POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

MATH: GRADE 1	STATE STANDARD AREA/UNIT:	Numbers and Operations: Numbers and Operations in Base Ten	TIME FRAME:	Ongoing

NATIONAL COMMON CORE STANDARDS:

- **1.NBT.1** Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
- **1.NBT.2**
  a. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: 10 can be thought of as a bundle of ten ones — called a "ten."
  b. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
  c. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
- **1.NBT.3** Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >,=, and <.
- **1.NBT.4** Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

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 you add tens and ones to make the numbers 11 to 99?** • **How can we break two digit numbers into parts?** • **What number patterns are there when counting to 120?** • **How can numbers 10 and higher be shown, counted, read, and written?** • **How can numbers to 100 be compared and ordered?** • **What are ways to add and subtract with tens and ones?**	place value ones tens digit compare greater than less than equal to number numeral multiples of 10	symbol estimate count number line smallest, largest in order more/greater less/fewer equal sign 100 chart ten frame	**Formative:** • Journals/logs • KWL chart • Warm up activity • Question and answer • Thumbs up/thumbs down • Individual white boards • Teacher observation checklists • Student activity book page **Summative:** • Benchmark assessments • Teacher observation checklists • Performance based assessments • Student generated project • Teacher observation checklists • Student activity book page

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

UNIT OF INSTRUCTION: NUMBERS AND OPERATIONS IN BASE 10	PA COMMON CORE STANDARDS	ESSENTIAL CONTENT\LEARNING ACTIVITIES
	CC.2.1.1.B.1 Extend the counting sequence to read and write numerals to represent objects. **Essential Skills and Understanding** • Ability to produce the standard list of counting words in order. • Ability to represent one to one correspondence/match concrete objects. • Ability to explore matching a visual representation of a set to a numeral. • Ability to read a written numeral. • Ability to represent numerals in a variety of ways including tracing numbers, repeatedly writing numbers, and tactile experiences with numbers. **CC.2.1.1.B.2 Use place value concepts to represent amounts of tens and ones and to compare two digit numbers.** **Essential Skills and Understanding** • Ability to use base ten manipulaltives to represent two digit numbers. • Knowledge of the connection between numerals, words, and quantities. • Knowledge that two digit numbers are composed of bundles of tens and leftover ones. • Ability to count by tens and ones. • Ability to use base ten manipulatives to build and compare ten ones and ten. • Ability to use base ten manipulatives to build and compare 11 to 19. • Ability to match the concrete representations of 11 through 19 with the numerical representations. • Ability to use base ten manipulatives to build and model the counting by tens. • Ability to apply their understanding of the value of tens and ones in order to compare the magnitude of two numbers. • Ability to use base ten manipulatives to represent the numbers and model the comparison of their values. • Ability to represent their reasoning about the comparison of two two-digit numbers using pictures, numbers, and words. • Ability to use cardinality to compare the quantity of the numbers with models. • Ability to use ordinality to compare the placement of the numbers on the number line or 100's chart. • Knowledge of the symbols <,>, = and their meaning.	• Use the number line as a tool for counting. • Develop strategies for accurately counting a set of objects by ones. • Accurately count a set of up to 60 objects by ones. • Practice the rote counting sequence forward and backward, from 1 to 60. • Develop and analyze visual images for quantities. • Develop an understanding of the magnitude and position of numbers. • Order a set of numbers and quantities up to 12. • Compare two quantities up to 20 to see which is larger. • Introduce standard notation for comparing quantities (greater than, less than, and equal to). • Develop an understanding of how the quantities in the counting sequence are related: each number is 1 more/less than the number before or after it. • Practice the oral counting sequence from 1 to 100. • See the 100 chart as a representation of the counting numbers to 100. • Write the sequence of numbers (as high as students know). • Develop strategies for accurately counting a set of objects by ones and by groups. • Count and keep track of amounts up to 60. • Count on from a known quantity. • Organize objects to count them more efficiently. • Identify, read, write, and sequence numbers to 120 and beyond. • Represent a number of objects from 0-120 with a written number. • Count and combine things that come in groups of 1, 2, 4, 5, and 10.

