for Success Course 1

South School: Everyday Mathematics Mathematics in Action

PUBLISHER: Middle School: Prentice Hall

South School: Everyday Learning Corporation

MacMillan/McGraw-Hill

COPYRIGHT: Middle School: 2001

South School: 2002, 1991

COURSE DESCRIPTION:

The sixth, seventh and eighth grade math curriculum covers a number of skills and concepts through a rich yet balanced curriculum. The structure of the lessons promotes understanding, retention and preparation for standardized tests.

AREAS OF STUDY:

Number sense
Computation and Estimation
Measurement
Estimation
Problem Solving
Statistics and Data Analysis
Algebra and Functions
Geometry

CURRICULUM WRITING TEAM:

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DATE OF REVISION:

March 2002

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.1.8

Topics: Numbers and number systems	Skills: Represent and use numbers in equivalent forms (e.g., integers, fractions, decimals percents, exponents, scientific notation, square roots) Simplify numerical expressions involving exponents, scientific notation and using order of operations Distinguish between and order rational and irrational numbers Use the inverse relationships between addition, subtraction, multiplication, division, exponentiation and root extraction to determine unknown quantities in equations
Activities: Prime factorization Calculators Factor tree Please excuse my dear Aunty Sally Number line with word problems Math message (Chicago Math) ADD (Arithmetic Developed Daily)	Performance Assessments: Teacher observation Oral questions Board Work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.2.8

Topics: Computation and estimation	Skills: Complete calculations by applying the order of operations Add, subtract, multiply and divide different kinds and forms of rational numbers including integers, decimal fractions, percents and proper and improper fractions Determine the appropriateness of overestimating or understanding in computation Identify the difference between exact value and approximation and determine which is appropriate for a given situation
Activities: Seasonal estimation of treats in a jar Math message ADD (Arithmetic Developed Daily) Calculators	Performance Assessments: Teacher observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.3.8

Topics:	Skills:
Measurement and estimation	Develop formulas for determining measurements (e.g., area, volume, distance) Measure angles in degrees and determine relations of angles Estimate, use and describe measures of distance, rate, perimeter, area, volume, weight, mass and angles Describe how a change in linear dimension of an object affects its perimeter, area and volume
Activities:	Performance Assessments:
Angle tangle Protractor (half circle and full circle) Math message ADD (Arithmetic Developed Daily)	Teacher observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.4.8.

Topics:	Skills:
Mathematical reasoning	Make conjectures based on logical reasoning and test conjectures by using counter-examples Combine numeric relationships to arrive at a conclusion Use if...than statements to construct simple, valid arguments Construct, use and explain algorithmic procedures for computing and estimating with whole numbers, fractions, decimals and integers Distinguish between inductive and deductive reasoning
Activities:	Performance Assessments:
Math message ADD (Arithmetic Developed Daily) Board work through large group instruction	Teacher observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.5.8

Topics:	Skills:
Mathematical problem solving	Invent, select, use and justify the appropriate methods, materials and strategies to solve problems Verify and interpret results using precise mathematical language, notation and representations, including numerical tables and equations, simple algebraic equations and formulas, charts, graphs and diagrams Justify strategies and defend approaches used and conclusions reached Determine pertinent information in problem situations and whether any further information is needed for solution
Activities:	Performance Assessments:
Math message ADD (Arithmetic Developed Daily) Problem solving strategies	Teacher Observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.6.8

Topics:	Skills:
Statistics and data analysis	Compare and contrast different plots of data using values of mean, median, mode, quartiles and range Design and carry out a random sampling procedure
Activities:	Performance Assessments:
Landmark shark Calculators Survey Math message ADD (Arithmetic Developed Daily)	Teacher observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.7.8

Topics:	Skills:
Probability and predictions	Determine the number of combinations and permutations for an event Present the results of an experiment using visual representations (e.g., tables, charts, graphs) Analyze predictions (e.g., election polls) Compare and contrast results from observations and mathematical models Make valid inferences, predictions and arguments based on probability
Activities:	Performance Assessments:
Coin toss Rolling a number cube Spinner activities Predict numbers and colors activity ADD (Arithmetic Developed Daily) Problem solving strategies	Teacher observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.8.8

Topics:	Skills:
Algebra	Apply simple algebraic patterns to basic number theory and to spatial relations
Activities:	Performance Assessments:
Calculators Equations Math message ADD (Arithmetic Developed Daily) Book work (hard cover and workbook)?	Teacher observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.9.8

Topics:	Skills:
Geometry	Classify familiar polygons as regular or irregular up to a decagon Identify, name, draw and list all properties of squares, cubes, pyramids, parallelograms, quadrilaterals, trapezoids, polygons, rectangles, rhombi, circles, spheres, triangles, prisms and cylinders Distinguish between similar and congruent polygons
Activities:	Performance Assessments:
Polygon capture Compass Math message ADD (Arithmetic Developed Daily)	Teacher observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.10.8.

Topics:	Skills:
Trigonometry	Compute measures of sides and angles using proportions, the Pythagorean Theorem and right triangle relationships Solve problems requiring indirect measurement for lengths of sides of triangles
Activities:	Performance Assessments:
ADD (Arithmetic Developed Daily) Teacher made hand outs Group activity/board presentation	Teacher observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

Course: Mathematics

Grade Level: Grade 6

PA Standard: 2.11.8

Topics:	Skills:
Calculus	Analyze graphs of related quantities for minimum and maximum values and justify the findings Describe the concept of unit rate, ratio and slope in the context of rate of change Continue a pattern of numbers or objects that could be extended infinitely
Activities:	Performance Assessments:
ADD (Arithmetic Developed Daily) Group activity Calculators Board work/group presentation	Teacher observation Oral questions Board work Classroom participation Paper/pencil activities Teacher made tests Textbook tests Homework

Wallenpaupack Area School District

TERMS USED IN THE ACADEMIC STANDARDS FOR MATHEMATICS THROUGH GRADE 8

1. Angle Measurement in Degrees
2. Bisector
3. Box-and-Whisker Plot
4. Combination
5. Complementary Angle
6. Conjecture
7. Coordinate Plane
8. Counter Example
9. Deductive Reasoning
10. Dimensions
11. Equation
12. Evaluate the Expression
13. Exponent
14. Exponential Relationship
15. Functional Relationship
16. Inductive Reasoning
17. Inequality
18. Irrational Number
19. Linear Function
20. Linear Relationship
21. Logical Reasoning
22. Number Line
23. Order of Operations
24. Percent
25. Permutation
26. Proportion
27. Pythagorean Theorem
28. Quadratic Relationship
29. Quartile
30. Random Sampling
31. Ratio
32. Rational Number
33. Regular Polygon
34. Reliability
35. Scale Model
36. Scientific Notation
37. Sequence
38. Slope
39. Square Root
40. Stem-and-Leaf Plot
41. Supplementary Angle
42. Transformation
43. Transversal
44. Unit Rate
45. Verbal, Symbolic Rules
46. Vertical Angle

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INTERNET RESOURCES

www.aaamath.com

www.coolmath4kids.com

www.funbrain.com

www.moneyopolis.com (teacher can set up for class access)

www.schoolcentral.com/willowouby

www.stfx.ca/specialmathproblems

www.learningwave.com/abmath