TES Math Map	Teacher(s): Kate Alagna, Susan Altman, Jill Brimhall, Tawnya Voytko	Creation Date: November, 2009
	Grade Level: 2nd Grade	Revision Date: June, 2010

	First Trimester				Second Trimester			Third Trimester		
Math Unit	Collecting & Representing Data	Addition & Subtraction Strategies			Problem Solving			Fractions/ Probability	Double Digit Addition	Double Digit Subtraction
		Place Value	Place Value/ Money	Money	Time	Measurement	Geometry			
Month	September	October	November	December	January	February	March	April	May	June
Inquiry Questions	What are the ways data can be displayed? How do data displays help us understand information? What can data tell you about the people you survey? What makes a good survey question?	How big is 1000? How does the position of a digit in a number affect its value? What do I know about this quantity? How is it related to 1s, 10s, and 100s? How do patterns in our place value system help us compare whole numbers? What patterns do you notice when you count by 2s, 5s, and 10s? What patterns can you create? How can you use a pattern to help solve a problem? How does finding patterns help in counting?	How big is 1000? How does the position of a digit in a number affect its value? What do I know about this quantity? How is it related to 1s, 10s, and 100s? How do patterns in our place value system help us compare whole numbers? What patterns do you notice when you count by 2s, 5s, and 10s? What patterns can you create? How can you use a pattern to help solve a problem? How does finding patterns help in counting?	What could be a result of not using pennies (for example, taking them out of circulation)? How many ways can you make $1.00? How would you describe each coin?	What are the ways numbers can be broken apart and put back together? What strategies are used to estimate the answer? How can finding 10s help in addition and subtraction problems? How are addition and subtraction related? How can you use addition to help you find a solution to a subtraction problem? How can you explain in clear, written language how a problem is solved? How do you know what operation to use when solving a story problem?	What are different things we can measure? How do we decide which tool to use to measure something? Why are there standard measurement units? What would happen if everyone created and used their own rulers?	How can we describe geometric figures? What makes this shape have symmetry? What can you use to describe the size of this object?	How can you tell how likely an event is? How do we communicate the likelihood of an event? How are whole numbers and fractions represented? What is the meaning of the numerator and denominator in a fraction? Why are fractions useful?	What strategies could you use besides a traditional algorithm? How could you use expanded form to solve a two-digit problem?	What strategies could you use besides a traditional algorithm? How could you use expanded form to solve a two-digit problem?
New Concepts	Mastery of skills/concepts in all areas.									

Spiraling Foci										
Lessons, Activities, Tasks	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigation Unit #1: Session 2.5 Investigation Unit 4: All Investigations	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigations Unit #1: Sessions 3.1, 3.2, 3.3, 3.4, 3.5 Sessions 4.1, 4.3,4.4, 4.5, 4.7 Investigation Unit #3: Sessions 3.3, 3.4, 3.6, 3.7, Investigation #4 Investigation Unit #5: Investigation 2 Investigation Unit #6: Investigation 2 Sessions 3.1, 3.3, 3.4, 3.6 Investigation 4	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigations Unit #1: Sessions 3.1, 3.2, 3.3, 3.4, 3.5 Sessions 4.1, 4.3,4.4, 4.5, 4.7 Investigation Unit #3: Sessions 3.3, 3.4, 3.6, 3.7, Investigation #4 Investigation Unit #5: Investigation 2 Investigation Unit #6: Investigation 2 Sessions 3.1, 3.3, 3.4, 3.6 Investigation 4	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigations Unit #1: Sessions 2.2, 2.4 Investigation Unit #3: 3.5 Investigation