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

UNIT OF INSTRUCTION: NUMBERS AND OPERATIONS IN BASE TEN	PA COMMON CORE STANDARDS	ESSENTIAL CONTENT\LEARNING ACTIVITIES
	CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100 **Essential Skills and Understanding** • Knowledge of addition and subtraction fact families. • Ability to model addition and subtraction using base ten manipulatives (e.g. base ten blocks, Unifix cubes) and explain the process. • Knowledge of place value. • Ability to use a variety of methods that could involve invented, flexible, or standard algorithmic thinking. (e.g. expanded form, partial sums, a traditional algorithm). • Ability to use base ten manipulatives, number lines or hundreds charts to model finding 10 more and explain reasoning. • Knowledge of addition and subtraction fact families. • Ability to model addition using base ten manipulatives (e.g. base ten blocks, Unifix cubes) and explain the process. • Knowledge of place value and skip counting forward by 10. • Ability to use base ten manipulatives, number lines or hundreds charts to model finding 10 less and explain reasoning. • Knowledge of addition and subtraction fact families. • Ability to model subtraction using base ten manipulatives (e.g. base ten blocks, Unifix cubes) and explain the process. • Knowledge of place value and skip counting by ten.	• Count by 2s, 5s, and 10s. • Explore a 2:1 (the number of hands in a group of people) and a 5:1 relationship (the number of fingers and hands in a group). • Develop strategies for organizing sets of objects so they are easy to count and combine. • Develop meaning for counting by groups of 10. • Use a number to represent a set of objects. • Compare two 2-digit numbers and using notation (<, >) to record the results of the comparison. • Introduce and use standard notation for comparing quantities. • Read, compare and order numbers to 100. • Order a set of two digit whole numbers (1-100) from least tot greatest or greatest to least. • Use cubes in tens and one to represent a 2-digit number. • Identify tens/ones in numbers to 120 using place value blocks and charts. • Use ordinal numbers to identify positions 1st to 20th. • Round total number of days in school to the nearest ten using a number line. • Demonstrate the inverse relationship between addition and subtraction using fact families. • Identify coins and their values. • Recognize the symbols for cents and dollar. • Count sets of pennies, nickels and dimes up to one dollar. • Trade equivalent amounts of pennies, nickels and dimes.

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

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

ENRICHMENT:

- Math centers
- Supporting the range of learners as per teacher manual
- Encourage and support learners in explaining how they applied their skills during mathematical tasks
- Versatiles
- Study Island website
- Brain Pop Jr. Website http://www.brainpopjr.com/math
- Change Maker http://www.funbrain.com
- Count Us In http://www.abc.net.au/countusin/default.htm
- AAA website http://www.aaastudy.com
- US Mint http://www.usmint.gov
- Thinkfinity website: http://www.thinkginity.org/home/aspx
- United Streaming: http://streaming.discoveryeducation.com/index/cfm
- Gifted education teacher

REMEDIATION:

- Adapted assignments
- Additional time
- Alternative assessments
- Chunking of content, assignment and/or assessments
- Accommodations based on IEP and/or need
- Math centers
- One-on-one re-teaching
- Volunteer/peer tutoring
- Supporting the range of learners as per teacher manual
- Teacher Generated/ differentiated Instruction activities binder
- IXL website: http://www.IXL.com/math/Grade 1
- Khan Academy http://www.khanacademy.org/
  Math support or learning support teachers

RESOURCES:

- Investigation Teacher Manuals Units 1, 3, 8
- Interactive 100's chart http://www.mathcats.com/grownupcats/ideabankoddandeven.html
- Play Base-10 Exchange game http://www.apples4theteacher.com/math/games/100-number-chart-one.html
- Play the Tens and Ones Trading or Secret Number game http://www.homeschoolmath.net/teaching/pv/tens_ones_problems.php
- Using < and > in number models http://www.mathisfun.com/equal-less-greater.html
- Reviewing basic number line concepts http://www.helpingwithmath.com/resources/oth_number_lines.htm
- Skip counting and hopping up and back using a number line http://www.funbrain.com/linejump/index.html
- PDE SAS portal: http://www.pdesas.org
- Math Their Way
- Thinking Maps
- KWL Charts
- Versatiles
- Partner Games
- Calculators
- Exit Tickets
- Adaptions checklist
- Teacher generated/differentiated instruction activities binder

RESOURCES:	• 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.
	• Promethean Flipcharts/ActiveVotes
	• Student math handbook flipchart
	• Math Internet Resources from PMSD Resource Page
	• BrainPOP Junior/BrainPOP
	• 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
	• ABCYA.com
	• Coolmath.com
	• Collaborativelearning.PBworks.com
	• Ghost Blasters 2 Website: http://resources.oswego.org/games/ghostblasters2/gb2nores.html
	• Harcourt math facts: http://www.harcourtschool.com
	• http://gamequarium.com/placevalue.html
	• www.starfall.com
	• http://www.etacuisenaire.com/pdf/gridpaper.pdf
	• http://www.ablongman.com/vandewalleseries/Vol_1_BLM_PDFs/BLM19.pdf
	• Who Has? More or Less http://www.mathwire.com/whohas/whmoreorless.pdf
	• Who Has? With tens and ones http://www.mathwire.com/whohas/whbaseten.pdf
	• Who Has? With hundreds http://www.mathwire.com/whohas/whohaspv.pdf
	• http://www.senteacher.org/worksheet/47/placevalue.xhtml
	• http://www.commoncoresheets.com

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

MATH: GRADE 1	STATE STANDARD AREA/UNIT:	Algebraic Concepts: Operations and Algebraic Thinking	TIME FRAME:	Ongoing

NATIONAL COMMON CORE STANDARDS:

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

- **1.OA.1** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- **1.OA.2** Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- **1.OA.3** Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.*
- **1.OA.4** Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.*
- **1.OA.5** Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- **1.OA.6** Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g. knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13)
- **1.OA.7** Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*
- **1.OA.8** Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 +? = 11, 5 = ・ – 3, 6 + 6 = ・.*

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
• **How are addition and subtraction related?** • **When solving a problem, how do we know how to solve it?** • **How, when, and why do we represent, compare, and order numbers?** • **How can visual data displays help us make connections to number relationships?**	sum plus total missing part equivalent whole numbers equation/ number sentence unknown number unknown addend associative property commutative property subtraction sign addition sign	minus sign counting on/ counting up counting all counting back number line equal sign add/addition addition equation subtract/subtraction subtraction equation take away combination equal(s)	the same as pattern(s) pattern(s) unit repeating pattern rule skip counting story problem combine plus sign symbol addends missing addend difference minus	**Formative:** • Journals/logs • KWL chart • Warm up activity • Question and answer • Thumbs up/thumbs down • Individual white boards • Teacher observation checklists • Student activity book page **Summative:** • Benchmark assessments • Teacher observation checklists • Performance based assessments • Student generated projects • Teacher observation checklists • Student activity book page

UNIT OF INSTRUCTION: OPERATIONS AND ALGEBRAIC	PA COMMON CORE STANDARDS	ESSENTIAL CONTENT\LEARNING ACTIVITIES
	CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 12. **Essential Skills and Understanding** • Ability to represent the problem in multiple ways including drawings, objects/manipulatives. • Ability to take	• Use manipulatives, drawings, tools, and notation to show strategies and solutions. • Use the number line as a tool for counting. • Introduce and use standard notation (+ and =) to represent addition situations. • Record a solution to a problem. • Represent number combinations with numbers and pictures. • Make sense of and develop strategies to solve addition and subtraction problems with small numbers. • Visualize and retell the action in an addition and subtraction situation. • Model the action of an addition or subtraction problem with counters or drawings. • Find the total of two or more quantities up to 20 by counting all, counting on, or using number combinations. • See that adding the same two numbers results in the same total, regardless of context. • Compose numbers up to 20 with 2 or more addends.

UNIT OF INSTRUCTION: OPERATIONS AND ALGEBRAIC THINKING	PA COMMON CORE STANDARDS	ESSENTIAL CONTENT\LEARNING ACTIVITIES
	apart/combine numbers in a wide variety of ways. • Ability to use flexible thinking strategies to develop the understanding of the traditional algorithms and their processes. • Ability to solve a variety of addition and subtraction word problems. • Ability to use □ or ? to represent an unknown in an equation. • Ability to add numbers in any order and be able to identify the most efficient way to solve a problem. **CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.** **Essential Skills and Understanding** • Knowledge of and ability to use the properties of operations. • Ability to connect addition to subtraction. • Ability to apply the strategies to think addition rather than take away. • Ability to use concrete models with manipulatives to find the unknown.	• Find and explore relationships among combinations of numbers up to 20. • Record combinations of two numbers that make a certain total. • Solve a problem with multiple solutions. • Solve a problem in which the total and one part are known. • Connect written numbers and standard notation (+, -, =) to the quantities and actions they represent. • Use the equal sign to show equivalent expressions and generate equivalent expressions for a number. • Use numbers and standard notation to record. • Develop methods for recording addition and subtraction (removal) strategies. • Represent numbers by using equivalent expressions. • Make sense of and develop strategies to solve addition and subtraction problems with small numbers. • Develop counting on as a strategy for combining two numbers. • Estimate whether an amount is more or less than a given quantity. • Model the action of an addition or subtraction (removal) problem with counters or drawings. • Subtract one number from another number, with initial totals up to 12. • Develop strategies for solving addition and subtraction (removal) problems. • See that subtracting the same two numbers (e.g. 6 from 10) results in the same difference regardless of context (e.g. number and dot cubes, cards, objects). • See that adding the same two numbers results in the same total, regardless of context. • Find as many 2-addend combinations of a number as possible. • Prove that all of the possible two addend combinations of a number have been found. • Develop the strategy of counting on. • Develop fluency with the 2-addend combinations of 10. • Use 5 + 5 to reason about other combinations of 10. • Solve related story problems. • Add 2 or more single-digit numbers. • Find the total of two or more quantities up to 20 by counting all, counting on, or using number combinations. • Solve addition and subtraction story problems. • Determine whether equations are true or false. • Connect written numbers and standard notation (+, -, =) to the quantities and actions they represent. • Use the equal sign to show equivalent expressions. • Develop strategies for recording solutions to story problems. • Develop strategies for solving problems with unknown change/start. • Construct, describe, and extend repeating patterns. • Identify what comes next in a repeating pattern. • Use the word pattern to describe some kind of regularity in a sequence.

