POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

MATH: GRADE 5	STATE STANDARD AREA/UNIT:	Numbers and Operations: Numbers and Operations in Base Ten	TIME FRAME:	Ongoing

NATIONAL COMMON CORE STANDARDS:

Understand the place value system.

- **5.NBT.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
- **5.NBT.2** Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
- **5.NBT.3** Read, write, and compare decimals to thousandths.
    a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).
    b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
- **5.NBT.4** Use place value understanding to round decimals to any place.

Perform operations with multi-digit whole numbers and with decimals to hundredths.

- **5.NBT..5** Fluently multiply multi-digit whole numbers using the standard algorithm.
- **5.NBT.6** Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- **5.NBT.7** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

MATHEMATICAL PRACTICES:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

ESSENTIAL QUESTIONS	VOCABULARY			ASSESSMENT
• **What is the place value system?** • **How do we compare numbers?** • **How do you perform operations with multi-digit whole numbers and with decimals to hundredths?** • **How do you multiply larger numbers?** • **How do you evaluate an exponent?** • **How do you divide using larger numbers?** • **What patterns do you notice while dividing by 10?** • **What is distributive property?**	digits sum divide value subtraction remainder power standard form difference expanded form distributive property word form	multiple equivalent decimals value divisor decimal product decimal point estimate tenths hundredths exponents	thousandths squared base factor dividend cubed addend rounding place quotient base ten whole number reasonable	**<u>Formative:</u>** • Journals/logs • KWL chart • At the bell activities • Question and answer • Thumbs up/thumbs down • Individual white boards • Homework • Quizzes • Constructed response/open-ended problem solving • Performance tasks • Exit slips **<u>Summative:</u>** • Benchmark assessments • Performance based assessments o Quizzes o Tests o Constructed response/open-ended problem solving o Performance tasks o Project • Spiral Review Checkpoints • Study Island Practice

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

UNIT OF INSTRUCTION: NUMBERS AND OPERATIONS IN BASE 10

PA COMMON CORE STANDARDS	ESSENTIAL CONTENT/ LEARNING ACTIVITIES
CC.2.1.5.B.1: Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals. **Essential Skills and Understandings** • Ability to build on experience with whole numbers and decimals within the base 10 system. • Knowledge of exponents with powers of 10. • Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000). • Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. • Use place value understanding to round decimals to any place. **CC.2.1.5.B.2: Extend an understanding of operations with whole numbers to perform operations including decimals.** **Essential Skills and Understandings** • Fluently multiply multi-digit whole numbers using the standard algorithm. • Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. • Ability to recognize that the quotient is not always smaller than the dividend. • Ability to recognize that the product is not always larger than its factors. • Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. • Relate the strategy used to a written method and explain the reasoning used.	**M05.A.T.1: Understand the place value system.** **M05.A-T.1.1.1** • Demonstrate an understanding that in a multi-digit number, a digit in the ones place represents one tenth of what it represents in the place to its left. **M05.A-T.1.1.2** • Explain patterns in the number of zeros of the product when multiplying a number by powers of 10 and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10. **M05.A-T.1.1.3** • Read and write decimals to thousandths using base 10 numerals, word form, and expanded form. **M05.A-T.1.1.4**. • Compare two decimals to the thousandths based on meanings of the digits in each place, using greater than, less than, and equal symbols. (>, <, =). **M05.A-T.1.1.5** • Round decimals to any place up to thousandths. **M05.A.T.2: Perform operations with multi-digit whole numbers and with decimals to hundredths.** **M05.A-T.2.1.1** • Multiply multi-digit whole numbers not to exceed three-digit by three-digit. **M05.A-T.2.1.2** • Find whole number quotients of whole numbers with up to four-digit dividends and two-digit divisors. **M05.A-T.2.1.3** • Add, subtract, multiply, and divide decimals to the hundredths (no divisors with decimals).

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

DIFFERENTIATION ACTIVITIES:

Teacher directed differentiated instructional projects and activities are ongoing and based on student need.

