

**2nd Grade  
Math Pacing Guide (2010-2011)**

Timeline	Topics	Indicators	Benchmarks	Aligned Instructional Resources	Assessments
8/18/10 to 9/28/10  (29 Days)	<p align="center"><b>Counting and Quantity</b></p> <p>* Developing strategies for accurately counting a set of objects by ones and groups * Developing an understanding of the magnitude and sequence of numbers up to 100</p>	N1. Use place value concepts to represent, compare and order whole numbers using physical models, numerals and words, with ones, tens and hundreds. For example: a. Recognize 10 can mean “10 ones” or a single entity (1 ten) through physical models and trading games. b. Read and write 3-digit numerals (e.g., 243 as two hundred forty three, 24 tens and 3 ones, or 2 hundreds and 43 ones, etc.) and construct models to represent each.	NA. Use place value concepts to represent whole numbers using numerals, words and physical models. NB. Recognize, classify, compare and order whole numbers.	Investigations Unit 1 <i>Counting, Coins and Combinations</i>	End-of-Unit (Common Assessment)
		N4. Represent and write the value of money using the ¢ sign and in decimal form when using the \$ sign.	ND. Determine the value of a collection of coins and dollar bills.		
	<p align="center"><b>Whole Number Operations</b></p> <p>* Making sense of and developing strategies to solve addition and subtraction problems with totals up to 45</p>	N6. Model, represent and explain subtraction as comparison, take-away and part-to-whole; e.g., solve missing addend problems by counting up or subtracting, such as “I had six baseball cards, my sister gave me more, and I now have ten. How many did she give me?” can be represented as $6 + ? = 10$ or $10 - 6 = ?$ .	NH. Model, represent and explain subtraction as comparison, take-away and part-to-whole.		
	<p align="center"><b>Computational Fluency</b></p> <p>* Knowing addition combinations up to <math>10 + 10</math></p>	N7. Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting.	NI. Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting.		
	<p align="center"><b>Whole Number Operations</b></p> <p>* Using manipulatives, drawings, tools, and notation to show strategies and solutions</p>	N9. Model and use the commutative property for addition.	NM. Add and subtract two digit numbers with and without regrouping.		
	N12. Demonstrate multiple strategies for adding and subtracting 2- or 3-digit whole numbers, such as: a. compatible numbers; b. compensatory numbers; c. informal use of commutative and associative properties of addition.				
	N10. Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions; e.g., $9 + 9 = 18$ , $18 - 9 = 9$ .	NK. Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions.			
		N3. Count money and make change using coins and a dollar bill.	NE. Make change using coins for values up to one dollar.		
9/29/10 to 10/27/10  (21 Days)	<p align="center"><b>Features of Shape</b></p> <p>* Composing and decomposing 2- and 3-dimensional shapes * Describing, identifying, comparing, and sorting 2- and 3-dimensional shapes</p>	N7. Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting.	NI. Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting.	Investigations Unit 2 <i>Shapes, Blocks and Symmetry</i>	Oct. 4 to Oct. 8 Math Benchmark  End-of-Unit (Common Assessment)
		G1. Identify, describe, compare and sort three-dimensional objects (i.e., cubes, spheres, prisms, cones, cylinders and pyramids) according to the shape of the faces or the numbers of faces, edges or vertices.	GA. Describe and create plane figures: circle, rectangle, square, triangle, hexagon, trapezoid, parallelogram and rhombus, and identify them in the environment.  GB. Describe solid objects: cube, rectangular prism, sphere, cylinder, cone and pyramid, and identify them in the environment.		
	G2. Predict what new shapes will be formed by combining or cutting apart existing shapes.	GC. Sort and compare two-dimensional figures and three-dimensional objects according to their characteristics and properties.  GA. Describe and create plane figures: circle, rectangle, square, triangle, hexagon, trapezoid, parallelogram and rhombus, and identify them in the environment.			
	G3. Recognize two-dimensional shapes and three-dimensional objects from different positions.	GE. Recognize two- and three-dimensional objects from different positions.			
