SENECA VALLEY SCHOOL DISTRICT

CURRICULUM

Course Title:	**Math**
Grade Level(s):	**2**
Periods Per Week:	**5**
Length of Period:	**70 Minutes**
Length of Course:	**Full Year**
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Date:	**March 25, 2013**

COURSE DESCRIPTION:

In second grade mathematics, students are actively engaged using concrete objects and pictorial/symbolic representations to help them develop mathematical understanding. Technology is used to enhance students' learning. Students use a variety of strategies to develop an understanding of addition and subtraction situations. Operations are expanded to include an understanding of multiplication concepts. The second grade curriculum focuses on the mathematical processes of problem solving, reasoning, estimating, communicating and connecting mathematical concepts to real life situations while incorporating the mathematical practices listed below. It emphasizes the areas of numbers and operations, algebraic concepts, geometry, measurement, data, and probability.

The Standards of Mathematical Practices:

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

Standards for Mathematical Practice	
Make sense of problems and persevere in solving them.	Reason abstractly and quantitatively.
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PA Common Core Standard for Mathematical Content: **2.1 Numbers and Operations**

Understand place value.

Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).

Use place value understanding and properties of operations to add and subtract.

Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.

Mathematically proficient students communicate precisely by engaging in discussion about their reasoning using appropriate mathematical language. The terms students should learn to use with increasing precision with this cluster are: **hundreds, tens, ones, skip count, base-ten, number names to 1,000 (e.g., one, two, thirty, etc.), expanded form, greater than (>), less than (<), equal to (=), digit, compare, fluent, compose, decompose, place value, digit, ten more, ten less, one hundred more, one hundred less, add, subtract, sum, equal, addition, subtraction, difference**

Area of Focus:	Objectives		
A) Counting & Cardinality	Intentionally blank		
B) Numbers & Operations in Base Ten			
	CC.2.1.2.B.1 Use place value concepts to represent amounts of tens and ones and to compare three-digit numbers.		
	CC.2.1.2.B.2 Use place value concepts to read, write, and skip count to 1,000.		

	• Skip count by 2s, 3s, 4s, 5s, 10s & 100s Use base 10 numerals, number names and expanded form. • Recognize odd and even numbers. • Identify and explain number patterns.		
	CC.2.1.2.B.3 Use place value understanding and properties of operations to add and subtract within 1,000. • Add up to four two-digit numbers • Mentally add 10 or 100 to a given number 100 through 900, and mentally subtract 10 or 100 from a given number 100 through 900.		
C) Number & Operations – Fractions	Intentionally blank (see geometry)		

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PA Common Core Standard for Mathematical Content: **2.2. Algebraic Concepts**	
Represent and solve problems involving addition and subtraction. **Add and subtract within 20.** **Work with equal groups of objects to gain foundations for multiplication.**	
Mathematically proficient students communicate precisely by engaging in discussion about their reasoning using appropriate mathematical language. The terms students should learn to use with increasing precision with this cluster are: **add, subtract**, **more, less, equal, equation, putting together, taking from, taking apart, comparing, addend, sum, difference, odd, even, row, column, rectangular array, equal groups**	

Area of Focus:	**Objectives**		
A) Operations & Algebraic Thinking			
	CC.2.2.2.A.1 Represent and solve problems involving addition and subtraction within 100. • Solve one and two step word problems involving adding to, taking from, putting together, taking apart and comparing with unknowns in all positions.		
	CC.2.2.2.A.2 Use mental strategies to add and subtract within 20.(By the end of Grade 2, students should know from memory all sums of two one-digit numbers and their related subtraction facts.) • Use strategies of counting on, counting back, doubles, doubles + 1, and making tens.		

	CC.2.2.2.A.3 Work with equal groups of objects to gain foundations for multiplication. • Recognize multiplication as repeated addition of equal groups. • Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns. • Write an equation to express the total as a sum of equal addends.		

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PA Common Core Standard for Mathematical Content: **2.3 Geometry**	
Reason with shapes and their attributes. Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.	
Mathematically proficient students communicate precisely by engaging in discussion about their reasoning using appropriate mathematical language. The terms students should learn to use with increasing precision with this cluster are: **attribute, angle, side, circle, half-circle, quarter-circle, triangle, quadrilateral, square, rectangle, trapezoid, pentagon, hexagon, sphere, cube, cone, prism, cylinder, face, edge, vertex, surface, figure, shape, closed, open, partition, equal size, equal shares, half, halves, thirds, half of, a third of, whole, two halves, three thirds, four fourths, partition, rows, columns**	

Area of Focus:	**Objectives**		
A) Geometry			
	CC.2.3.2.A.1 Identify (recognize and name), analyze, and draw two and three-dimensional shapes having specified attributes, such as a given number of angles or a given number of equal faces.		
	CC.2.3.2.A.2 Use the understanding of fractions to partition shapes into halves, quarters, and thirds.		

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PA Common Core Standard for Mathematical Content: **2.4 Measurement, Data and Probability**	
Measure and estimate lengths in standard units. Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length. **Relate addition and subtraction to length.** **Work with time and money. (This is the students' first formal introduction to currency – dollar bills and coins.)** **Represent and interpret data.** Second Graders use measurement data as they move through the statistical process of posing a question, collecting data, analyzing data, creating representations, and interpreting the results.	
Mathematically proficient students communicate precisely by engaging in discussion about their reasoning using appropriate mathematical language. The terms students should learn to use with increasing precision with this cluster are: **collect, organize, display, show, data, attribute, sort, line plot, picture graph, bar graph, question, category, chart, table, most, least, more than, less than, about, same, different, measure, inch, foot, yard, centimeter, meter, length, longer, shorter, ruler, yardstick, meter stick, measuring tape, estimate, equation, number line, equally spaced, point, clocks, hand, hour hand, minute hand, hour, minute, a.m., p.m., o'clock, multiples of 5 (e.g., five, ten, fifteen,** etc**.), analog clock, digital clock, quarter 'til, quarter after, half past, quarter hour, half hour, thirty minutes before, 30 minutes after, 30 minutes until, 30 minutes past, quarter, dime, nickel, dollar, cent(s), $, ¢, heads, tails**	

Area of Focus:	**Objectives**		
A) Measurement and Data			
	CC.2.4.2.A.1 Estimate and measure lengths in standard units using appropriate tools. • Measure lengths to the nearest ½ inch.		
	CC.2.4.A.2 Tell and write time to the nearest five minutes using both analog and digital		

	clocks.		
	CC.2.4.2.A.3 Solve problems using coins and paper currency with appropriate symbols. (Once students are solid with coin recognition and values, they can then begin using the values to count sets of coins, compare two sets of coins, make and recognize equivalent collections of coins (same amount but different arrangements), select coins for a given amount, and make change.)		
	CC.2.4.2.A.4 Represent and interpret data using line plots, picture graphs, and bar graphs.		
	CC.2.4.2.A.6 Extend the concepts of addition and subtraction to problems involving length.		

*Unpacking the Common Core