

Wallenpaupack Area School District Planned Course Curriculum Guide

**Department
Math**

**Name of Course
Transitional Math 8**

Course Description:

8th Grade Transitional Math includes the study and application of the following topics:

- Explore algebraic expressions and integers
- Solve one-step equations and inequalities, decimals and equations
- Understand factors, fractions, exponents, operations with fractions
- Use ratios, proportions, and percents
- Solve linear functions and graphing
- Explore spatial thinking
- Utilize area and volume
- Understand right triangles in Algebra
- Use data analysis and probability
- Be introduced to nonlinear functions and polynomials

**Revision Date:
September 2015**

Wallenpaupack Area School District Curriculum

COURSE: Transitional Math 8

GRADE/S: 8

UNIT 1: Review Chapters 1-6

TIMEFRAME: ½ quarter

PA COMMON CORE/NATIONAL STANDARDS:

- **CC.2.1.8.E.1** Distinguish between rational and irrational numbers and their properties
- **CC.2.1.8.E.4** Estimate irrational numbers by comparing them to rational numbers
- **CC.2.2.8.B.1** Apply concepts of radicals and integer exponents to generate equivalent expressions
- **CC.2.1.8.B.2** Understand the connections between proportional relationships, lines, and linear equations

UNIT OBJECTIVES (SWBATS):

- **Use variable and variable expressions**
- **Perform operations with integers**
- **Graph points in the coordinate plane**
- **Solve a problem by looking for a pattern**
- **Use the Distributive Property**
- **Write and solve equations**
- **Write, solve, and graph inequalities**
- **Solve a problem by the Try, Test & Revise Strategy**
- **Estimate with decimals**
- **Solve equations with decimals**
- **Convert metric units of measure**
- **Solve a problem by simplifying the problem**
- **Simplify expressions with exponents**
- **Simplify fractions**
- **Write and calculate in scientific notation**
- **Solve problems by accounting for all possibilities**
- **Perform operations with fractions**
- **Solve equations with fractions**
- **Find powers of products and quotients**
- **Solve problems by working backward**
- **Find and use ratios and unit rates**
- **Write and solve proportions**
- **Find and use percents**
- **Solve a problem by making a table**

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Note taking
- Homework and practice
- Cooperative learning
- Peer interaction
- Modeling
- Active participation

ANCHOR VOCABULARY:

Chapter 1

- Absolute value
- Conjecture
- Coordinate plane
- Counterexample
- Evaluate
- Integers
- Inductive reasoning
- Opposites
- Order of operations
- Ordered pair
- Origin
- Quadrants
- Variable
- Variable expression
- X-axis
- X-coordinate
- Y-axis
- Y-coordinate

Chapter 2

- Addition Property of Equality/Inequality
- Additive identity
- Associative Properties of Addition and Multiplication
- Coefficient
- Commutative Properties of Addition and Multiplication
- Constant
- Deductive reasoning
- Distributive Property
- Division Property of Equality/Inequality
- Equation
- Identity Properties of Addition and Multiplication
- Inequality
- Inverse operations
- Like terms
- Multiplication Property of Equality/Inequality
- Multiplicative identity
- Open sentence
- Simplify
- Solution
- Solution of the inequality
- Subtraction Property of Equality/Inequality
- Term

Chapter 3

- Compatible numbers
- Formula

- Mean
- Measures of central tendency
- Median
- Metric system
- Mode
- Perimeter
- Outlier

Chapter 4

- Base
- Composite number
- Divisible
- Equivalent fractions
- Exponents
- Factor
- Greatest common factor (GCF)
- Power
- Prime number
- Prime factorization
- Rational number
- Scientific notation
- Simplest form
- Standard notation

Chapter 5

- Dimensional analysis
- Least common denominator (LCD)
- Least common multiple (LCM)
- Multiple
- Repeating decimal
- Reciprocals
- Terminating decimal

Chapter 6

- Commission
- Complement
- Cross products
- Discount
- Event
- Indirect measurement
- Markup
- Odds
- Outcome
- Percent
- Percent of change
- Probability
- Proportion
- Rate
- Ratio

- Scale drawing
- Similar figures
- Unit rate

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

Diagnostic

- Transitional Math 8 Diagnostic Test
- CDTs

Formative

- Teacher observation
- Unit quizzes
- Unit tests
- Unit projects
- Study island

Summative

- Final Exam
- PSSAs

EVIDENCE OF MASTERY/Cut Score (PSSA):