	<p align="center"><b>Area Measurements</b></p> <p>* Visualizing the structures of arrays</p>				
<p align="center"><b>Computational Fluency</b></p>					

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	* Knowing addition combinations to 10 + 10	G4. Identify and determine whether two-dimensional shapes are congruent (same shape and size) or similar (same shape different size) by copying or using superposition (lay one thing on top of another).  G5. Create and identify two-dimensional figures with line symmetry; e.g., what letter shapes, logos, polygons are symmetrical?  P5. Understand equivalence and extend the concept to situations involving symbols; e.g., $4 + 5 = 9$ and $9 = 4 + 5$ , and $4 + 5 = 3 + 6 = \Delta + \square \dots$	GD. Identify, explain and model (superposition, copying) the concept of shapes being congruent and similar.  GA. Describe and create plane figures: circle, rectangle, square, triangle, hexagon, trapezoid, parallelogram and rhombus, and identify them in the environment.  PE. Solve open sentences and explain strategies.		
10/28/10 to 12/9/10 (28 Days)		N1. Use place value concepts to represent, compare and order whole numbers using physical models, numerals and words, with ones, tens and hundreds. For example: a. Recognize 10 can mean "10 ones" or a single entity (1 ten) through physical models and trading games. b. Read and write 3-digit numerals (e.g., 243 as two hundred forty three, 24 tens and 3 ones, or 2 hundreds and 43 ones, etc.) and construct models to represent each.  N2. Recognize and classify numbers as even or odd.  N3. Count money and make change using coins and a dollar bill.	NA. Use place value concepts to represent whole numbers using numerals, words and physical models. NB. Recognize, classify, compare and order whole numbers.  NB. Recognize, classify, compare and order whole numbers.  NE. Make change using coins for values up to one dollar.	Investigations Unit 3 <i>Stickers, Number Strings, and Story Problems</i>	End-of-Unit (Common Assessment)
10/28/10 to 12/9/10 (Con't)	* Making sense of & developing strategies to solve addition & subtraction problems.  * Understanding properties of + and -  * Counting by equal groups  * Dev. strategies for accurately counting a set of objects (by ones and by groups)  * Understand the equivalence of one group and the discrete units that comprise it  * Use manipulatives, drawings, tools, and notation to show strategies and solutions  * Know addition combinations to 10 + 10	N4. Represent and write the value of money using the ¢ sign and in decimal form when using the \$ sign.  N6. Model, represent and explain subtraction as comparison, take-away and part-to-whole; e.g., solve missing addend problems by counting up or subtracting, such as "I had six baseball cards, my sister gave me more, and I now have ten. How many did she give me?" can be represented as $6 + ? = 10$ or $10 - 6 = ?$ .  N7. Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting.  N8. Model, represent and explain division as sharing equally and repeated subtraction.  N9. Model and use the commutative property for addition.  N12. Demonstrate multiple strategies for adding and subtracting 2- or 3-digit whole numbers, such as: a. compatible numbers; b. compensatory numbers; c. informal use of commutative and associative properties of addition.  N10. Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions; e.g., $9 + 9 = 18$ , $18 - 9 = 9$ .  N11. Add and subtract multiples of 10  P1. Extend simple number patterns (both repeating and growing patterns), and create similar patterns using different objects, such as using physical materials or shapes to represent numerical patterns.  P2. Use patterns to make generalizations and predictions; e.g., determine a missing element in a pattern.	ND. Determine the value of a collection of coins and dollar bills.  NH. Model, represent and explain subtraction as comparison, take-away and part-to-whole.  NI. Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting.  NJ. Model, represent and explain division as sharing equally, repeated subtraction and rectangular arrays.  NM. Add and subtract two digit numbers with and without regrouping.  NK. Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions.  NL. Demonstrate fluency in adding and subtracting multiples of 10, and recognize combinations that make 10.  PB. Extend sequences of sounds and shapes or simple number patterns, and create and record similar patterns.  PC. Create and extend patterns, and describe the rule in words.	Investigations Unit 3 <i>Stickers, Number Strings, and Story Problems</i>  (Con't.)	Dec. 6 to Dec. 10 Math Benchmark  End-of-Unit (Common Assessment)

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		P3. Create new patterns with consistent rules or plans, and describe the rule or general plan of existing patterns.	PC. Create and extend patterns, and describe the rule in words.		