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

UNIT OF INTSRUCTION: OPERATIONS AND ALGEBRAIC THINKING	PA COMMON CORE STANDARDS	ESSENTIAL CONTENT\LEARNING ACTIVITIES
	• Knowledge of and ability to use addition and subtraction counting strategies to solve problems. • Knowledge that an equal sign represents the relationship between two equal quantities. • Knowledge that the quantities on both sides of the equation are equal in value.	• Identify the unit (rule) of a repeating pattern. • Use the word pattern to describe some kind of regularity in a sequence. • Identify and use patterns in the sequence of numbers by 100. • Recognize/label patterns. • Create a new pattern and label it. • Represent a repeating unit in more than one way (for example, representing a red–blue–red–blue cube pattern with the movements clap–slap knees–clap–slap knees). • Compare repeating and non-repeating sequences. • Describe a repeating pattern as a sequence built from a part that repeats over and over called the unit. • Identify the unit of a repeating pattern. • Extend a repeating pattern by adding on units to the pattern. • Identify what comes next in a repeating pattern. • Identify what comes several steps beyond the visible part of a repeating pattern. • Compare repeating patterns that have the same structure (for example, ABC), but different elements (for example, red–blue–green and yellow–orange–black). • Compare repeating patterns that have the same length of unit, but different structures (for example, red–blue–green and red–red–blue both have 3-element units). • Construct, describe, and extend number sequences with constant increments generated by various contexts. • Associate counting numbers with elements of a repeating pattern. • Determine the element of a repeating pattern associated with a particular counting number. • Determine and describe the number sequence associated with one of the elements in the unit of a repeating pattern (e.g., the numbers associated with B in an AB pattern are 2, 4, 6, 8 . . .). • Model a constant rate of increase with concrete materials. • Describe how a number sequence represents a situation with a constant rate of change. • Extend a number sequence associated with a situation with a constant rate of change. • Determine how and why the same number sequences can be generated by different contexts. • Record strategies for counting and combining. • Consider notation for equivalent expressions (e.g., 7 + 8 = 10 + 5). • Add and subtract ten to/from 2-digit numbers. • Add and subtract within 20, demonstrating fluency for +/- within 10. • Add a 1-digit number, 10, or a multiple of ten, to a 2-digit number. • Subtract a multiple of ten from a multiple of ten. • Know addition combinations of 10. • Introduce and use standard notation to represent addition situations. • Use horizontal and vertical notation for addition/subtraction problems. • Apply communicative and associative properties of addition. • Visualize, retell and model the action in addition and subtraction situations involving removal.

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

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

ENRICHMENT:

- Math Centers
- Supporting the range of learners as per teacher manual
- Encourage and support learners in explaining how they applied their skills during mathematical tasks
- Thinkfinity website: http://www.thinkfinity.org/home.aspx
- Unite Streaming: http://streaming.discoveryeducation.com/index.cfm
- Study island website
- Interactive games http://www.resources.oswego.org/games
- Together again http://www.pbs.org/teachers.connect/resources/6982/preview/
- Ghost Blasters 2 Website http://www.resources.oswego.org/games/ghostblaster2/gm2nores.html
- Mad Minute Math Challenge http://www.sadlier-oxford.com/math/mc_minutes.cfm?grade=3&sp=student&tp=minutes&tp
- Gifted education teacher

REMEDIATION:

- Adapted assignments
- Additional time
- Alternative assessments
- Chunking of content, assignment and/or assessments
- Accommodations based on IEP and/or need
- Math Centers
- One-on-one re-teaching
- Volunteer/peer tutoring
- Supporting the range of learners as per teacher manual
- Teacher generated/differentiated instruction activities binder
- IXL website: http://www.ixl.com/math/kindergarten
- Brain Pop Junior http://www.brainpopjr.com/math/
- Addition/subtraction http://www.funbrain.com
- AAA Website http://www.aaastudy.com
  Math support or learning support teachers

RESOURCES:

- Investigations Teacher Manuals Units 6, 7
- Math Their Way : Chapter 2, pp. 21-42; Chapter 3, pp.58-87; Chapter 7, pp. 171-197; Chapter 9 ,pp.237-241; Chapter 10, pp. 254 – 273
- www.sumdog.com
- www.starfall.com
- PDE SAS portal: http://www.pdesas.org
- Thinking Maps
- KWL Charts
- Versatiles
- Partner Games
- Calculators
- Exit Tickets
- Adaptions checklist
- Teacher generated/differentiated instruction activities binder

RESOURCES:

- 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.
- Promethean Flipcharts/ActiveVotes
- Student math handbook flipchart
- Math Internet Resources from PMSD Resource Page
- Harcourt math facts: http://www.harcourtschool.com
- http://gamequarium.com/placevalue.html
- http://www.etacuisenaire.com/pdf/gridpaper.pdf
- http://www.ablongman.com/vandewalleseries/Vol_1_BLM_PDFs/BLM19.pdf
- Who Has? More or Less http://www.mathwire.com/whohas/whmoreorless.pdf
- Who Has? With tens and ones http://www.mathwire.com/whohas/whbaseten.pdf
- Who Has? With hundreds http://www.mathwire.com/whohas/whohaspv.pdf
- Continue the pattern http://nlvm.usu.edu/en/nav/frames
- Spacey math website http://www.learningplanet.com/sam/sm/index.asp
- Build a bear math flashcards http://www.buildabear.com
- Harcourt math facts http://www.harcoutschool.com
- Patterns http://www.primarygames.com/patterns/start/htm
- http://www.math.rice.edu/~lanius/counting/pattern.html
- Counting by 2's for even/odd numbers http://www.aaamath.com/g25A2_x1.htm
- Identifying even/odd number patterns HTTP://WWW.MATHCATS.COM/GROWNUPCATS/IDEABANKODDANDEVEN.HTML
- Solving number stories http://www.mathcats.com/explore/numberstories.html
- Introducing and generating fact triangles using fact families http://instruction.aapps.k12.mi.us/em_parent-hdbk/activities.html
- BrainPOP Junior/BrainPOP
- 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://www.learnzillion.com
- http://illustrativemathematics.org/standards/k8
- http://wiki.warren.kyschools.us/groups/wcpscommoncorestandards/
- www.teachingchannel.org

RESOURCES:	
	• http://www.learnzillion.com • ABCYA.com • Coolmath.com • Collaborativelearning.PBworks.com • Ghost Blasters 2 Website: http://resources.oswego.org/games/ghostblasters2/gb2nores.html • http://www.senteacher.org/worksheet/47/placevalue.xh • www.starfall.com

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

MATH: GRADE 1	STATE STANDARD AREA/UNIT:	Geometry: Geometry	TIME FRAME:	Ongoing

NATIONAL COMMON CORE STANDARDS:

- **1.G.1** Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
- **1.G.2** Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Students do not need to learn formal names such as "right rectangular prism.")
- **1.G.3** Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

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 shapes and solids be described, compared, and used to make other shapes?** • **How can fractions be used to name a part of a whole object?** • **How are shapes used in objects all around you?** • **Can you identify shapes within everyday objects?**	attribute vertices vertex sides 2-D shape (two-dimensional) 3-D shape (three-dimensional)	half halves fourths/quarters whole equal shares rectangle square triangle circle trapezoid	hexagon rhombus quadrilateral geometry cone cylinder cube rectangular prism footprint face	**Formative:** • Journals/logs • KWL chart • Warm up activity • Question and answer • Thumbs up/thumbs down • Individual white boards • Teacher observation checklists • Student activity book page **Summative:** • Benchmark assessments • Teacher observation checklists • Performance based assessments • Student generated projects • Teacher observation checklists • Student activity book page

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

UNIT OF INSTRUCTION: GEOMETRY	PA COMMON CORE STANDARDS	ESSENTIAL CONTENT\LEARNING ACTIVITIES
	CC.2.3.1.A.1 Compose and distinguish between two- and three dimensional shapes based on their attributes. **Essential Skills and Understanding** • Ability to sort shapes by shape, number of sides, size or number of angles. • Ability to use geoboards, toothpicks, straws, paper and pencil, and computer games to build shapes that possess the defining attributes. • Ability to explain how two shapes are alike or how they are different from each other. • Ability to use concrete manipulatives to create composite shapes from 2 or 3 dimensional shapes. **CC.2.3.1.A.2 Use the understanding of fractions to partition shapes into halves and quarters.** **Essential Skills and Understanding** • Knowledge that the whole or unit has been partitioned into equal sized portions or fair shares. • Ability to apply the concept of sharing equally with friends lays the foundation for fractional understanding. • Ability to model halves and fourths with concrete materials.	• Describe, identify, name, and compare 2-D shapes. • Notice shapes in the environment. • Develop visual images of and language for describing 2-D shapes. • Identify common attributes of a group of shapes. • Identify the characteristics of 3-D objects by touch. • Identify characteristics of triangles and quadrilaterals. • Identify and make triangles and quadrilaterals of different shapes and sizes. • Recognize that there are many types of quadrilaterals (e.g., rectangles, trapezoids, squares, rhombuses). • Compose and decompose 2-D shapes. • Cover a region without gaps or overlaps using multiple shapes. • Decompose shapes in different ways. • Find different combinations of shapes that fill the same area. • Examine how shapes can be combined to make other shapes. • Alter designs to use more or fewer pieces to cover the same space. • See relationships between squares and triangles. • Describe the whole as two of, or four of the shares. • Learning the terms “fractions,” “halves” and “half”. • Partition a whole into equal parts and naming each part with a fraction. • Explore the idea that when you cut a whole into more fractional pieces, the pieces are smaller. • Describe and compare 2-D and 3-D shapes. • Develop vocabulary to describe 3-D shapes and their attributes. • Compare size, shape, and orientation of objects. • Describe a rectangular prism. • Compare rectangular prisms. • Observe, identify and describe characteristics of 3-D shapes. • Recognize shapes in the world. • Describe 3-D structures. • Identify 3-D shapes according to the number of vertices, edges and faces. • Explore the relationships between 2-D and 3-D shapes. • Match a 3-D object to a 2-D outline of one of its faces. • Match a 3-D object to a 2-D picture of the object. • Make 3-D objects out of 2-D pieces. • Make a 2-D representation of a 3-D object or structure. • Build a 3-D construction from a 2-D representation. • Classify geometric shapes by using two specific attributes. • Predict how shapes can be changed by combining or dividing them.