- PSSA Proficient (1000-1107) Advanced (1108 and up)
- Objective Assessment Score of 70%

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

- Appropriate accommodations based on the student's IEP/504 Plan

RESOURCES (Websites, Blogs, Videos, Whiteboard Resources, etc.):

Textbook: Pre-Algebra "Tools for a Changing World" @ 2001 (Prentice Hall)

www.phschool.com

www.studyisland.com

Calculators/graphing calculators

Math manipulative

Notes

Supplemental handouts/worksheets/websites

Coach Workbooks

Graph paper

White boards

SAS

May vary based on instructor, class, availability, updates

RESOURCE SPECIFIC VOCABULARY:

Math 8 Standards Glossary www.pdesas.org

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 8	GRADE/S: 8
UNIT 2: Chapter 7 Solving Equations and Inequalities	TIMEFRAME: ½ quarter

<p>PA COMMON CORE/NATIONAL STANDARDS:</p> <ul style="list-style-type: none"> • CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations. • CC.2.2.8.C.1 Define, evaluate, and compare functions. • CC.2.2.8.C.2 Use concepts of functions to model relationships between quantities.
<p>UNIT OBJECTIVES (SWBATS):</p> <ul style="list-style-type: none"> • Learn how to write and solve multi-step equations • Learn how to write and solve two-step inequalities • Learn how to find simple and compound interest • Learn how to solve problems by writing equations
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</p> <ul style="list-style-type: none"> • Note taking • Homework and practice • Cooperative learning • Peer interaction • Modeling • Active participation
<p>ANCHOR VOCABULARY:</p> <ul style="list-style-type: none"> • Balance • Compound interest • Consecutive integers • Interest • Interest rate • Principal • Simple interest
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):</p> <p>Diagnostic</p> <ul style="list-style-type: none"> • Transitional Math 8 Diagnostic Test • CDTs <p>Formative</p> <ul style="list-style-type: none"> • Teacher observation • Unit quizzes • Unit tests • Unit projects • Study island <p>Summative</p> <ul style="list-style-type: none"> • Final Exam • PSSAs
<p>EVIDENCE OF MASTERY/Cut Score (PSSA Exam):</p> <ul style="list-style-type: none"> • PSSA Proficient (1000-1107) Advanced (1108 and up) • Objective Assessment Score of 70%

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

- Appropriate accommodations based on the student's IEP/504 Plan

RESOURCES (Websites, Blogs, Videos, Whiteboard Resources, etc.):

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SAS

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Math 8 Standards Glossary www.pdesas.org

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 8	GRADE/S: 8
UNIT 3: Chapter 8 Linear Functions	TIMEFRAME: ½ quarter

<p>PA COMMON CORE/NATIONAL STANDARDS:</p> <ul style="list-style-type: none"> • CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations. • CC.2.2.8.C.1 Define, evaluate, and compare functions. • CC.2.2.8.C.2 Use concepts of functions to model relationships between quantities.
<p>UNIT OBJECTIVES (SWBATS):</p> <ul style="list-style-type: none"> • Learn how to determine whether a relation is a function • Learn how to solve linear equations • Learn how to solve systems of linear equations and inequalities • Learn how to solve a problem by graphing
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</p> <ul style="list-style-type: none"> • Note taking • Homework and practice • Cooperative learning • Peer interaction • Modeling • Active participation
<p>ANCHOR VOCABULARY:</p> <ul style="list-style-type: none"> • Domain • Function • Function notation • Function rule • Linear equation • Linear inequality • Negative correlation • No correlation • Positive correlation • Range • Relation • Scatter plot • Slope • Slope-intercept form • Solution • System of linear equations • System of linear inequalities • Trend line • Vertical-line test • Y-intercept
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):</p> <p>Diagnostic</p> <ul style="list-style-type: none"> • Transitional Math 8 Diagnostic Test • CDTs

Formative

- Teacher observation
- Unit quizzes
- Unit tests
- Unit projects
- Study island

Summative

- Final Exam
- PSSAs

EVIDENCE OF MASTERY/Cut Score (PSSA Exam):

- PSSA Proficient (1000-1107) Advanced (1108 and up)
- Objective Assessment Score of 70%

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

- Appropriate accommodations based on the student's IEP/504 Plan

RESOURCES (Websites, Blogs, Videos, Whiteboard Resources, etc.):

