

Danvers Public Schools
Pacing Guide 2009 – 2010
2nd Edition of Investigations in Number, Data, and Space
Grade 2

Unit Name	Essential Lessons	Mathematical Emphasis	Vocabulary	Assessments
Unit 1: Counting, Coins, and Combinations (Addition, Subtraction, and the Number System 1) Standards: 2.N.1 2.N.2 2.N.4 2.N.6 2.N.7 2.N.9 2.N.12 2.P.2 2.P.5 2.P.6 2.P.7 2.G.6	Investigation 1 Investigation 2 Investigation 3 Investigation 4 <u>Ten Minute Math</u> <ul style="list-style-type: none"> • What Time is It? • Today's Number • Quick Images 	<p>2.N.1 Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p>2.N.2 Identify and distinguish among multiple uses of numbers, including cardinal (to tell how many) and ordinal (to tell which one in an ordered list), and numbers as labels and as measurements.</p> <p>2.N.4 Compare whole numbers using terms and symbols, e.g., less than, equal to, greater than (<, =, >).</p> <p>2.N.6 Identify the value of all U.S. coins, and \$1, \$5, \$10, and \$20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to \$5. Use appropriate notation, e.g., 69¢, \$1.35.</p> <p>2.N.7 Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p>	Less than (<) Greater than (>) Addition Subtraction Equation Equal sign Fewer/fewest Pennies Dimes quarter nickel Odd Even Fact Addend Sum Difference Coin Bill Cent Dollar Skip count Number sentence Numeral Whole number Digit Place value Analog clock Digital clock O'clock	<ul style="list-style-type: none"> • Session 2.2: <i>Counting Pennies</i> • Session 2.8: <i>Enough for the Class?</i> • Session 4.8: <i>How Many Cars?</i> <p>Due October 23:</p> <ul style="list-style-type: none"> • Session 4.9: <i>End-of-unit assessment</i>

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		<p>2.N.9 Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p>2.N.12 Estimate, calculate, and solve problems involving addition and subtraction of two-digit numbers. Describe differences between estimates and actual calculations.</p> <p>2.P.2 Identify different patterns on the hundreds chart.</p> <p>2.P.5 Construct and solve open sentences that have variables, e.g., $\square + 7 = 10$.</p> <p>2.P.6 Write number sentences using +, -, <, =, and/or > to represent mathematical relationships in everyday situations.</p> <p>2.P.7 Describe functions related to trading, including coin trades and measurement trades, e.g., five pennies make one nickel or four cups make one quart.</p> <p>2.G.6 Predict the results of putting shapes together and taking them apart.</p>		
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<p>Unit 2: Shapes, Blocks, and Symmetry (2-D and 3-D Geometry)</p> <p>Standards: 2.G.1 2.G.2 2.G.3 2.G.4* 2.G.5 2.G.6 2.G.7 2.M.3</p>	<p>Investigation 1 Investigation 2 Investigation 3</p> <p>After Session 3.3 Activity Master 3</p> <p>Supplemental Activity Master 6 (Similar & Congruent)</p> <p>Supplemental Activity Master 7 (slides,flips,turns)</p> <p><u>Ten Minute Math</u></p> <ul style="list-style-type: none"> • Today's Number • How Many Pockets? • What Time is It? • Quick Images 	<p>2.G.1 Describe attributes and parts of two- and three-dimensional shapes, e.g., length of sides, and number of corners, edges, faces, and sides.</p> <p>2.G.2 Identify, describe, draw, and compare two-dimensional shapes, including both polygonal (up to six sides) and curved figures such as circles.</p> <p>2.G.3 Recognize congruent shapes.</p> <p>2.G.4 *Identify shapes that have been rotated (turned), reflected (flipped), translated (slid), and enlarged. Describe direction of translations, e.g., left, right, up, down.</p> <p>2.G.5 Identify symmetry in two-dimensional shapes.</p> <p>2.G.6 Predict the results of putting shapes together and taking them apart.</p>	<p>3- D shape 2-D shape Geometry Face Side Angle Corner (vertex) Edge Polygon Congruent Area Rectangular prism Quadrilateral Trapezoid Hexagon Parallelogram Rectangle Rhombus Triangle Symmetry Line of - symmetry Rotated -(turned) Reflected -(flipped) Translated -(slid) Enlarged</p>	<ul style="list-style-type: none"> • Session 2.1: <i>Sorting Shapes by Number of Sides</i> • Session 2.7: <i>Is It a Rectangle?</i> • Session 2.9: <i>Faces of a Geoblock</i> <p>Due November 23:</p> <ul style="list-style-type: none"> • Session 3.5: <i>End-of-unit assessment</i>