ENRICHMENT:

- Pearson SuccessNet On-Line Teacher's Edition
- First In Math
- StudyIsland
- Web-based Math Resources/tutorials
- Small group instruction
- Investigation Workshops
- Math Centers
- Teacher generated/differentiated instruction enrichment and activities
- Supporting the range of learners as per teacher manual
- Encourage and support learners in explaining how they applied their skills during mathematical tasks
- Enrichment based on student GIEP or need of student
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- Enrichment Units in Math, Book 2
- Math Extension Units, Book 2
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- Hands-On Equations
- Groundworks
- The Mathmaker (Cooperative Math Activities)
- MathArt Projects and Activities
- Challenge Math (Grades 4-5-6)
- Problem Solving Genius (Zaccaro) 5-6th grade
- Cranium Crackers logic and math 5-6

REMEDIATION:

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- One-on-one re-teaching
- Volunteer/peer tutoring
- Accommodations based on IEP and/or need
- ELL student(or based on student need) additional support
    - Provide specific examples
    - Use of Manipulatives
    - Simplified language in word problems
    - Visuals
    - Flashcards
    - Multiple-meaning words
    - Bilingual dictionary/picture dictionary
- Math Support, Learning Support, or ELL Teachers as appropriate and based on need

RESOURCES:

- EnVISION Math, Grade 5 (Topics 1, 2, 3, 4, and 5)
- Scott Foresman-Addison Wesley (SFAW)(Chapters 1, 2, 3, and 4)
- PDE SAS portal: http://www.pdesas.org
- Thinking Maps
- KWL Charts
- Versatiles
- Partner Games
- Calculators
- Exit Tickets
- Adaptions checklist
- ELL Instructional Strategies for Math
    - ESL Handbook
    - Click on "Academic Resources" from PMSD website
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- StudyIsland
- http://www.khanacademy.org/
- Thinkfinity website: http://www.thinkfinity.org/home
- IXL Website: http://www.IXL.com/math/
- United Streaming: http://streaming.discoveryeducation.com/index.cfm
- www.sumdog.com
- http://edhelper.com/place_value.html
- http://illuminations.nctm.org
- http://insidemathematics.org
- www.teachingchannel.org
- www.Learnzillion.com
- http://illustrativemathematics.org/standards/k8
- http://wiki.warren.kyschools.us/groups/wcpscommoncorestandards/
- www.teachingchannel.org
- http://www.learnzillion.com
- http://www.commoncoresheets.com
- http://www.kidsknowit.com
- http://www.teacherspayteachers.com
- flexmath.ck12.org/

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

MATH: GRADE 5	STATE STANDARD AREA/UNIT:	Numbers and Operations: Numbers and Operations - Fractions	TIME FRAME:	Ongoing

NATIONAL COMMON CORE STANDARDS:

Use equivalent fractions as a strategy to add and subtract fractions.

- **5.NF.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)
- **5.NF.2** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.

Apply and extend previous understandings of multiplication and division.

- **5.NF.3** Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?
- **5.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
    a. Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)
    b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- **5.NF.5** Interpret multiplication as scaling (resizing), by:
    a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
    b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (n × a)/(n × b) to the effect of multiplying a/b by 1.
- **5.NF.6** Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- **5.NF.7** Apply and extend previous understandings of division to divide unit fractions by whole numbers

MATHEMATICAL PRACTICES:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

and whole numbers by unit fractions. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3. b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4. c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?	

ESSENTIAL QUESTIONS	VOCABULARY	ASSESSMENT

• **How can you use equivalent fractions as a strategy to add and subtract fractions?**
• **How does division relate to multiplication of fractions?**
• **How are fractions and division related?**
• **How can you apply and extend previous understandings of multiplication and division to multiply and divide fractions?**
	least common multiple(LCM)
	least common denominator (LCD)
	reciprocal
	resizing
	scaling
	numerator
	denominator
	mixed number
	improper
	fraction
	simplest form
		Formative:
		• Journals/logs
		• KWL chart
		• At the bell activities
		• Question and answer
		• Thumbs up/thumbs down
		• Individual white boards
		• Homework
		• Quizzes
		• Constructed response/open-ended problem solving
		• Performance tasks
		• Exit slips
		
		Summative:
		• Benchmark assessments
		• Performance based assessments
		  o Quizzes
		  o Tests
		  o Constructed response/open-ended problem solving
		  o Performance tasks
		  o Project
		• Spiral Review Checkpoints
		• Study Island Practice

UNIT OF INSTRUCTION: NUMBERS AND OPERATIONS: FRACTIONS	PA COMMON CORE STANDARDS	ELIGIBLE CONTENT/LEARNING ACTIVITIES

	CC.2.1.5.C.1: Use the understanding of equivalency to add and subtract fractions.
	
