# Wallenpaupack Area School District Planned Course Curriculum Guide

# Department Math

# Name of Course Transitional Math 7

# **Course Description:**

7<sup>th</sup> Grade Transitional Math includes the study and application of the following topics:

- Explore algebraic expressions and integers
- Simplify and evaluate variable expressions using the property of numbers
- Understand factors, fractions, exponents
- Apply operations with percents, fractions and decimals
- Use data analysis and probability
- Solve one-step and two-step equations and inequalities
- Explore proportional relationships and ratios
- Utilize area, surface area, and volume of two and three dimensional shapes
- Identify points, lines, and angles and angle relationships
- Be introduced to relations, linear functions, and their graphs
- Convert between customary and metric units of measure (time permitting)

# **Revision Date:**

September 2015

This PCCG is designed as an ACTIVE document capable of technological modification as required.

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 1: Algebraic Expressions and Integers	TIMEFRAME: 3-5 weeks

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

## **UNIT OBJECTIVES (SWBATS):**

- Compare integers and find absolute value
- Use the order of order of operations to evaluate expressions
- Perform operations with integers
- Identify, write, and solve numerical and variable expressions
- Graph points on the coordinate plane and identify quadrants

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

## Chapter 1

- Absolute value
- Additive Inverse (Opposites)
- Integers
- Simplify
- Evaluate
- Exponent
- Quantity
- Order of operations
- Variable
- Numerical expression
- Variable expression
- Substitution
- Coordinate plane
- Ordered pair
- Origin
- Quadrants
- X-axis
- X-coordinate
- Y-axis
- Y-coordinate

## ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

# Diagnostic

- Unit 1 Pre-Test
- CDTs

### Formative

- Teacher observation
- Unit quizzes
- Unit test
- 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

Scientific calculators

Math manipulative

Notes

Supplemental handouts/worksheets/websites

Coach Workbooks

Graph paper

White boards

Projector/TV

SAS

May vary based on instructor, class, availability, updates

# **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 2: Simplifying Variable Expressions using	TIMEFRAME: 2-3 weeks
the Properties of Numbers	

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

# **UNIT OBJECTIVES (SWBATS):**

- Use the distributive property to create equivalent expressions
- Identify the property of numbers
- Combine like terms

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

- Identity Properties of Addition and Multiplication
- Associative Properties of Addition and Multiplication
- Commutative Properties of Addition and Multiplication
- Distributive Property
- Coefficient
- Constant
- Term
- Like terms

# ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

# Diagnostic

- Unit 2 Pre-Test
- CDTs

## Formative

- Teacher observation
- Unit quizzes
- Unit test
- Study island

## Summative

- Final Exam
- PSSAs

# **EVIDENCE OF MASTERY/Cut Score (PSSA):**

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## **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 3: Rational Number Sense	TIMEFRAME: 3-5 weeks

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- **CC.2.2.7.B.1** Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

# **UNIT OBJECTIVES (SWBATS):**

- Identify the divisibility of numbers using algorithms
- Find prime factorization, greatest common factor, and least common multiple using algorithms
- Simplify fractions with and without variables
- Convert between fractions, and decimals
- Compare and order rational numbers

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

### **ANCHOR VOCABULARY:**

- Divisible
- Prime
- Composite
- Factor
- Simplest Form
- Prime Factorization
- Greatest Common Factor (GCF)
- Least Common Multiple (LCM)
- Rational Number

# ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

### Diagnostic

- Unit 3 Pre-Test
- CDTs

## Formative

- Teacher observation
- Unit quizzes
- Unit test
- Study island

# Summative

- Final Exam
- PSSAs

# **EVIDENCE OF MASTERY/Cut Score (PSSA):**

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- Objective Assessment Score of 70%

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## **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 4: Operations with Fractions and Decimals	TIMEFRAME: 2-4 weeks

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

## **UNIT OBJECTIVES (SWBATS):**

- Learn how to find a common denominator
- Learn how to add, subtract, multiply and divide fractions with and without variables
- Learn how to add, subtract, multiply and divide decimals

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

- Multiple
- Least common denominator (LCD)
- Reciprocal
- Inverse
- Repeating decimal
- · Terminating decimal

## ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

## Diagnostic

- Unit 4 Pre-Test
- CDTs

## **Formative**

- Teacher observation
- Unit quizzes
- Unit test
- Study island

## Summative

- Final Exam
- PSSAs

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# **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 5: Percents, Data Analysis and Probability	TIMEFRAME: 3-5 weeks

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.
- CC.2.4.7.B.3 Investigate chance processes and develop, use, and evaluate probability models.