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Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 8	GRADE/S: 8
UNIT 4: Chapter 9 Spatial Thinking	TIMEFRAME: ½ quarter

<p>PA COMMON CORE/NATIONAL STANDARDS:</p> <ul style="list-style-type: none"> • CC.2.3.8.A.2 Understand and apply congruence, similarity, and geometric transformations using various tools.
<p>UNIT OBJECTIVES (SWBATS):</p> <ul style="list-style-type: none"> • Learn how to use properties of figures to solve problems • Learn how to classify geometric figures • Learn how to solve a problem by drawing a diagram
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</p> <ul style="list-style-type: none"> • Note taking • Homework and practice • Cooperative learning • Peer interaction • Modeling • Active participation
<p>ANCHOR VOCABULARY:</p> <ul style="list-style-type: none"> • Adjacent angles • Alternate interior angles • Angle bisector • Angle of rotation • Center of rotation • Central angle • Complementary angles • Congruent angles • Corresponding angles • Image • Line • Line of reflection • Line of symmetry • Parallel • Perpendicular bisector • Perpendicular lines • Plane point • Polygon • Ray • Reflection • Reflectional symmetry • Regular polygon • Rotation • Rotational symmetry • Segment • Segment bisector

- Skew
- Supplementary angles
- Transformation
- Translation
- Transversal
- Vertical angles

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

Diagnostic

- Transitional Math 8 Diagnostic Test
- CDTs

Formative

- Teacher observation
- Unit quizzes
- Unit tests
- Unit projects
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Summative

- Final Exam
- PSSAs

EVIDENCE OF MASTERY/Cut Score (PSSA Exam):

- PSSA Proficient (1000-1107) Advanced (1108 and up)
- Objective Assessment Score of 70%

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

- Appropriate accommodations based on the student's IEP/504 Plan

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Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 8	GRADE/S: 8
UNIT 5: Chapter 10 Area and Volume	TIMEFRAME: ½ quarter

<p>PA COMMON CORE/NATIONAL STANDARDS:</p> <ul style="list-style-type: none"> • CC.2.3.8.A.1 Apply the concepts of volume of cylinders, cones, and spheres to solve real-world and mathematical problems.
<p>UNIT OBJECTIVES (SWBATS):</p> <ul style="list-style-type: none"> • Learn how to find the area of figures • Learn how to find the surface area of space figures • Learn how to find the volumes of space figure • Learn how to solve a problem by making a model
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</p> <ul style="list-style-type: none"> • Note taking • Homework and practice • Cooperative learning • Peer interaction • Modeling • Active participation
<p>ANCHOR VOCABULARY:</p> <ul style="list-style-type: none"> • Altitude • Altitude of a triangle • Area • Cone • Cubic unit • Cylinder • Lateral area • Net • Prism • Pyramid • Slant height • Space figure • Sphere • Surface area • volume
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):</p> <p>Diagnostic</p> <ul style="list-style-type: none"> • Transitional Math 8 Diagnostic Test • CDTs <p>Formative</p> <ul style="list-style-type: none"> • Teacher observation • Unit quizzes • Unit tests • Unit projects

- Study island

Summative

- Final Exam
- PSSAs

EVIDENCE OF MASTERY/Cut Score (PSSA Exam):

- PSSA Proficient (1000-1107) Advanced (1108 and up)
- Objective Assessment Score of 70%

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

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Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 8	GRADE/S: 8
UNIT 6: Chapter 11 Right Triangles in Algebra	TIMEFRAME: ½ quarter

<p>PA COMMON CORE/NATIONAL STANDARDS:</p> <ul style="list-style-type: none"> • CC.2.3.8.A.3 Understand and apply the Pythagorean Theorem to solve problems.
<p>UNIT OBJECTIVES (SWBATS):</p> <ul style="list-style-type: none"> • How to find the square roots numbers • How to find the missing measures of right triangle • How to use the Distance and Midpoint Formulas • How to solve a problem by writing a proportion
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</p> <ul style="list-style-type: none"> • Note taking • Homework and practice • Cooperative learning • Peer interaction • Modeling • Active participation
<p>ANCHOR VOCABULARY:</p> <ul style="list-style-type: none"> • Angle of elevation • Angle of depression • Cosine • Distance • Hypotenuse • Irrational number • Legs • Midpoint • Perfect square • Sine • Square root • Tangent • Trigonometry • Trigonometric ratio
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):</p> <p>Diagnostic</p> <ul style="list-style-type: none"> • Transitional Math 8 Diagnostic Test • CDTs <p>Formative</p> <ul style="list-style-type: none"> • Teacher observation • Unit quizzes • Unit tests • Unit projects • Study island <p>Summative</p> <ul style="list-style-type: none"> • Final Exam