		P4. Use objects, pictures, numbers and other symbols to represent a problem situation.	PD. Model problem situations, using objects, pictures, numbers and other symbols.		
12/10/10 to 1/25/11  (22 Days)	<p align="center"><b>Linear Measurement</b></p> <p>* Understanding length * Using linear units * Measuring with standard units</p> <p align="center"><b>Time</b></p> <p>*Representing time and calculating duration</p>	<p>M1. Identify and select appropriate units of measure for: a. length – centimeters, meters, inches, feet or yards; b. volume (capacity) – liters, cups, pints or quarts; c. weight – grams, ounces or pounds; d. time – hours, half-hours, quarter-hours or minutes and time designations, a.m. or p.m.</p> <p>M2. Establish personal or common referents for units of measure to make estimates and comparisons; e.g., the width of a finger is a centimeter, a large bottle of soda pop is 2 liters, a small paper clip weighs about one gram.</p> <p>M3. Describe and compare the relationships among units of measure, such as centimeters and meters; inches, feet and yards; cups, pints and quarts; ounces and pounds; and hours, half-hours, and quarter-hours; e.g., how many inches in a foot?</p> <p>M7. Make and test predictions about measurements, using different units to measure the same length or volume.</p> <p>M5. Estimate and measure the length and weight of common objects, using metric and U.S. customary units, accurate to the nearest unit.</p> <p>M6. Select and use appropriate measurement tools; e.g., a ruler to draw a segment 3 inches long, a measuring cup to place 2 cups of rice in a bowl, a scale to weigh 50 grams of candy.</p>	<p>MB. Select appropriate units for length, weight, volume (capacity) and time, using: • objects; i.e., non-standard units; • U.S. customary units: inch, foot, yard, ounce, pound, cup, quart, gallon, minute, hour, day, week and year;• metric units: centimeter, meter, gram and liter.</p> <p>MC. Develop common referents for units of measure for length, weight, volume (capacity) and time to make comparisons and estimates.</p> <p>ME. Recognize that using different units of measurement will yield different numbers for the same measurement.</p> <p>MD. Apply measurement techniques to measure length, weight and volume (capacity).</p>	<p>Investigations Unit 9 <i>Measuring Length and Time</i></p>	<p>End-of-Unit (Common Assessment)</p>
	<p align="center"><b>Whole Number Operations</b></p> <p>* Making sense of and developing strategies to solve addition and subtraction problems with totals up to 100. * Using manipulatives, drawings, tools, and notation to show strategies and solutions</p>	<p>N1. Use place value concepts to represent, compare and order whole numbers using physical models, numerals and words, with ones, tens and hundreds. For example: a. Recognize 10 can mean “10 ones” or a single entity (1 ten) through physical models and trading games. b. Read and write 3-digit numerals (e.g., 243 as two hundred forty three, 24 tens and 3 ones, or 2 hundreds and 43 ones, etc.) and construct models to represent each.</p> <p>N3. Count money and make change using coins and a dollar bill.</p> <p>N4. Represent and write the value of money using the ¢ sign and in decimal form when using the \$ sign.</p> <p>N6. Model, represent and explain subtraction as comparison, take-away and part-to-whole; e.g., solve missing addend problems by counting up or subtracting, such as “I had six baseball cards, my sister gave me more, and I now have ten. How many did she give me?” can be represented as <math>6 + ? = 10</math> or <math>10 - 6 = ?</math>.</p> <p>N7. Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting.</p>	<p>NA. Use place value concepts to represent whole numbers using numerals, words and physical models. NB. Recognize, classify, compare and order whole numbers.</p> <p>NE. Make change using coins for values up to one dollar.</p> <p>ND. Determine the value of a collection of coins and dollar bills.</p> <p>NH. Model, represent and explain subtraction as comparison, take-away and part-to-whole.</p> <p>NI. Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting.</p>		

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1/26/11 to 2/28/11  (21 Days)	<p align="center"><b>Counting and Quantity</b></p> <p>* Developing an understanding of the magnitude and sequence of numbers up to 100 * Counting by equal groups</p> <p align="center"><b>Base-Ten Number System</b></p> <p>* Understanding the equivalence of one group and the discrete units that comprise it</p>	N10. Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions; e.g., $9 + 9 = 18$ , $18 - 9 = 9$ .	NK. Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions.	Investigations Unit 6 <i>How Many Tens? How Many Ones?</i>	End-of-Unit (Common Assessment)
		N11. Add and subtract multiples of 10	NL. Demonstrate fluency in adding and subtracting multiples of 10, and recognize combinations that make 10.		