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		<p>2.G.7 Relate geometric ideas to numbers, e.g., seeing rows in an array as a model of repeated addition.</p>		
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		<p>2.M.3 Compare the length, weight, area, and volume of two or more objects by using direct comparison.</p>		
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<p>Unit 3: Stickers, Number Strings, and Story Problems (Addition, Subtraction, and the Number System 2)</p> <p>Standards: 2.N.1 2.N.5 2.N.6 2.N.8 2.N.9 2.N.12 2.P.2 2.P.4 2.P.5 2.P.6 2.P.7</p>	<p>Investigation 1</p> <p>Investigation 2</p> <p>Investigation 3</p> <p>Investigation 4</p> <p><u>Ten Minute Math</u></p> <ul style="list-style-type: none"> • Today's Number • How Many Pockets? • Quick Images • What Time Is It? 	<p>2.N.1 Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p>2.N.5 Identify odd and even numbers and determine whether a set of objects has an odd or even number of elements.</p> <p>2.N.6 Identify the value of all U.S. coins, and \$1, \$5, \$10, and \$20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to \$5. Use appropriate notation, e.g., 69¢, \$1.35.</p> <p>2.N.8 Understand and use the inverse relationship between addition and subtraction (e.g., $8 + 6 = 14$ is equivalent to $14 - 6 = 8$ and is also equivalent to $14 - 8 = 6$) to solve problems and check solutions.</p> <p>2.N.9 Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p>2.N.12 Estimate, calculate, and solve problems involving addition and subtraction of two-digit numbers. Describe differences between estimates and actual calculations.</p>	<p>Odd</p> <p>Even</p> <p>Addition</p> <p>Subtraction</p> <p>Fact</p> <p>Equation</p> <p>Sum</p> <p>Difference</p> <p>Pattern</p> <p>Coin</p> <p>Bill</p> <p>Cent</p> <p>Dollar</p> <p>Skip count</p> <p>Numeral</p> <p>Whole -number</p> <p>Digit</p> <p>Place value</p> <p>Ones place</p> <p>Tens place</p>	<ul style="list-style-type: none"> • Session 1.6: <i>Number Strings</i> • Session 2.7: <i>Story Problems</i> • Session 3.3: <i>Even or Odd?</i> <p>Due January 14:</p> <ul style="list-style-type: none"> • Session 4.6: <i>End-of-unit assessment</i>

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2.P.2 Identify different patterns on the hundreds chart.

2.P.4 Skip count by twos, fives, and tens up to at least 50, starting at any number.

2.P.5 Construct and solve open sentences that have variables, e.g., $\square + 7 = 10$.

2.P.6 Write number sentences using +, -, <, =, and/or > to represent mathematical relationships in everyday situations.

2.P.7 Describe functions related to trading, including coin trades and measurement trades, e.g., five pennies make one nickel or four cups make one quart.

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<p>Unit 4: Pockets, Teeth, and Favorite Things (Data Analysis)</p> <p>Standards: 2.D.1 2.D.2 2.D.3 2.D.4*</p>	<p>Investigation 1</p> <p>Investigation 2</p> <p>Supplemental Activity Master 16 (Probability)</p> <p>Supplemental Activity Master 24 (Probab. Experiments)</p> <p><u>Ten Minute Math</u></p> <ul style="list-style-type: none"> • Quick Images • Today's Number • What Time Is It? 	<p>2.D.1 Use interviews, surveys, and observations to gather data about themselves and their surroundings.</p> <p>2.D.2 Organize, classify, represent, and interpret data using tallies, charts, tables, bar graphs, pictographs, and Venn diagrams; interpret the representations.</p> <p>2.D.3 Formulate inferences (draw conclusions) and make educated guesses (conj Identify and distinguish among multiple uses of numbers, including cardinal (to tell how many) and ordinal (to tell which one in an ordered list), and numbers as labels and as measurements.</p> <p>2.D.4 *Decide which outcomes of experiments are most likely.</p>	<p>Organize Classify Representation Interpret Data Survey Attribute Category Results Probability Certain Likely More likely Less likely Equally likely Experiment Results Unlikely Impossible Venn diagram Rule Line plot Range</p>	<ul style="list-style-type: none"> • Session 1.7: <i>Favorite Foods and Plus 10 Combinations</i> <p>Due February 8</p> <p>Session 2.8: <i>End-of-unit assessment</i></p>