## **UNIT OBJECTIVES (SWBATS):**

- How to use graphs to represent data
- How to find theoretical probability and experimental probability
- How to find independent and dependent events
- How to find simple and compound probability

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

- Measure of Central Tendency
- Mean
- Median
- Mode
- Range
- Box-and-whisker plot (five number summary)
- Quartile
- Interquartile Range
- Lower and Upper Extremes
- Frequency table
- Line plot
- Histogram
- Probability
- Counting principal
- Simple probability
- Compound probability
- Dependent event
- Independent event
- Experimental probability
- Theoretical probability

# ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

# Diagnostic

- Unit 5 Pre-Test
- CDTs

### Formative

- Teacher observation
- Unit quizzes
- Unit test
- Study island

## Summative

- Final Exam
- PSSAs

## **EVIDENCE OF MASTERY/Cut Score (PSSA):**

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- Objective Assessment Score of 70%

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## **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 6: Equations	TIMEFRAME: 3-5 weeks

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

## **UNIT OBJECTIVES (SWBATS):**

- Identify whether an equation is true, false, or open
- Write and solve one-step, two-step, and multi-step equations using all forms of rational numbers
- Apply the simple interest formula

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

- Open Sentence
- Equation (Number Sentence)
- Balance
- Inverse Operation
- Solution
- Isolation

# ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

## Diagnostic

- Unit 6 Pre-Test
- CDTs

# Formative

- Teacher observation
- Unit quizzes
- Unit test
- Study island

## Summative

- Final Exam
- PSSAs

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# **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 7: Inequalities	TIMEFRAME: 2-3 weeks

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

## **UNIT OBJECTIVES (SWBATS):**

 Write and solve one-step, two-step, and multi-step inequalities using all forms of rational numbers

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

- Inequality
- At least
- At most

# ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

### Diagnostic

- Unit 7 Pre-Test
- CDTs

## Formative

- Teacher observation
- Unit quizzes
- Unit test
- Study island

## Summative

- Final Exam
- PSSAs

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# RESOURCE SPECIFIC VOCABULARY:

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 8: Ratios and Proportional Relationships	TIMEFRAME: 3-5 weeks

- **CC.2.1.7.D.1** Analyze proportional relationships and use them to model and solve real-world and mathematical problems.
- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- **CC.2.2.7.B.1** Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.
- **CC.2.4.7.B.1** Draw inferences about populations based on random sampling concepts.
- CC.2.4.7.B.2 Draw informal comparative inferences about two populations.
- CC.2.4.7.B.3 Investigate chance processes and develop, use, and evaluate probability models.

## **UNIT OBJECTIVES (SWBATS):**

- Identify the difference between rates and ratios
- Find the constant of proportionality with and without graph
- Identify, write and solve proportions
- Tell whether figures are proportional using similarity and scale
- Find the percent of change
- Learn how to find markup, discount and selling price
- Learn how to use random sampling to draw inferences

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

- Cross products
- Markup
- Discount
- Percent
- Percent of change
- Proportion
- Constant of proportionality
- Rate
- Ratio
- Unit rate
- Scale drawing
- Similar figures
- Congruent figures
- Random Sample
- Population

Inference

## ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

## Diagnostic

- Unit 8 Pre-Test
- CDTs

## Formative

- Teacher observation
- Unit quizzes
- Unit test
- 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)**

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Scientific calculators

Math manipulative

Notes

Supplemental handouts/worksheets/websites

Coach Workbooks

Graph paper

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Projector/TV

SAS

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# **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 9: Area, Surface Area, and Volume of	TIMEFRAME: 3-5 weeks
Polygons	

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.
- **CC.2.3.7.A.1** Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.
- **CC.2.3.7.A.2** Visualize and represent geometric figures and describe the relationships between them.

# **UNIT OBJECTIVES (SWBATS):**

- Learn how to classify geometric figures
- Identify parts of a circle
- Find perimeter, area, surface area, and volume of various figures

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

- Altitude
- Circumference
- Radius
- Diameter
- Chord
- Area
- Lateral Area
- Cone
- Square unit
- Cubic unit
- Polygon
- Regular Polygon
- Cylinder
- Net
- Prism
- Pyramid
- Slant height
- Space figure
- Surface area

Volume

# ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

## Diagnostic

- Unit 9 Pre-Test
- CDTs

## Formative

- Teacher observation
- Unit quizzes
- Unit test
- Study island

## Summative

- Final Exam
- PSSAs

# **EVIDENCE OF MASTERY/Cut Score (PSSA):**

- PSSA Proficient (1000-1107) Advanced (1108 and up)
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# **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 10: Points, Lines and Angles	TIMEFRAME: 2-3 weeks

- **CC.2.2.7.B.1** Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.
- **CC.2.3.7.A.1** Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.
- **CC.2.3.7.A.2** Visualize and represent geometric figures and describe the relationships between them.

