

SENECA VALLEY SCHOOL DISTRICT



CURRICULUM

Course Title:	Math
Grade Level(s):	4
Periods Per Week:	5
Length of Period:	70 minutes
Length of Course:	Full Year
Faculty Author(s):	Brenda Brown, Kristi Dietz, Lisa Maguire, Megan Costanza
Date:	October 15, 2014

COURSE DESCRIPTION:

Fourth grade mathematics students will demonstrate: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

DESCRIPTOR	ELIGIBLE CONTENT	RESOURCES
CLUSTER 1 place value, fractions, decimals		

<p>M04.A-T.1.1 Apply place-value and numeration concepts to compare, find equivalencies, and round.</p> <p>Factors and multiples can be taught before fractions</p> <p>M04.B-O.2.1.1 Find all factor pairs for a whole number in the interval 1 through 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the interval 1 through 100 is a multiple of a given one digit number. Determine whether a given whole number in the interval 1 through 100 is prime or composite.</p>	<p>CC.2.1.4.B.1 <i>Apply place value concepts to show an understanding of multi-digit whole numbers.</i></p> <p>M04.A-T.1.1.1 Demonstrate an understanding that in a multi-digit whole number (through 1,000,000), a digit in one place represents ten times what it represents in its place to its right. <i>Example: Recognize that in the number 770, the 7 in the hundreds place is ten times the 7 in the tens place.</i></p> <p>M04.A-T.1.1.2 Read and write whole numbers in expanded, standard and word form through 1,000,000.</p> <p>M04.A-T.1.1.3 Compare two multi-digit numbers through 1,000,000 based on meanings of the digits in each place, using $>$, $+$, and $<$ symbols.</p> <p>M04.A-T.1.1.4 Round multi-digit whole numbers through 1,000,000 to any place.</p> <p>CC.2.1.4.C.1 Extend the understanding of fractions to show equivalence and ordering.</p>	
---	--	--

<p>M04.A-F.3.1 Use operations to solve problems involving decimals, including converting between fractions and decimals (may include</p>	<p>M04.A-F.2.1.4 Solve word problems involving addition and subtraction of fractions referring to the same whole or set and having like denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100).</p> <p>M04.A-F.2.1.5 Multiply a whole number by a unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; final answers do not need to be reduced or written as a mixed number). <i>Example: $5 \times (1/4) = 5/4$</i></p> <p>M04.A-F.2.1.6 Multiply a whole number by a non-unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; final answers do not need to be reduced or written as a mixed number). <i>Example: $3 \times (5/6) = 15/6$</i></p> <p>M04.A-F.2.1.7 Solve word problems involving multiplication of a whole number by a fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100).</p> <p>CC.2.1.4.C.3 Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 19/100).</p> <p>M04.A-F.3.1.1 Add two fractions with respective denominators 10 and 100. <i>Example: Express $3/10$ as $30/100$, and add $3/10 + 4/100 = 30/100 + 4/100 = 34/100$.</i></p> <p>M04.A-F.3.1.2 Use decimal notation for fractions with denominators 10 or 100. <i>Example: Rewrite 0.62 as $62/100$ and vice versa.</i></p> <p>M04.A-F.3.1.3 Compare two decimals to hundredths using the symbols $>$, $=$, or $<$, and justify the conclusions.</p>	
---	---	--

word problems).	<p>CC.2.4.4.A.4 Represent and interpret data involving fractions using information provided in a line plot.</p> <p>M04.D-M.2.1.1 Make a line plot to display a data set of measurements in fractions of a unit (e.g., intervals of $\frac{1}{2}$, $\frac{1}{4}$, or $\frac{1}{8}$).</p> <p>M04.D-M.2.1.2 Solve problems involving addition and subtraction of fractions by using information presented in line plots (line plots must be labeled with common denominators, such as $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$).</p>	
-----------------	---	--

CLUSTER 2
 geometry, patterns, measurement (customary and metric units)

<p>M04.B-O.3.1 Recognize, describe, extend, create, and replicate a variety of patterns.</p>	<p>CC.2.2.4.A.4 Generate and analyze patterns using one rule.</p> <p>M04.B-O.3.1.1 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.</p> <p><i>Example 1: Given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms alternate between odd and even numbers.</i></p> <p><i>Example 2: Given the rule “increase the number of sides by 1” and starting with a triangle, observe that the tops of the shapes alternate between a side and a vertex.</i></p>	
---	---	--

<p>M04.D-M.3.1 Use appropriate tools and units to sketch an angle and determine angle measures.</p>	<p>express measurements in a larger unit in terms of a smaller unit. A table of equivalencies will be provided. <i>Example 1: Know that 1 kg is 1,000 times as heavy as 1 g.</i> <i>Example 2: Express the length of a 4-foot snake as 48 in.</i></p> <p>M04.D-M.1.1.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems (may include finding a missing side length). Whole numbers only. The formulas will be provided.</p> <p>CC.2.4.4.A.6 Measure angles and use properties of adjacent angles to solve problems.</p> <p>M04.D-M.3.1.1 Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of specified measure.</p> <p>M04.D-M.3.1.2 Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. (Angles must be adjacent and non-overlapping.)</p>	
--	--	--

CLUSTER 3
time, data

<p>M04.D-M.1.1 Solve problems involving length, weight (mass), liquid volume, time, area, and</p>	<p>CC.2.4.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.</p> <p>M04.D-M.1.1.4 Identify time (analog or digital) as the amount of minutes before or after the</p>	
--	--	--

<p>M04.B-O.2.1 Develop and apply number theory concepts to represent numbers in various ways.</p> <p>M04.B-O.3.1 Recognize, describe, extend, create, and replicate a variety of patterns.</p>	<p><i>represent that Student A has 4 objects and Student B has 3 times as many objects, and not just 3 more objects.</i></p> <p>M04.B-O.1.1.3 Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity.</p> <p>M04.B-O.1.1.4 Identify the missing symbol (+, −, ×, ÷, =, <, >) that makes a number sentence true (single-digit divisor only).</p> <p>CC.2.2.4.A.2 Develop and/or apply number theory concepts to find factors and multiples.</p> <p>M04.B-O.2.1.1 Find all factor pairs for a whole number in the interval 1 through 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the interval 1 through 100 is a multiple of a given one digit number. Determine whether a given whole number in the interval 1 through 100 is prime or composite.</p> <p>CC.2.2.4.A.4 Generate and analyze patterns using one rule.</p> <p>M04.B-O.3.1.2 Determine the missing elements in a function table (limit to +, −, or × and to whole numbers or money).</p> <p>M04.B-O.3.1.3 Determine the rule for a function given a table (limit to +, −, or × and to whole numbers).</p>	
--	--	--

<p>M04.D-M.1.1 Solve problems involving length, weight (mass), liquid volume, time, area, and perimeter.</p>	<p>CC.2.2.4.A.1 Solve problems involving measurement and conversions from a larger unit to a smaller unit.</p> <p>M04.D-M.1.1.2 Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; money, including problems involving simple fractions or decimals; and problems that require expressing measurements given in a larger unit in terms of a smaller unit.</p> <p>CC.2.2.4.A.4 Generate and analyze patterns using one rule.</p> <p>M04.B-O.3.1.1 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. <i>Example 1: Given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms alternate between odd and even numbers.</i> <i>Example 2: Given the rule “increase the number of sides by 1” and starting with a triangle, observe that the tops of the shapes alternate between a side and a vertex.</i></p>	
---	--	--