	Essential Skills and Understandings
	• Ability to create equivalent fractions for each addend by using the identity property.
	• Knowledge of understanding addition and subtraction of fractions as joining and separating parts referring to the same whole.
	
	CC.2.1.5.C.2: Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
	
	Essential Skills and Understandings
	• Ability to recognize that a fraction is a representation of division.
	• Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
	  o Knowledge of unit fractions to multiply all fractions.
	  o Knowledge of using rectangular arrays to find area using rational numbers.
	• Interpret multiplication as scaling (resizing).
	• Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
	• Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number.
	• Solve real world problems involving multiplication of fractions and mixed numbers.
	• Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
	• Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.
	• Interpret division of a whole number by a unit fraction, and compute such quotients. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4
	• Knowledge of the relationship between multiplication and division.
		M05.A-F.1: Use equivalent fractions as a strategy to add and subtract fractions.
		
		M05.A-F.1.1.1
		• Add and subtract fractions (including mixed numbers) with unlike denominators.
		
		M05.A-F.2: Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
		
		M05.A-F.2.1.1
		• Solve word problems involving division of whole numbers leading to answers in the form of fractions (including mixed numbers).
		
		M05.A-F.2.1.2
		• Multiply a fraction (including mixed numbers) by a fraction.
		
		M05.A-F.2.1.3
		• Demonstrate an understanding of multiplication as scaling (resizing).
		
		M05.A-F.2.1.4
		• Divide unit fractions by whole numbers and whole numbers by unit fractions.

DIFFERENTIATION ACTIVITIES:
Teacher directed differentiated instructional projects and activities are ongoing and based on student need.

ENRICHMENT:

- Pearson SuccessNet On-Line Teacher's Edition
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- Volunteer/peer tutoring
- Accommodations based on IEP and/or need
- ELL student(or based on student need) additional support
    - Provide specific examples
    - Use of Manipulatives
    - Simplified language in word problems
    - Visuals
    - Flashcards
    - Multiple-meaning words
    - Bilingual dictionary/picture dictionary
- Math Support, Learning Support, or ELL Teachers as appropriate and based on need

RESOURCES:

- EnVISION Math, Grade 5 (Topics 9 and 11)
- Scott Foresman-Addison Wesley (SFAW) (Chapters 7 and 8)
- PDE SAS portal: http://www.pdesas.org
- Thinking Maps
- KWL Charts
- Versatiles
- Partner Games
- Calculators
- Exit Tickets
- Adaptions checklist
- ELL Instructional Strategies for Math
    - ESL Handbook
    - Click on "Academic Resources" from PMSD website
    - Click on "ESL" on left side of tool bar.
    - Click on the link to the PMSD ESEL Handbook
        - Scroll through to page 44 in the appendices.
- Teacher generated/differentiated instruction resources and activities
- Promethean Flipcharts/ActiveVotes
- Student math handbook flipchart
- Math Internet Resources from PMSD Resource Page
- BrainPOP Junior/BrainPOP
- First In Math
- StudyIsland
- http://www.khanacademy.org/
- Thinkfinity website: http://www.thinkfinity.org/home
- IXL Website: http://www.IXL.com/math/\
- United Streaming: http://streaming.discoveryeducation.com/index.cfm
- www.sumdog.com
- http://edhelper.com/place_value.html
- http://illuminations.nctm.org
- http://insidemathematics.org
- www.teachingchannel.org
- http://illustrativemathematics.org/standards/k8
- http://wiki.warren.kyschools.us/groups/wcpscommoncorestandards/
- www.teachingchannel.org
- http://www.learnzillion.com
- http://www.commoncoresheets.com
- http://www.kidsknowit.com
- http://www.teacherspayteachers.com

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

MATH: GRADE 5	STATE STANDARD AREA/UNIT:	Algebraic Concepts: Operations and Algebraic Thinking	TIME FRAME:	Ongoing

NATIONAL COMMON CORE STANDARDS:

Write and interpret numerical expressions.

- **5.OA.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- **5.OA.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.

Analyze patterns and relationships.