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Unit Name	Essential Lessons	Mathematical Emphasis	Vocabulary	Assessments
<p>Unit 5: How Many Floors? How Many Rooms? (Patterns, Functions, and Change)</p> <p>Standards: 2.N.5 2.P.1 2.P.3 2.P.4 2.M.2 2.D.3</p>	<p>Investigation 1</p> <p>Investigation 2</p> <p><u>Ten Minute Math</u></p> <ul style="list-style-type: none"> • What Time Is It? • Quick Images • Today’s Number • How Many Pockets? 	<p>2.N.5 Identify odd and even numbers and determine whether a set of objects has an odd or even number of elements.</p> <p>2.P.1 Identify, reproduce, describe, extend, and create simple rhythmic, shape, size, number, color, and letter repeating patterns.</p> <p>2.P.3 Describe and create addition and subtraction number patterns, e.g., 1, 4, 7, 10...; or 25, 23, 21....</p> <p>2.P.4 Skip count by twos, fives, and tens up to at least 50, starting at any number.</p> <p>2.M.2 Tell time at quarter-hour intervals on analog and digital clocks using a.m. and p.m.</p> <p>2.D.3 Formulate inferences (draw conclusions) and make educated guesses (conjectures) about a situation based on information gained from data.</p>	<p>Column Even Floor plan Hexagon Multiple Odd Repeating - pattern Representation Rhombus Row Position Sequence Table Trapezoid Triangle Unit Element of</p>	<ul style="list-style-type: none"> • Session 1.4: <i>Understanding Tables</i> <p>Due March 4:</p> <ul style="list-style-type: none"> • Session 2.5: <i>End-of-unit assessment</i>

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<p>Unit 6: How Many Tens? How Many Ones? (Addition, Subtraction, and the Number System 3)</p> <p>Standards: 2.N.1 2.N.2 2.N.6 2.N.7 2.N.12 2.P.2 2.P.4 2.P.6 2.P.7</p>	<p>Investigation 1</p> <p>Investigation 2</p> <p>Investigation 3</p> <p>Investigation 4</p> <p>Supplemental Activity Master 20 (Ordinal Nos.)</p> <p><u>Ten Minute Math</u></p> <ul style="list-style-type: none"> • Today's Number • How Many Pockets? • What Time Is It? • Quick Images 	<p>2.N.1 Name and write (in numerals) whole numbers to 1000, identify the place values of the digits, and order the numbers.</p> <p>2.N.2 Identify and distinguish among multiple uses of numbers, including cardinal (to tell how many) and ordinal (to tell which one in an ordered list), and numbers as labels and as measurements</p> <p>2.N.6 Identify the value of all U.S. coins, and \$1, \$5, \$10, and \$20 bills. Find the value of a collection of coins and dollar bills and different ways to represent an amount of money up to \$5. Use appropriate notation, e.g., 69¢, \$1.35.</p> <p>2.N.7 Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more); subtraction as comparison (how much less, how much more), equalizing (how many more are needed to make these equal), and separation (how much remaining).</p>	<p>100 chart Array Cents Dime dollar Multiple Nickel Ones Penny Skip counting Tens Hundreds Ordinal nos. First, second, thirty-fifth, etc.</p>	<ul style="list-style-type: none"> • Session 2.6: <i>How Many More?</i> • Session 4.3: <i>Skip Counting Strips</i> <p>Due April 5:</p> <ul style="list-style-type: none"> • Session 4.4: <i>End-of-unit assessment</i>

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2.N.12 Estimate, calculate, and solve problems involving addition and subtraction of two-digit numbers. Describe differences between estimates and actual calculations.

2.P.2 Identify different patterns on the hundreds chart.

2.P.4 Skip count by twos, fives, and tens up to at least 50, starting at any number.

2.P.6 Write number sentences using +, −, <, =, and/or > to represent mathematical relationships in everyday situations.

2.P.7 Describe functions related to trading, including coin trades and measurement trades, e.g., five pennies make one nickel or four cups make one quart.