Unit #6: Sessions 3.2, 3.5	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigation Unit #3: Sessions 2.1, 2.2, 2.3, 2.6, 2.7 Investigation Unit #6: Investigation 1 Investigation Unit #9: Investigation 4	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigation Unit #9: Investigations 1, 2, 3	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigations Unit #2: All investigations	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigations Unit #7: All Investigations	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigation Unit #8: Investigations 1, 2, & 4	Kathy Richardson Number Sense Materials Marilyn Burns Materials Teacher Created/Collected Materials Investigation Unit #8: Investigation 3
Standards Number Sense, Properties, and Operations		**Standard 1: Number Sense, Properties and Operations** **Area 1.1: Whole Numbers** 1.1.2: Read and write numbers from 0-1,000 1.1.3: Read number words for zero to one thousand 1.1.4: Writes number words 0-20 1.1.5: Identify	**Standard 1: Number Sense, Properties and Operations** **Area 1.1: Whole Numbers** 1.1.2: Read and write numbers from 0-1,000 1.1.3: Read number words for zero to one thousand 1.1.4: Writes number words 0-20 1.1.5: Identify place value in three	**Standard 1: Number Sense, Properties and Operations** **Area 1.1: Whole Numbers** 1.1.2: Read and write numbers from 0-1,000 1.1.3: Read number words for zero to one thousand 1.1.4: Writes number words 0-20 1.1.5: Identify	**Standard 5: Measurement** **Area 5.1: Time** 5.1.1: Tells time to the nearest fifteen minutes using analog clocks 5.1.2: Compare and order various times (i.e. use a classroom schedule) 5.1.3: Uses	**Standard 5: Measurement** **Area 5.2: Estimating and Measuring** 5.2.1: Estimate and measure the length of objects to the nearest inch and centimeter. 5.2.3: Estimate and weigh an object on a balance with pounds	**Standard 6: Reasoning and Problem Solving** **Area 6.2: Finding and Communication Solutions** 6.2.1: Use estimation to verify the reasonableness of calculated results 6.2.2: Apply strategies and results from simpler	**Standard 1: Number Sense, Properties and Operations** **Area 1.3: Decimals, Money and Fractions** 1.3.1 Demonstrate the meanings of fractions: halves, thirds, and fourths of sets and wholes using concrete materials	**Standard 1: Number Sense, Properties and Operations** **Area 1.2 Computation** 1.2.1: Calculate addition of 2 digit numbers with and without regrouping. 1.2.2: Calculate subtraction of 2 digit numbers without regrouping 1.2.3: Use estimation to determine reasonableness	**Standard 1: Number Sense, Properties and Operations** **Area 1.2 Computation** 1.2.1: Calculate addition of 2 digit numbers with and without regrouping. 1.2.2: Calculate subtraction of 2 digit numbers without regrouping 1.2.3: Use

		place value in three digit numbers 1.1.6: Write three digit numbers in expanded form or other equivalent representations, e.g. 118 = 100 + 10 + 8 = 11 tens + 8 ones = 1 hundred + 0 tens + 18 ones 1.1.7: Use ordinal positions for 1^{st} through 10^{th} 1.1.10: Explain the commutative and associative properties of addition of whole numbers 1.1.11: Explain that subtraction of whole numbers is not commutative 1.1.12: Order and compare three digit numbers numbers 0 to 1,000 by using the symbols, <, >, =. 1.1.13: Identify numbers as odd or even **Area 1.2 Computation** 1.2.3: Use estimation to	digit numbers 1.1.6: Write three digit numbers in expanded form or other equivalent representations, e.g. 118 = 100 + 10 + 8 = 11 tens + 8 ones = 1 hundred + 0 tens + 18 ones 1.1.7: Use ordinal positions for 1^{st} through 10^{th} 1.1.10: Explain the commutative and associative properties of addition of whole numbers 1.1.11: Explain that subtraction of whole numbers is not commutative 1.1.12: Order and compare three digit numbers numbers 0 to 1,000 by using the symbols, <, >, =. 