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

UNIT: GEOMETRY	PA COMMON CORE STANDARDS	ESSENTIAL CONTENT\LEARNING ACTIVITIES
		• Sort triangles from the Power Polygons into two groups: ones with/without corner angles (right angles) • Discuss the creation of two triangles with corner angles (right angles) by splitting a square or rectangle

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

ENRICHMENT:	REMEDIATION:
• Support the range of learners as per teacher manual. • Encourage and support learners in explaining how they applied their skills during mathematical tasks. • Math Centers • Partner Games from Next Grade Level • United Streaming: http://streaming.discoveryeducation.com/index.cfm • Thinkfinity website: http://www.thinkfinity.org/home.aspx • Can't wait to tessellate: http://www.pbs.org/teachers/connect/resource/6981/preview • Pattern block applet: http://arcytech.org/java/patterns/patternsj.shtml • Khan Academy http://www.khanacademy.org/ • Pearson Success Net https://www.pearsonsuccessnet.com/snpapp/login/login.jsp • Gifted education teacher	• Support the range of Learners activities as per teacher manual • One on one re-teaching • Peer tutoring • Math centers • Accommodations based on need and/or iep • Chunking of concept • Chunking of assessment • Additional time as necessary • Pattern Block Applet http://arcytech.org/java/patterns/patterns_j.shtml • Shape Safari http://www.education.com/activity/article/shapesafari_first/ • Shape and seek http://www.education.com/activity/article/shapeandseekpreschool/ • IXL website http://www.IXL.com/math/Grade_1 • Story of Shapes: http://www.storyplace.org/preschool/activities/shapesonstory.asp?Themeid=9 • The Shape Game: http://kinderwebgames.com/index.html • Khan academy http://www.khanacademy.org/ • Pearson successnet https://www.pearsonsuccessnet.com/snpapp/login/login.jsp • National Library of Virtual Manipulatives http://nlvm.usu.edu • Math support or learning support teachers

RESOURCES:

- Investigations Teacher Manuals Units 2, 9
- Family letters
- Shape construction from www.abcya.com
- Plane shapes and solid shapes videos from Brain Pop Jr.
- Building shapes http://mathforum.org/varnelle/kgeo3.html
- Solid Figures and Plane Shapes: http://www.hbschool.com/activity/solid_figures_plane_shapes/
- Identifying Pattern Block Shapes http://www.enchantedlearning.com/crafts/books/shapes/
- Constructing Polygons Using Straws http://www.mathcats.com/explore/polygons.html
- Starting a Collection of 3-D shapes http://www.bgfl.org/bgfl/custon/resources_ftp/client_ftp/ks2/maths/3d/index.htm
- Reviewing the Six 3-D shapes http://www.learner.org/interactives/geometry/3d_prisms.html
- Introducing the terms numerator and denominator http://www2.scholastic.com/browse/lessonplan.jsp?id-1070
- Finding fractional combinations to equal ½ http://www.helpwithfractions.com/equivalent-fractions.html
- PDE SAS portal: http://www.pdesas.org
- Math Their Way
- Thinking Maps
- KWL Charts
- Versatiles
- Partner Games
- Calculators
- Exit Tickets
- Adaptions checklist
- Teacher generated/differentiated instruction activities binder
- 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.
- Promethean Flipcharts/ActiveVotes
- Student math handbook flipchart
- Math Internet Resources from PMSD Resource Page
- BrainPOP Junior/BrainPOP
- 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

- Who Has? More or Less http://www.mathwire.com/whohas/whmoreorless.pdf
- Who Has? With tens and ones http://www.mathwire.com/whohas/whbaseten.pdf
- Who Has? With hundreds http://www.mathwire.com/whohas/whohaspv.pdf

RESOURCES:	• http://www.learnzillion.com • http://illustrativemathematics.org/standards/k8 • http://wiki.warren.kyschools.us/groups/wcpscommoncorestandards/ • www.teachingchannel.org • ABCYA.com • Coolmath.com • Collaborativelearning.PBworks.com • Ghost Blasters 2 Website: http://resources.oswego.org/games/ghostblasters2/gb2nores.html • Harcourt math facts: http://www.harcourtschool.com • http://gamequarium.com/placevalue.html • www.starfall.com • http://www.etacuisenaire.com/pdf/gridpaper.pdf • http://www.ablongman.com/vandewalleseries/Vol_1_BLM_PDFs/BLM19.pdf • Who Has? More or Less http://www.mathwire.com/whohas/whmoreorless.pdf • Who Has? With tens and ones http://www.mathwire.com/whohas/whbaseten.pdf • Who Has? With hundreds http://www.mathwire.com/whohas/whohaspv.pdf • http://www.senteacher.org/worksheet/47/placevalue.xhtml • http://www.commoncoresheets.com

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

MATH: GRADE 1	STATE STANDARD AREA/UNIT:	Measurement, Data and Probability: Measurement and Data	TIME FRAME:	Ongoing

NATIONAL COMMON CORE STANDARDS:

Measure lengths indirectly and by iterating length units.