		N12. Demonstrate multiple strategies for adding and subtracting 2- or 3-digit whole numbers, such as: a. compatible numbers; b. compensatory numbers; c. informal use of commutative and associative properties of addition.	NM. Add and subtract two digit numbers with and without regrouping.		
		P1. Extend simple number patterns (both repeating and growing patterns), and create similar patterns using different objects, such as using physical materials or shapes to represent numerical patterns.	PB. Extend sequences of sounds and shapes or simple number patterns, and create and record similar patterns.		
		P2. Use patterns to make generalizations and predictions; e.g., determine a missing element in a pattern.	PC. Create and extend patterns, and describe the rule in words.		
		P3. Create new patterns with consistent rules or plans, and describe the rule or general plan of existing patterns.			
		P4. Use objects, pictures, numbers and other symbols to represent a problem situation.	PD. Model problem situations, using objects, pictures, numbers and other symbols.		
		P5. Understand equivalence and extend the concept to situations involving symbols; e.g., $4 + 5 = 9$ and $9 = 4 + 5$ , and $4 + 5 = 3 + 6 = \Delta + \square \dots$	PE. Solve open sentences and explain strategies.		
6. Use symbols to represent unknown quantities and identify values for symbols in an expression or equation using addition and subtraction; e.g., $\Delta + \square = 10$ , $\Delta - 2 = 4$ .	PF. Represent an unknown quantity as a variable using a symbol, such as a circle, triangle, or square.				
3/1/11 to 3/15/11  (11 Days)	<p align="center"><b>Rational Numbers</b></p> <p>* Understanding fractions as equal parts of a whole * Understanding fractions as equal parts of a group * Using terms and notations</p>	N5. Represent fractions (halves, thirds, fourths, sixths and eighths), using words, numerals and physical models. For example: a. Recognize that a fractional part can mean different amounts depending on the original quantity. b. Recognize that a fractional part of a rectangle does not have to be shaded with contiguous parts. c. Identify and illustrate parts of a whole and parts of sets of objects. d. Compare and order physical models of halves, thirds and fourths in relation to 0 and 1.	NC. Represent commonly used fractions using words and physical models.	Investigations Unit 7 <i>Parts of a Whole, Parts of a Group</i>	Mar. 1 to Mar. 4 Math Benchmark  End-of-Unit (Common Assessment)
		N8. Model, represent and explain division as sharing equally and repeated subtraction.	NJ. Model, represent and explain division as sharing equally, repeated subtraction and rectangular arrays.		
		N1. Use place value concepts to represent, compare and order whole numbers using physical models, numerals and words, with ones, tens and hundreds. For example: a. Recognize 10 can mean "10 ones" or a single entity (1 ten) through physical models and trading games. b. Read and write 3-digit numerals (e.g., 243 as two hundred forty three, 24 tens and 3 ones, or 2 hundreds and 43 ones, etc.) and construct models to represent each.	NA. Use place value concepts to represent whole numbers using numerals, words and physical models. NB. Recognize, classify, compare and order whole numbers.		