- **5.OA.3** Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

MATHEMATICAL PRACTICES:

1. Make sense of problems and persevere in solving them.
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4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

ESSENTIAL QUESTIONS	VOCABULARY	ASSESSMENT	
		Formative:	**Summative:**

• **How do you write and interpret a numerical expression?**
• **What is the order of operations?**
• **How do you write and interpret patterns and equations?**
• **How can patterns be extended, described, and generalized?**
• **How do you write and interpret a table and a pattern?**
	expression
	variable
	order of operations
	term
		• Journals/logs
		• KWL chart
		• At the Bell Activities
		• Question and answer
		• Thumbs up/thumbs down
		• Individual white boards
		• Homework
		• Quizzes
		• Constructed response/ open-ended problem solving
		• Performance tasks
		• Exit Slips
			• Benchmark assessments
			• Performance based assessments:
			  ○ Quizzes
			  ○ Tests
			  ○ Constructed response/ open-ended problem solving
			  ○ Performance Tasks
			  ○ Projects
			• Spiral Review Checkpoints
			• Study Island Practice

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

UNIT OF INSTRUCTION: OPERATIONS AND ALGEBRAIC THINKING	PA COMMON CORE STANDARDS	ELIGIBLE CONTENT/LEARNING ACTIVITIES
	CC.2.2.5.A.1: Interpret and evaluate numerical expressions using order of operations. **Essential Skills and Understandings** • Ability to build on knowledge of order of operations to find the value of an expression without variables. • Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. **CC.2.2.5.A.4**: Analyze patterns and relationships using two rules. **Essentials Skills and Understandings** • Knowledge that corresponding terms are used to create ordered pairs. • Ability to apply knowledge of the coordinate system.	**M05.B-O.1.1: Write and interpret numerical expressions.** **M05.B-O.1.1.1** • Use multiple grouping symbols (parentheses, brackets, or braces) in numerical expressions and evaluate expressions containing these symbols. **M05.B-O.1.1.2** • Write simple expressions that model calculations with numbers and interpret numerical expressions without evaluating them. **M05.B-O.2.1: Analyze patterns and relationships.** **M05.B-O2.1.1** • Generate two numerical patterns using two given rules. **M05.B-02.1.2** • Identify apparent relationships between corresponding terms of two patterns with the same starting numbers that follow different rules.

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

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    - Use of Manipulatives
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    - Visuals
    - Flashcards
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- United Streaming: http://streaming.discoveryeducation.com/index.cfm
- www.sumdog.com
- http://edhelper.com/place_value.html
- http://illuminations.nctm.org
- http://insidemathematics.org
- www.teachingchannel.org
- http://illustrativemathematics.org/standards/k8
- http://wiki.warren.kyschools.us/groups/wcpscommoncorestandards/
- www.teachingchannel.org
- http://www.learnzillion.com
- http://www.commoncoresheets.com
- http://www.kidsknowit.com
- http://www.teacherspayteachers.com
- flexmath.ck12.org/

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

MATH: GRADE 5	STATE STANDARD AREA/UNIT:	Geometry: Geometry	TIME FRAME:	Ongoing

NATIONAL COMMON CORE STANDARDS:

Graph points on the coordinate plane to solve real-world and mathematical problems.

- **5.G.1** Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
- **5.G.2** Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Classify two-dimensional figures into categories based on their properties.

- **5.G.3** Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
- **5.G.4** Classify two-dimensional figures in a hierarchy based on properties.

MATHEMATICAL PRACTICES:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

ESSENTIAL QUESTIONS	VOCABULARY		ASSESSMENT	
• **How can we classify two-dimensional figures based on their properties?** • **How do we graph points on the coordinate plane to solve real world and mathematical problems?**	Polygon Regular Polygon Triangle Quadrilateral Pentagon Hexagon Octagon Equilateral Triangle Isosceles Triangle	Scalene Triangle Right Triangle Acute Triangle Obtuse Triangle Parallelogram Trapezoid Rectangle Rhombus Square	**Formative:** • Journals/logs • KWL chart • At the bell activities • Question and answer • Thumbs up/thumbs down • Individual white boards • Homework • Quizzes • Constructed response/open-ended problem solving • Performance tasks • Exit slips	**Summative:** • Benchmark assessments • Performance based assessments o Quizzes o Tests o Constructed response/open-ended problem solving o Performance tasks o Projects • Spiral Review Checkpoints • Study Island Practice