- **1.MD.1** Order three objects by length; compare the lengths of two objects indirectly by using a third object.
- **1.MD.2** Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

Tell and write time.

- **1.MD.3** Tell and write time in hours and half-hours using analog and digital clocks.

Represent and interpret data.

- **1.MD.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

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

- **How can clocks and schedules be read and used?**
- **When are various types of clocks used in telling time (analog/digital)?**
- **Why is data collected?**
- **How is data gathered?**
- **What type of data can be used to create a bar graph?**
- **How can graphs be used to show data and answer questions?**
- **How do we use measurement?**
- **How can objects be measured, compared, and ordered by length?**
- **Why is it important to use estimation for measurement?**

VOCABULARY

measure
length
shorter/shortest
longer/longest
less than
more than
compare
measurement
in between
distance
height
inch
unit
table
graph
column
row
hour
time
half hour
elapsed time
quarter past
quarter to
half past
calendar
analog clock
digital clock
survey
data
category
sorting
attribute
representation
tally mark

ASSESSMENT

Formative:

- Journals/logs
- KWL chart
- Warm up activity
- Question and answer
- Thumbs up/thumbs down
- Individual white boards
- Teacher observation checklists
- Student activity book page

Summative:

- Benchmark assessments
- Teacher observation checklists
- Performance based assessments
- Student generated project
- Teacher observation checklists
- Student activity book page

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

UNIT OF INSTRUCTION: MEASUREMENT AND DATA	PA COMMON CORE STANDARDS	ESSENTIAL CONTENT\LEARNING ACTIVITIES
	CC.2.4.1.A.1 Order lengths and measure them both indirectly and by repeating length units. **Essential Skills and Understanding** • Knowledge of the concept of transitivity (the understanding that if the length of the object A is longer than the length of object B and the length of object B is longer than the length of object C then the length of object A is longer than the length of object C.) • Knowledge that length is the distance between the two endpoints of an object. • Ability to identify a unit of measure. • Knowledge of non-standard and well as standard units of measurement. • Ability to subdivide the object by the unit (placing the unit end to end with no gaps or overlaps). **CC.2.4.1.A.2 Tell and write time to the nearest half hour using both analog and digital clocks** **Essential Skills and Understanding** • Ability to apply knowledge of fractional wholes and halves to telling time. • Ability to equate a number line to 12 with the face of a clock. • Ability to match time on a digital clock with that on an analog clock. **CC.2.4.1.A.4 Represent and interpret data using tables/charts.** **Essential Skills and Understanding** • Ability to sort data into separate categories. • Ability to display in appropriate graphs, such as picture graph. • Ability to answer questions about the data such as "Which category has more?" "Which category has less?" "What is the favorite snack of our class?" and "How many more stickers does Sam have than John?"	• Describe attributes of objects. • Use attributes to sort a set of objects. • Look carefully at a group of objects to determine how they have been sorted. • Represent data. • Make a representation to communicate the results of a survey. • Make sense of data representations, including pictures, bar graphs, tallies, and Venn Diagrams. • Compare what different representations communicate about a set of data. • Create a bar graph with the structure of the graph provided. • Group data into categories. • Answer questions regarding the total data pool, totals in each category, and how many more/less in categories. • Formulate questions based on data. • Use equations to show how the sum of the responses in each category equals the total responses collected. • Organize data in numerical order. • Describe and compare the number of pieces of data in each category or at each value and interpret what the data tells you about the group. • Understand that the sum of the pieces of data in all the categories equals the number of people surveyed. • Use data to compare how two groups are similar or different. • Design and carry out a data investigation. • Interpret results of a data investigation. • Choose a survey question. • Make a plan for gathering data. • Collect and keep track of survey data. • Understand what length is and how it can be measured. • Measure lengths using different-sized units. • Identify the longest dimension of an object. • Compare lengths to determine which is longer. • Identify contexts in which measurement is used. • Understand the meaning of "at least" in the context of linear measurement. • Solve problems about comparing length.