1.1.13: Identify numbers as odd or even **Area 1.2 Computation** 1.2.3: Use estimation to determine reasonableness of an answer 1.2.4: Demonstrate	place value in three digit numbers 1.1.6: Write three digit numbers in expanded form or other equivalent representations, e.g. 118 = 100 + 10 + 8 = 11 tens + 8 ones = 1 hundred + 0 tens + 18 ones 1.1.7: Use ordinal positions for 1^{st} through 10^{th} 1.1.10: Explain the commutative and associative properties of addition of whole numbers 1.1.11: Explain that subtraction of whole numbers is not commutative 1.1.12: Order and compare three digit numbers numbers 0 to 1,000 by using the symbols, <, >, =. 1.1.13: Identify numbers as odd or even **Area 1.2 Computation** 1.2.3: Use estimation to	AM and PM 5.1.4: Knows the number of hours in a day and months in a year **Standard 6: Reasoning and Problem Solving** **Area 6.2: Finding and Communication Solutions** 6.2.1: Use estimation to verify the reasonableness of calculated results 6.2.2: Apply strategies and results from simpler problems to more complex problems 6.2.3: Express solutions clearly and logically by using the appropriate mathematical terms and notation 6.2.4: Explain in clear, written language how the problem was solved 6.2.5: Indicate the relative advantages of exact and approximate	5.2.4: Measure temperature to the nearest 2 degrees F. 5.2.5: Knows the number of inches in a foot, feet in a yard 5.2.6: Selects the appropriate units of measurement for time, capacity, weight, and temperature 5.2.7: Compare and order objects according to the attributes of: length, capacity, temperature, and time. **Standard 6: Reasoning and Problem Solving** **Area 6.2: Finding and Communication Solutions** 6.2.1: Use estimation to verify the reasonableness of calculated results 6.2.2: Apply strategies and results from simpler problems to more complex	problems to more complex problems 6.2.3: Express 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		determine reasonableness of an answer 1.2.4: Demonstrate fluency with addition and subtraction facts to sums of twenty using tens-based strategies 1.2.5 Create stories and models, including linear and differences to illustrate addition and subtraction **<u>Standard 6: Reasoning and Problem Solving</u>** **Area 6.2: Finding and Communication Solutions** 6.2.1: Use estimation to verify the reasonableness of calculated results 6.2.2: Apply strategies and results from simpler problems to more complex problems 6.2.3: Express solutions clearly and logically by using the appropriate mathematical	fluency with addition and subtraction facts to sums of twenty using tens-based strategies 1.2.5 Create stories and models, including linear and differences to illustrate addition and subtraction **Area 1.3: Decimals, Money and Fractions** 1.3.3: Demonstrate equivalencies of coins, such as five nickels equals a quarter 1.3.4: Count coins up to $1.00 1.3.5: Apply addition and subtraction concepts to financial decision making **<u>Standard 6: Reasoning and Problem Solving</u>** **Area 6.2: Finding and Communication Solutions** 6.2.1: Use estimation to verify the reasonableness of calculated results	determine reasonableness of an answer 1.2.4: Demonstrate fluency with addition and subtraction facts to sums of twenty using tens-based strategies 1.2.5 Create stories and models, including linear and differences to illustrate addition and subtraction **Area 1.3: Decimals, Money and Fractions** 1.3.3: Demonstrate equivalencies of coins, such as five nickels equals a quarter 1.3.4: Count coins up to $1.00 1.3.5: Apply addition and subtraction concepts to financial decision making **<u>Standard 6: Reasoning and Problem Solving</u>** **Area 6.2: Finding and Communication**	solutions to problems and give answer to a specified degree of accuracy 6.2.5: Make precise calculations and check the validity of the results from the context of the problem	problems 6.2.3: Express solutions clearly and logically by using the appropriate mathematical terms and notation 6.2.4: Explain in clear, written language how the problem was solved 6.2.5: Indicate the relative advantages of exact and approximate solutions to problems and give answer to a specified degree of accuracy 6.2.5: Make precise calculations and check the validity of the results from the context of the problem		precise calculations and check the validity of the results from the context of the problem		and check the validity of the results from the context of the problem