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<p>Unit 7: Parts of the Whole, Parts of a Group (Fractions)</p> <p>Standards: 2.N.3</p> <p>During this chapter look for opportunities to represent common simple fractions on a number line. Some teachers effectively use string and clothespins to “pin” $\frac{1}{2}$, $\frac{1}{4}$ in their appropriate places between 0 and 1.</p> <p>A ruler can be used as a model for fractions on the number line.</p>	<p>Investigation 1</p> <p>Investigation 2</p> <p><u>Ten Minute Math</u></p> <ul style="list-style-type: none"> • Quick Images • Today’s Number • What Time Is It? • How Many Pockets? 	<p>2.N.3 Identify and represent common fractions ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$) as parts of wholes, parts of groups, and numbers on the number line.</p>	<p>Equal Fourths Fraction Mixed no. Half One and a half One fourth One half One third Third Two and a half Two thirds Whole Part</p>	<p>Due April 28:</p> <ul style="list-style-type: none"> • Session 2.6: <i>End-of-unit assessment</i>

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<p>Unit 8: Partners, Teams, and Paper Clips (Addition, Subtraction, and the Number System 4)</p> <p>Standards: 2.N.5 2.N.7 2.N.8 2.N.9 2.N.12 2.N.10* 2.N.11*</p>	<p>Investigation 1 Investigation 2 Investigation 3 Investigation 4</p> <p>Supplemental Activity Master 34 (+ pgs) 4-digit add</p> <p>Supplemental Activity Master 34 (+ pgs) 4-digit subtract</p> <p><u>Ten Minute Math</u></p> <ul style="list-style-type: none"> • Quick Images • Today’s Number • How Many Pockets? • What Time Is It? 	<p>2.N.5 Identify odd and even numbers and determine whether a set of objects has an odd or even number of elements.</p> <p>2.N.7 Demonstrate an understanding of various meanings of addition and subtraction, e.g., addition as combination (plus, combined with, more);</p> <p>2.N.8 Understand and use the inverse relationship between addition and subtraction (e.g., $8 + 6 = 14$ is equivalent to $14 - 6 = 8$ and is also equivalent to $14 - 8 = 6$) to solve problems and check solutions.</p> <p>2.N.9 Know addition facts (addends to ten) and related subtraction facts, and use them to solve problems.</p> <p>2.N.12 Estimate, calculate, and solve problems involving addition and subtraction of two-digit numbers. Describe differences between estimates and actual calculations. (*The following standard needs to be incorporated into this unit, as students demonstrate an understanding of the concepts.) *2.N.10 Demonstrate the ability to add and subtract three-digit numbers accurately and efficiently.</p>	<p>Even Odd Sum Four-digit Three-digit Vertical Horizontal Diagonal Hundreds Thousands</p>	<ul style="list-style-type: none"> • Session 3.5: Paper Clips and Cherries <p>Due May 21:</p> <ul style="list-style-type: none"> • Session 4.5: <i>End-of-unit-assessment</i>

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<p>Unit 9: Measuring Length and Time (Measurement)</p> <p>Standards: 2.M.1 2.M.2 2.M.3 2.M.4 2.M.5 2.M.6</p> <p>Use the ruler as a model for fractions on the number line.</p>	<p>Investigation 1 Investigation 2 Investigation 3 Investigation 4 Classroom Routines What Time Is It?</p> <p>Supplemental Activity Master 49 (Ounces & Pounds)</p> <p>Supplemental Activity Master 52 (Volume)</p> <p>Ten Minute Math</p> <ul style="list-style-type: none"> • Quick Images • Today's Number • How Many Pockets? 	<p>2.M.1 Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. Identify dates using a calendar.</p> <p>2.M.2 Tell time at quarter-hour intervals on analog and digital clocks using a.m. and p.m.</p> <p>2.M.3 Compare the length, weight, area, and volume of two or more objects by using direct comparison.</p> <p>2.M.4 Measure and compare common objects using metric and English units of length measurement, e.g., centimeter, inch.</p> <p>2.M.5 Select and correctly use the appropriate measurement tools, e.g., ruler, balance scale, thermometer.</p> <p>2.M.6 Make and use estimates of measurement, including time, volume, weight, and area.</p>	<p>Accurately A.M. Benchmark Centimeter Duration Estimate Foot Half-hour Height Inch Interval Length Measure Measurement Meter Metric system Midnight Noon O'Clock Ounces P.M. Pounds Quarter hour Ruler Tape measure Unit Volume Width Yard Yardstick</p>	<ul style="list-style-type: none"> • Session 1.6: <i>A Measuring Disagreement</i> • Session 3.1: <i>The King's Foot</i> <p>Due June 23:</p> <ul style="list-style-type: none"> • Session 4.7: <i>End-of-unit assessment</i>