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3/16/11 to 4/14/11 (17 Days)	<p>making sense of and developing strategies to solve addition and subtraction problems with totals up to 100. * Using manipulatives, drawings, tools, and notation to show strategies and solutions</p> <p align="center"><b>Computational Fluency</b> * Knowing addition combinations to <math>10 + 10</math></p>	<p>N2. Recognize and classify numbers as even or odd.</p> <p>N6. Model, represent and explain subtraction as comparison, take-away and part-to-whole; e.g., solve missing addend problems by counting up or subtracting, such as “I had six baseball cards, my sister gave me more, and I now have ten. How many did she give me?” can be represented as <math>6 + ? = 10</math> or <math>10 - 6 = ?</math>.</p> <p>N8. Model, represent and explain division as sharing equally and repeated subtraction.</p> <p>N10. Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions; e.g., <math>9 + 9 = 18</math>, <math>18 - 9 = 9</math>.</p> <p>N11. Add and subtract multiples of 10</p> <p>N12. Demonstrate multiple strategies for adding and subtracting 2- or 3-digit whole numbers, such as: a. compatible numbers; b. compensatory numbers; c. informal use of commutative and associative properties of addition.</p>	<p>NB. Recognize, classify, compare and order whole numbers.</p> <p>NH. Model, represent and explain subtraction as comparison, take-away and part-to-whole.</p> <p>NJ. Model, represent and explain division as sharing equally, repeated subtraction and rectangular arrays.</p> <p>NK. Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions.</p> <p>NL. Demonstrate fluency in adding and subtracting multiples of 10, and recognize combinations that make 10.</p> <p>NM. Add and subtract two digit numbers with and without regrouping.</p>	<p>Investigations Unit 8 <i>Partners, Teams, and Paper Clips</i></p>	<p>End-of-Unit (Common Assessment)</p>
4/15/11 to 5/11/11 (17 Days)	<p align="center"><b>Data Analysis</b> * Sorting and classifying data * Representing data * Describing data * Designing and carrying out a data investigation</p> <p align="center"><b>Computational Fluency</b> * Knowing addition combinations to <math>10 + 10</math></p>	<p>D1. Pose questions, use observations, interviews and surveys to collect data, and organize data in charts, picture graphs and bar graphs.</p> <p>D6. Recognize that data may vary from one population to another; e.g., favorite TV shows of students and of parents.</p> <p>D1. Pose questions, use observations, interviews and surveys to collect data, and organize data in charts, picture graphs and bar graphs.</p> <p>D4. Write a few sentences to describe and compare categories of data represented in a chart or graph, and make statements about the data as a whole.</p> <p>D2. Read, interpret and make comparisons and predictions from data represented in charts, line plots, picture graphs and bar graphs.</p> <p>D3. Read and construct simple timelines to sequence events.</p> <p>D5. Identify untrue or inappropriate statements about a given set of data.</p>	<p>DA. Pose questions and gather data about everyday situations and familiar objects.</p> <p>DB. Sort and classify objects by attributes, and organize data into categories in a simple table or chart.</p> <p>DC. Represent data using objects, picture graphs and bar graphs.</p>	<p>Investigations Unit 4 <i>Pockets, Teeth and Favorite Things?</i></p>	<p>End-of-Unit (Common Assessment)</p>
5/12/11 to 5/26/11 (11 Days)	<p align="center"><b>Linear Relationships</b> * Describing and representing ratios</p> <p align="center"><b>Using Tables and Graphs</b> * Using tables to represent change</p> <p align="center"><b>Number Sequences</b> * Constructing, describing, and extending number sequences with constraint increments generated by various contexts</p>	<p>P1. Extend simple number patterns (both repeating and growing patterns), and create similar patterns using different objects, such as using physical materials or shapes to represent numerical patterns.</p> <p>P2. Use patterns to make generalizations and predictions; e.g., determine a missing element in a pattern.</p> <p>P3. Create new patterns with consistent rules or plans, and describe the rule or general plan of existing patterns.</p> <p>P7. Describe qualitative and quantitative changes, especially those involving addition and subtraction; e.g., a student growing taller versus a student growing two inches in one year.</p>	<p>PB. Extend sequences of sounds and shapes or simple number patterns, and create and record similar patterns.</p> <p>PC. Create and extend patterns, and describe the rule in words.</p> <p>PG. Describe and compare qualitative and quantitative changes.</p>	<p>Investigations Unit 5 <i>How Many Floors? How Many Rooms?</i></p>	<p>End-of-Unit (Common Assessment)</p>