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Patterns, Functions, and Algebraic Structures		**Standard 2: Patterns, Functions, and Algebraic Thinking** **Area 2.1: Patterns** 2.1.1: Reproduce, extend, create, and describe patterns using pictures, geometric shapes, or numbers. 2.1.2: Find missing elements of a pattern 2.1.4: Count by 2's to 50; 1's, 5's 10's to 100, and 100's to 1000. (moved from whole numbers)	**Standard 2: Patterns, Functions, and Algebraic Thinking** **Area 2.1: Patterns** 2.1.1: Reproduce, extend, create, and describe patterns using pictures, geometric shapes, or numbers. 2.1.2: Find missing elements of a pattern 2.1.4: Count by 2's to 50; 1's, 5's 10's to 100, and 100's to 1000. (moved from whole numbers)	**Standard 2: Patterns, Functions, and Algebraic Thinking** **Area 2.1: Patterns** 2.1.1: Reproduce, extend, create, and describe patterns using pictures, geometric shapes, or numbers. 2.1.2: Find missing elements of a pattern 2.1.4: Count by 2's to 50; 1's, 5's 10's to 100, and 100's to 1000. (moved from whole numbers)					**Standard 2: Patterns, Functions, and Algebraic Thinking** **Area 2.1: Patterns** 2.1.1: Reproduce, extend, create, and describe patterns using pictures, geometric shapes, or numbers. 2.1.2: Find missing elements of a pattern 2.1.4: Count by 2's to 50; 1's, 5's 10's to 100, and 100's to 1000. (moved from whole numbers)	**Standard 2: Patterns, Functions, and Algebraic Thinking** **Area 2.1: Patterns** 2.1.1: Reproduce, extend, create, and describe patterns using pictures, geometric shapes, or numbers. 2.1.2: Find missing elements of a pattern 2.1.4: Count by 2's to 50; 1's, 5's 10's to 100, and 100's to 1000. (moved from whole numbers)
Data, Analysis, Statistics, and Probability	**Standard 3: Data, Analysis, Statistics, Probability** ***Area 3.1: Charts and Graphs*** 3.1.1: Conduct a survey to collect data 3.1.2: Gather and display data using tallies, bar graphs, pictographs,							**Standard 3: Data, Analysis, Statistics, Probability** ***Area 3.3: Probability*** 3.3.1: Spins a spinner, flips a coin, or flips a two-colored counter to generate and record data 3.3.3: Apply concepts of likely of not		

	or tables 3.1.3: Using various displays of data (picture graphs and bar graphs), interpret the data and draw conclusions. ***Area 3.2: Data*** 3.2.1: Conduct a survey to gather data 3.2.2: Using a bar graph, interpret data using terms such as smallest, most often, middle, median, and range 3.2.3: Compare individual data to group data.							likely based on data collection .		
Shape, Dimension, & Geometric Relationships					**Standard 4: Shape, Dimensions, and Relationships** ***Area 4.1: Shapes, Angles, Lines, and Curves*** 4.1.1: Identify congruent figures from a selection of figures 4.1.4: Identify the lines of	**Standard 4: Shape, Dimensions, and Relationships** ***Area 4.1: Shapes, Angles, Lines, and Curves*** 4.1.1: Identify congruent figures from a selection of figures 4.1.4: Identify the lines of	**Standard 4: Shape, Dimensions, and Relationships** ***Area 4.1: Shapes, Angles, Lines, and Curves*** 4.1.1: Identify congruent figures from a selection of figures 4.1.4: Identify the lines of			

					symmetry of squares and rectangles and other common shapes 4.1.5: Describe the attributes of circles, triangles, squares and rectangles	symmetry of squares and rectangles and other common shapes 4.1.5: Describe the attributes of circles, triangles, squares and rectangles .	symmetry of squares and rectangles and other common shapes 4.1.5: Describe the attributes of circles, triangles, squares and rectangles .			