UNIT OF INSTRUCTION: GEOMETRY	PA COMMON CORE STANDARDS	ELIGIBLE CONTENT /LEARNING ACTIVITIES
	CC.2.3.5.A.1: Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems. **Essentials Skills and Understandings** • Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. • Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond. • Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. **CC.2.3.5.A.2:** Classify two dimensional figures into categories based on an understanding of their properties. **Essential Skills and Understandings** • Classify two-dimensional figures in a hierarchy based on properties. • Knowledge of classifying two dimensional figures to see relationships among the attributes of two-dimensional figures.	**M05.C-G.1: Graph points on the coordinate plane to solve real-world and mathematical problems.** **M05.C-G.1.1.1** • Identify parts of the coordinate plane (x-axis, y-axis, and the origin) and the ordered pair (x-coordinate and y-coordinate). Limit the coordinate plane to quadrant I. **M05.C-G.1.1.2** • Represent real world and mathematical problems by plotting points in Quadrant I of the coordinate plane and interpret coordinate values of points in the context of the situation. **M05.C-G.2.1**: **Classify two-dimensional figures into categories based on their properties.** **M05.C-G.2.1.1** • Classify two-dimensional figures in a hierarchy based on properties.

DIFFERENTIATION ACTIVITIES:
Teacher directed differentiated instructional projects and activities are ongoing and based on student need.

ENRICHMENT:

- Pearson SuccessNet On-Line Teacher's Edition
- First In Math
- StudyIsland
- Web-based Math Resources/tutorials
- Small group instruction
- Investigation Workshops
- Math Centers
- Teacher generated/differentiated instruction enrichment and activities
- Supporting the range of learners as per teacher manual
- Encourage and support learners in explaining how they applied their skills during mathematical tasks
- Enrichment based on student GIEP or need of student
- Math Rules!
- Enrichment Units in Math, Book 2
- Math Extension Units, Book 2
- Differentiating Instruction with Menus: grades 3-5
- Hands-On Equations
- Groundworks
- The Mathmaker (Cooperative Math Activities)
- MathArt Projects and Activities
- Challenge Math (Grades 4-5-6)
- Problem Solving Genius (Zaccaro) 5-6th grade
- Cranium Crackers logic and math 5-6

REMEDIATION:

- Pearson Successnet On-Line Teacher's Edition
- Investigations Workshops
- Web-based Math Resources/tutorials
- First In Math
- Math Centers
- Supporting the range of learners as per teacher manual
- Teacher generated/differentiated instruction activities
- Math connections/activities with English Language Arts books, writing, activities
- Small group instruction
- Adapted assignments
- Additional time
- Alternative Assessments
- Chunking of content, assignment and/or assessments
- One-on-one re-teaching
- Volunteer/peer tutoring
- Accommodations based on IEP and/or need
- ELL student(or based on student need) additional support
    - Provide specific examples
    - Use of Manipulatives
    - Simplified language in word problems
    - Visuals
    - Flashcards
    - Multiple-meaning words
    - Bilingual dictionary/picture dictionary
- Math Support, Learning Support, or ELL Teachers as appropriate and based on need

RESOURCES:

- EnVISION Math, Grade 5 (Topics 15 and 16)
- Scott Foresman-Addison Wesley (SFAW) (Chapters 6 and 12)
- PDE SAS portal: http://www.pdesas.org
- Thinking Maps
- KWL Charts
- Versatiles
- Partner Games
- Calculators
- Exit Tickets
- Adaptions checklist
- ELL Instructional Strategies for Math
  - ESL Handbook
  - Click on "Academic Resources" from PMSD website
  - Click on "ESL" on left side of tool bar.
  - Click on the link to the PMSD ESEL Handbook
    - Scroll through to page 44 in the appendices.
- Teacher generated/differentiated instruction resources and activities
- Promethean Flipcharts/ActiveVotes
- Student math handbook flipchart
- Math Internet Resources from PMSD Resource Page
- BrainPOP Junior/BrainPOP
- First In Math
- StudyIsland
- http://www.khanacademy.org/
- Thinkfinity website: http://www.thinkfinity.org/home
- IXL Website: http://www.IXL.com/math/
- United Streaming: http://streaming.discoveryeducation.com/index.cfm
- www.sumdog.com
- http://edhelper.com/place_value.html
- http://illuminations.nctm.org
- http://insidemathematics.org
- www.teachingchannel.org
- http://illustrativemathematics.org/standards/k8
- http://wiki.warren.kyschools.us/groups/wcpscommoncorestandards/
- www.teachingchannel.org
- http://www.learnzillion.com
- http://www.commoncoresheets.com
- http://www.kidsknowit.com
- http://www.teacherspayteachers.com
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POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

MATH: GRADE 5	STATE STANDARD AREA/UNIT:	Measurement, Data and Probability: Measurement and Data	TIME FRAME:	Ongoing

NATIONAL COMMON CORE STANDARDS:

Convert like measurement units within a given measurement system.