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

UNIT OF INSTRUCTION: MEASUREMENT AND DATA	PA COMMON CORE STANDARDS	ESSENTIAL CONTENT\LEARNING ACTIVITIES
		• Develop accurate measurement techniques. • Describe measurements that are in between whole numbers of units. • Understand measuring an object using different length units will result in different measurements. • Measure length by repeating a single unit. • Use inch tiles to measure objects in inches. • Compare weights using a balance. • Compare non-standard units of capacity in terms of full, empty, holds more, holds less holds same. • Use inch tiles to measure objects in inches. • Tell time in hours and half hours using analog and digital clocks. • Name, notate, and tell time to the hour and half-hour on a digital and analog clock. • Tell time to five and fifteen minute intervals and use vocabulary such as quarter past, quarter to and half past. • Tell elapsed time to the hour and half hour.

POCONO MOUNTIAN SCHOOL DISTRICT CURRICULUM

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

ENRICHMENT:

- Support the range of Learners activities as per teacher manual.
- Encourage and support learners in explaining how they applied their skills during mathematical tasks.
- Versatiles
- Math centers
- Partner Games from next grade level
- United streaming http://streaming.discoveryeducation.com/index.cfm
- Thinkfinity http://thinkinity.org/home.aspx
- Reading Graphs HTTP://ALEXANDRIAES10.LAUSD.K12.CA.US/STAFF_PAGES/HENRY_ANKER_TESTS_NEW/MATH/GRAPHS/READING_GRAPHS_SET_01.SWF
- Graphing Activities http//www.pdesas.org/module/content/resources/4063/view.ashx
- Stop the Clock HTTP://WWW.OSWEGO.ORG/OCSD-WEB/GAMES/STOPTHECLOCK/STHEC1.HTML
- Gamequarium website http://www.gamequarium.com/measurement.html
- Data Analysis and Probability games http://mathwire.com/games/datagames.html
- Reviewing and reading the thermometer to the nearest 10 and 2 degrees http://www.mathisfun.com/measure/thermometer.html
  Gifted Teacher support as needed

REMEDIATION:

- Support the range of Learners activities as per teacher manual
- One on one re-teaching
- Peer tutoring
- Math centers
- Accommodations based on need and/or iep
- Chunking of concept
- Chunking of assessment
- Additional time as necessary
- IXL website HTTP://WWW.IXL.COM/MATH/GRADE 1
- Taller or shorter HTTP://WWW.KIDPORT.COM/GRADEK/MATH/MEASUREGEO/MATHK_TALL.HTM
- Data analysis and probability manipulatives HTTP://NLVM.USU.EDU/EN/NAV/CATEGORY_G_1_T_5.HTML
- Time works! Http://www.learningplanet.com
- Fun Brain Measure It http://www.funbrain.com
- Elementary Teddy Bear Measurement Game http://www.apples4theteacher.com/measure.html
- Gamequarium website http://www.gamequarium.com/measurement.html
- AAA website http://www.aaastudy.com
- Graphing activities http://www.pdesas.org/module/content/resources/4063/view.ashx
- Math Their Way Chapter 5 pg. 117-136
- Math support or learning support teachers

RESOURCES:

- Investigations Teacher Manual Units 4, 5
- Family letters
- What time is it? Www.primarygames.com/time/start.htm
- Discussing Tools for Telling Time http://www.timemonsters.com/
- Introducing telling time to the half hour http://www.fi.edu/time/journey/justintime/time_quiz.html
- Telling Time in Minute Intervals http://classroom.jc-schools.net/basic/math-time.html
- Introducing Inch as a Standard Unit of Length http://www.apples4theteacher.com/math.html#measurementgames
- Estimating and Measuring the Length of an Object http://content.scholastic.com/browse/article.jsp?id=2782
- PDE SAS portal: http://www.pdesas.org
- Math Their Way
- Thinking Maps
- KWL Charts
- Versatiles
- Partner Games
- Calculators
- Exit Tickets
- Adaptions checklist
- Teacher generated/differentiated instruction activities binder
- 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.
- Promethean Flipcharts/ActiveVotes
- Student math handbook flipchart
- Math Internet Resources from PMSD Resource Page
- BrainPOP Junior/BrainPOP
- 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://www.learnzillion.com
- http://illustrativemathematics.org/standards/k8
- http://wiki.warren.kyschools.us/groups/wcpscommoncorestandards/
- www.teachingchannel.org

RESOURCES:	• http://www.learnzillion.com • ABCYA.com • Coolmath.com • Collaborativelearning.PBworks.com • Ghost Blasters 2 Website: http://resources.oswego.org/games/ghostblasters2/gb2nores.html • Harcourt math facts: http://www.harcourtschool.com • http://gamequarium.com/placevalue.html • www.starfall.com • http://www.etacuisenaire.com/pdf/gridpaper.pdf • http://www.ablongman.com/vandewalleseries/Vol_1_BLM_PDFs/BLM19.pdf • Who Has? More or Less http://www.mathwire.com/whohas/whmoreorless.pdf • Who Has? With tens and ones http://www.mathwire.com/whohas/whbaseten.pdf • Who Has? With hundreds http://www.mathwire.com/whohas/whohaspv.pdf • http://www.senteacher.org/worksheet/47/placevalue.xhtml • http://www.commoncoresheets.com