Process Skills: Critical Thinking and Reasoning, Collaboration, Invention, Self-Direction, Information Literacy	Invention: Collecting and representing data Critical Thinking & Reasoning: Analysis of data & forming conclusions	Invention: Making up own problems for place value Critical Thinking & Reasoning: Applying place value to story problems Self Direction: Independent differentiated math groups	Invention: Making up own problems for place value Critical Thinking & Reasoning: Applying place value to story problems Self Direction: Independent differentiated math groups Collaboration: Working in groups to determine the value of a set of coins Critical Thinking & Reasoning: Determining amount of change, making decisions about what you want to buy based on a budget	Collaboration: Working in groups to determine the value of a set of coins Critical Thinking & Reasoning: Determining amount of change, making decisions about what you want to buy based on a budget	Self Direction: Ability to understand the schedule/time, understanding how long 1 minute, 1 hour, etc. or how long things take	Critical Thinking & Reasoning: Coming to a conclusion about length of certain objects, comparing objects based on measurement. Collaboration: Measurement Fair	Invention: Invent symmetrical shapes Critical Thinking: Making shapes congruent, The Last Block Collaboration: Guess my rule	Critical Thinking & Reasoning: Dividing shapes or groups equally, Rectangle riddles Self Direction: Is it fair?	Invention: Inventing a strategy to solve problems	Invention: Inventing a strategy to solve problems
Resources	Investigations, Kathy Richardson, Marilyn Burns, Teacher Created/Collected Supplemental Materials									

Assessments	Kathy Richardson #6	Kathy Richardson #5	BOE Investigation #1	Money Quiz	Number Sense Assessment Kathy Richardson #7 Problem Solving Pre-Assessment with Rubric	Time & Measurement Assessments	Problem Solving Assessment with Rubric	BOE Investigation #2	BOE Investigation #3	End of Year Assessment Kathy Richardson #8
Vocabulary	Bar graph, line plot, picture graph, pictograph, data, survey, represent, questionnaire, labels, most, least, more than, less than	Hundreds chart, doubles, combinations of ten, place value, ones, tens, hundreds, thousands, addition and subtraction terms	Hundreds chart, doubles, combinations of ten, place value, ones, tens, hundreds, thousands, addition and subtraction terms Quarter, nickel, dime, penny, dollar, coins, pattern, money	Hundreds chart, doubles, combinations of ten, place value, ones, tens, hundreds, thousands, addition and subtraction terms Quarter, nickel, dime, penny, dollar, coins, patterns, money	Pattern, story problems, combining, separating, mathematical thinking, strategy, number sentence Hour, minute, digital, analogue, am, pm, half hour, hour, quarter hour, day, month, week, year, clockwise, counter clockwise, second	Pattern, story problems, combining, separating, mathematical thinking, strategy, number sentence Foot, yard, meter, centimeter, inch, perimeter, length, standard units, non-standard units, weight, pound, estimate, measure, ruler, compare, temperature, degrees, Fahrenheit	Pattern, story problems, combining, separating, mathematical thinking, strategy, number sentence Congruent, symmetry, two-dimensional, three-dimensional, cubes, sphere, cylinder, cone, pyramid, attributes, hexagon, pentagon, triangle, square, octagon, right angle, not-right angle, prisms, rhombus, parallelogram, polygon, quadrilateral, trapezoid, diameter, perimeter, predict, estimate, sort, arrays.	Fraction, half, third, fourth, whole, part, set	Combining, comparing, separating, digit, expanded form, difference, sum, total, least, diagram, number sentence, ones, tens, hundreds, place value, label.	Combining, comparing, separating, digit, expanded form, difference, sum, total, least, diagram, number sentence, ones, tens, hundreds, place value, label.