- PSSAs

EVIDENCE OF MASTERY/Cut Score (PSSA Exam):

- PSSA Proficient (1000-1107) Advanced (1108 and up)
- Objective Assessment Score of 70%

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

- Appropriate accommodations based on the student's IEP/504 Plan

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Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 8	GRADE/S: 8
UNIT 7: Chapter 12 Data Analysis and Probability	TIMEFRAME: ½ quarter

<p>PA COMMON CORE/NATIONAL STANDARDS:</p> <ul style="list-style-type: none"> • CC.2.4.8.B.1 Analyze and/or interpret bivariate data displayed in multiple representations. • CC.2.4.8.B.2 Understand that patterns of association can be seen in bivariate data utilizing frequencies.
<p>UNIT OBJECTIVES (SWBATS):</p> <ul style="list-style-type: none"> • How to use graphs to represent data • How to find theoretical probability and experimental probability • How to find permutations and combinations • How to solve problems by doing simulations
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</p> <ul style="list-style-type: none"> • Note taking • Homework and practice • Cooperative learning • Peer interaction • Modeling • Active participation
<p>ANCHOR VOCABULARY:</p> <ul style="list-style-type: none"> • Box-and-whisker plot (five number summary) • Combination • Counting principal • Dependent events • Experimental probability • Frequency table • Independent events • Line plot • Permutation • Population • Quartile • Random sample • Range • Sample • Sample space • Simulation • Theoretical probability
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):</p> <p>Diagnostic</p> <ul style="list-style-type: none"> • Transitional Math 8 Diagnostic Test • CDTs <p>Formative</p> <ul style="list-style-type: none"> • Teacher observation • Unit quizzes

- Unit tests
- Unit projects
- Study island

Summative

- Final Exam
- PSSAs

EVIDENCE OF MASTERY/Cut Score (PSSA Exam):

- PSSA Proficient (1000-1107) Advanced (1108 and up)
- Objective Assessment Score of 70%

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

- Appropriate accommodations based on the student's IEP/504 Plan

RESOURCES (Websites, Blogs, Videos, Whiteboard Resources, etc.):

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RESOURCE SPECIFIC VOCABULARY:

Math 8 Standards Glossary www.pdesas.org

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 8	GRADE/S: 8
UNIT 8: Chapter 13 Nonlinear Functions and Polynomials	TIMEFRAME: ½ quarter (if get to this unit)

<p>PA COMMON CORE/NATIONAL STANDARDS:</p> <ul style="list-style-type: none"> • CC.2.4.8.B.2 Understand that patterns of association can be seen in bivariate data utilizing frequencies.
<p>UNIT OBJECTIVES (SWBATS):</p> <ul style="list-style-type: none"> • How to use arithmetic and geometric sequences • How to graph nonlinear functions • How to perform operations with polynomials • How to solve a problem by using multiple strategies
<p>INSTRUCTIONAL STRATEGIES/ACTIVITIES:</p> <ul style="list-style-type: none"> • Note taking • Homework and practice • Cooperative learning • Peer interaction • Modeling • Active participation
<p>ANCHOR VOCABULARY:</p> <ul style="list-style-type: none"> • Absolute value function • Arithmetic sequence • Binomial • Common difference • Common ratio • Geometric sequence • Monomial • Polynomial • Quadratic+ function • Sequence • Term • trinomial
<p>ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):</p> <p>Diagnostic</p> <ul style="list-style-type: none"> • Transitional Math 8 Diagnostic Test • CDTs <p>Formative</p> <ul style="list-style-type: none"> • Teacher observation • Unit quizzes • Unit tests • Unit projects • Study island

Summative

- Final Exam
- PSSAs

EVIDENCE OF MASTERY/Cut Score (Keystone Exam):

- PSSA Proficient (1000-1107) Advanced (1108 and up)
- Objective Assessment Score of 70%

DIFFERENTIATED INSTRUCTION (Remediation/Extension) (Process, Product or Content)

- Appropriate accommodations based on the student's IEP/504 Plan

RESOURCES (Websites, Blogs, Videos, Whiteboard Resources, etc.):

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SAS

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