## **UNIT OBJECTIVES (SWBATS):**

- Learn how to use properties of figures to solve problems
- Learn the names and relationship between angles formed when parallel lines are cut by a transversal
- Learn to identify parallel, perpendicular and skew line segments in three dimensional figures

# **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

# **ANCHOR VOCABULARY:**

- Adjacent angles
- Alternate interior angles
- Alternate exterior angles
- Corresponding angles
- Complementary angles
- Supplementary angles
- Vertical angles
- Congruent angles
- Point
- Line
- Line Segment
- Ray
- Plane
- Parallel
- Perpendicular
- Skew
- Transversal

# ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

# Diagnostic

- Unit 10 Pre-Test
- CDTs

### Formative

- Teacher observation
- Unit quizzes
- Unit test
- Study island

## Summative

- Final Exam
- PSSAs

## **EVIDENCE OF MASTERY/Cut Score (PSSA):**

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## **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 11: Linear Functions and Graphing	TIMEFRAME: 3-5 weeks

- **CC.2.1.7.D.1** Analyze proportional relationships and use them to model and solve real-world and mathematical problems.
- **CC.2.2.7.B.1** Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

## **UNIT OBJECTIVES (SWBATS):**

- Learn how to determine whether a relation is a function
- Learn how to recognize positive and negative slope and interperet its meaning
- Learn how to solve linear equations
- Learn how to solve systems of linear equations and inequalities
- Learn how to solve a problem by graphing

## **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

### **ANCHOR VOCABULARY:**

- Domain
- Range
- Relation
- Function
- Vertical-line test
- Function rule
- Linear equation
- Linear inequality
- Positive correlation
- Negative correlation
- No correlation
- Scatter plot
- Slope
- Slope-intercept form
- System of linear equations
- System of linear inequalities
- Trend line
- Y-intercept

## ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

# Diagnostic

- Unit 11 Pre-Test
- CDTs

### Formative

- Teacher observation
- Unit quizzes
- Unit test
- Study island

## Summative

- Final Exam
- PSSAs

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# **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 12: Multiplying and Dividing Expressions	TIMEFRAME: 1-2 weeks (time permitting)
with Exponents	

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.

## **UNIT OBJECTIVES (SWBATS):**

- Learn to simplify fractions using variables with exponents with and without a fraction bar
- Learn to multiply variables with exponents
- Write numbers using scientific notation

# **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

- Power
- Base
- Scientific Notation

## ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

## Diagnostic

- Unit 12 Pre-Test
- CDTs

## Formative

- Teacher observation
- Unit quizzes
- Unit test
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Math manipulative

Notes

Supplemental handouts/worksheets/websites

Coach Workbooks

Graph paper

White boards

Projector/TV

SAS

May vary based on instructor, class, availability, updates

# **RESOURCE SPECIFIC VOCABULARY:**

Wallenpaupack Area School District Curriculum	
COURSE: Transitional Math 7	GRADE/S: 7
UNIT 13: Measurement	TIMEFRAME: 1-2 weeks (time permitting)

- **CC.2.1.7.E.1** Apply and extend previous understandings of operations with fractions to operations with rational numbers.
- CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.
- **CC.2.2.7.B.3** Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.

# **UNIT OBJECTIVES (SWBATS):**

- How to convert between customary units of measure
- How to convert between metric units of measure
- How to convert rates
- Learn the latin metric prefixes and their meanings

# **INSTRUCTIONAL STRATEGIES/ACTIVITIES:**

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

## **ANCHOR VOCABULARY:**

- Dimensional analysis
- Meter
- Liter
- Gram
- Base Unit
- Kilo-
- Hecto-
- Deka-
- Deci-
- Centi-
- Milli-

# ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

## Diagnostic

- Unit 13 Pre-Test
- CDTs

## Formative

- Teacher observation
- Unit quizzes
- Unit test
- 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.study is land.com

Scientific calculators

Math manipulative

**Notes** 

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## **RESOURCE SPECIFIC VOCABULARY:**