- **5.MD.1** Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Represent and interpret data.

- **5.MD.2** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations of fractions to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.

Geometric measurement: understand concepts of volume.

- **5.MD.3** Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
    a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.
    b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- **5.MD.4** Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- **5.MD.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
    a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
    b. Apply the formulas $v = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.
    c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

MATHEMATICAL PRACTICES:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
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POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

ESSENTIAL QUESTIONS	VOCABULARY	ASSESSMENT	
• **How do you convert like measurement units within a given measurement system?** • **What is volume?** • **How can you relate volume to multiplication and addition?** • **What is the relationship between data and graphs?** • **What are line plots?** • **What are line graphs?**	Inch Foot Yard Mile Millimeter Centimeter Meter Kilometer Volume Cubic Unit Bar Graph Double-Bar Graph Pictograph Scale Interval Line Graph Line Plot Trend	**Formative:** • Journals/logs • KWL chart • At the Bell Activities • Question and answer • Thumbs up/thumbs down • Individual white boards • Homework • Quizzes • Constructed response/ open-ended problem solving • Performance tasks • Exit Slips	**Summative:** • Benchmark assessments • Performance based assessments: o Quizzes o Tests o Constructed response/ open-ended problem solving o Performance Tasks o Projects • Spiral Review Checkpoints • Study Island Practice

UNIT OF INSTRUCTION: MEASUREMENT AND DATA	PA COMMON CORE STANDARDS	ELIGIBLE CONTENT/LEARNING ACTIVITIES
	CC.2.4.5.A.1: Solve problems using conversions within a given measurement system. **Essential Skills and Understandings** • Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. **CC.2.4.5.A.2**: Represent and interpret data using appropriate scale. **CC.2.4.5.A.4:** Solve problems involving computation of fractions using information provided in a line plot. **Essential Skills and Understandings** • Knowledge of whole numbers on a line plot to represent and interpret fractional data on a line plot. • Recognize volume as an attribute of solid figures and understand concepts of volume measurement. • A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.	**M05.D-M.1 Convert like measurement units within a given measurement system.** **M05.D-M.1.1.1** • Convert among different size measurement units within a given measurement system. A table of equivalencies will be provided. **M05.D-M.2 Represent and interpret data.** **M05.D-M.2.1.1** • Solve problems involving computation of fractions by using information presented in line plots. **M05.D-M.2.1.2** • Display and interpret data shown in tallies, tables, charts, bar, picture, line graphs, and line plots. Use a title, appropriate scale, and labels. **M05.D-M.3 Geometric measurement: Understand concepts of volume and relate volume to multiplication and addition**.

UNIT OF INSTRUCTION: MEASUREMENT AND DATA	PA COMMON CORE STANDARDS	ELIGIBLE CONTENT/LEARNING ACTIVITIES
	• A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. • Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units • Find the volume of a right rectangular prism with whole-number side lengths. • Apply the formulas V = l × w × h and V = b × h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. • Knowledge that the volume of a prism is the area of the base times the height.	**M05.D-M.3.1.1** • Apply the formula (V=l x w x h and V=b x h) for rectangular prisms to find the volume of right rectangular prisms with whole number edge lengths in the context of solving real world and in mathematical problems. Formulas will be provided. **M05.D-M.3.1.2** • Find volumes of solid figures composed of two non-overlapping right rectangular prisms.

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- First In Math
- StudyIsland
- http://www.khanacademy.org/
- Thinkfinity website: http://www.thinkfinity.org/home
- IXL Website: http://www.IXL.com/math/
- United Streaming: http://streaming.discoveryeducation.com/index.cfm
- www.sumdog.com
- http://edhelper.com/place_value.html
- http://illuminations.nctm.org
- http://insidemathematics.org
- www.teachingchannel.org
- http://illustrativemathematics.org/standards/k8
- http://wiki.warren.kyschools.us/groups/wcpscommoncorestandards/
- www.teachingchannel.org
- http://www.learnzillion.com
- http://www.commoncoresheets.com
- http://www.kidsknowit.com
- http://www.teacherspayteachers.com
- Flexmath.ck12.org