Amherst and Pelham Public Schools - Curriculum Map

Subject: Mathematics **Grade Level: First Grade**

(revised 7/08)

Content Strand: Number Sense and Operations					
Unit Title	**Time Frame**	**Unit Enduring Understanding**	**Unit Essential Questions**	**Unit Standards** **Student will:**	**Framework Standards**
Investigations units: *How Many of Each?* *Solving Story Problems* *Twos, Fives, and Tens* *Color, Shape, and Number Patterns* *Number Games and Crayon Puzzles* **Classroom Routines:** *Start With Get To* *Morning Meeting*	12 weeks throughout the year	Numbers are used to represent quantities or position. Counting is a strategy for finding the answer to how many. Quantities can be joined, separated, or compared. The position of a digit in a number determines its value.	How can sets and numbers be compared and ordered? What are some ways to find a number that is more than another number? Less than another number? Between numbers? How can counting strategies be used to join, separate, or compare sets?	A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems. Count, name and write (in numerals) whole numbers to 100. Count backwards from any number between 20 and 0. Identify the number that comes before, after, or in between given number/s. Demonstrate the concept of any number 0-100 using manipulatives and pictures. Model and count groups of tens and ones up to 100. Identify and distinguish among multiple uses of numbers, including cardinal (to tell how many); ordinal (to tell which one in an ordered list); numbers used as labels; and numbers used for measurements. Understand the concepts of common fractions (1/2, 1/3, 1/4) as parts of wholes, and parts of groups using manipulatives, real life objects, and pictures. Compare, describe, and draw sets of numbers more than, less than, and equal to a given set. Identify odd and even numbers and determine whether a set of objects has an odd or even number of elements. Identify and count pennies, nickels, dimes, and quarters. Count various coin combinations and trade coins for	1.N.1 1.N.2 1.N.3 1.N.4 1.N.5 1.N.6

Quick Images Tell a Story *Quick Survey* **Scott Foresman Addison Wesley** text—Lessons 9.1 – 9.6				equivalent collections. B. Understand meanings of operations and how they relate to one another. Demonstrate an understanding of the different ways of stating addition, e.g., addition as combination (plus, combined with, more); and equalizing (How many more are needed to make these equal?). Solve problems vertically and horizontally. Demonstrate an understanding of the different ways of stating subtraction, e.g., subtraction as comparison (how much less, how much more); and separation (how much remaining). Use minus – not take away. Solve problems vertically and horizontally. 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. C. Compute fluently and make reasonable estimates. Begin to know addition facts (addends to ten) and related subtraction facts, and use them to solve problems. Demonstrate the ability to add three single digit numbers accurately and efficiently using grouping strategies. Develop mental math strategies for addition and subtraction including counting on, counting back, doubles, doubles plus one, etc. Estimate, calculate, and solve problems involving addition and subtraction. Describe differences between estimates and actual calculations.	1.N.7 1.N.8 1..N.9 1.N.10 1.N.11 1.N.12 1.N.13 1.N.14 1.N.15 1.N.16

					1.N.17
Content Strand: Patterns, Relations, and Algebra					
Unit Title	**Time Frame**	**Unit Enduring Understanding**	**Unit Essential Questions**	**Unit Standards** **Student will:**	**Framework Standards**
Investigations units: *Color, Shape, and Number Patterns* *Solving Story Problems* *Twos, Fives, and Tens* *Number Games and Crayon Puzzles* **Classroom Routines:** *Start With Get To* *Morning Meeting* *Quick Images* *Tell a Story* *Quick Survey*	4 weeks throughout the year	Patterns can be found in many different forms. Patterns can grow and repeat. Mathematical expressions and equations represent relationships among quantities.	What is the repeating unit in a pattern? How are increasing and repeating patterns different? How can a mathematical expression represent a real life problem?	A. Understand patterns, relations, and functions. Identify, reproduce, describe, extend, and create simple rhythmic, shape, size, number, color, and letter repeating patterns with one or multiple attributes. Recognize different patterns in the environment. Recognize different patterns on the hundreds chart. Sort and classify objects with one or more attributes. Skip count by twos, fives, and tens up to at least 50, starting at any number. B. Represent and analyze mathematical situations and structures using algebraic symbols. Write number sentences to demonstrate and solve picture/word problems. C. Use mathematical models to represent and understand quantitative relationships. Write number sentences using +, –, and = to represent mathematical relationships in everyday situations. Describe functions related to trading, including coin trades and place value trades, (five pennies make one nickel or 10 ones equal one ten). D. Analyze change in various contexts. Investigate situations with variables as unknowns and as	I.P.1 1.P.2 1.P.3 1.P.4 1.P.5 I.P.6 1.P.7 1.P.8 1.P.9

				quantities that vary.	
Content Strand: Geometry					
Unit Title	**Time Frame**	**Unit Enduring Understanding**	**Unit Essential Questions**	**Unit Standards** **Student will:**	**Framework Standards**
Investigations units: *Making Shapes and Designing Quilts* **Classroom Routines:** *Start With Get To* *Morning Meeting* *Quick Images*	5 weeks	Shapes can be described and compared using their attributes. Geometric shapes can be classified by their attributes.	How can a shape be described? What are some ways to decide if shapes are congruent? How are plane shapes different from solid shapes? What are ways shapes can be sorted? What makes a shape symmetric? How can you describe the position of an object in space?	A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships. Classify and describe attributes and parts of two- and three-dimensional shapes, (e.g. number of sides, number of corners, etc.). Identify, describe, draw, and compare two-dimensional shapes: circles, squares, triangles and rectangles. Identify, describe, draw and compare 3-dimensional shapes: cone, sphere, cylinder, and cube. Identify 2-d shapes on solids. Recognize congruent shapes. B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems. Identify positions of objects in space and use appropriate language, (e.g., beside, inside, outside, next to, close to, above, below apart, around, etc.) to describe and compare their relative positions. Find and name locations on maps and express simple relationships, (e.g., near to, far away from). C. Apply transformations and use symmetry to analyze mathematical situations. Identify and draw lines of symmetry in two-dimensional shapes. Reproduce a symmetrical figure with manipulatives. Investigate symmetry in two-dimensional shapes with mirrors or by paper folding.	1.G1 1.G.2 1.G.3 1.G.4 1.G.5

				D. Use visualization, spatial reasoning, and geometric modeling to solve problems. Predict the results of putting shapes together and taking them apart. Use manipulatives (e.g., geoboards, pattern blocks, tangrams, etc.) to model and solve geometric problems.	1.G.6 1.G.7 1.G.8 1.G.9 1.G.10 1.G.11

Content Strand: Measurement

Unit Title	Time Frame	Unit Enduring Understanding	Unit Essential Questions	Unit Standards Student will:	Framework Standards
Investigations units: *How Many of Each?* *Fish Lengths and Animal Jumps* **Classroom Routines:** *Start With Get To* *Morning Meeting* *Quick Images* *Quick Survey* **Scott Foresman Addison Wesley** text Lessons 10.1-10.5; 10.8;	2 weeks	Specific tools measure specific attributes. A measurement must contain a number and a unit.	What units and tools measure the different attributes? Why are units used in measurements? How do measurements help compare objects?	A. Understand measurable attributes of objects and the units, systems, and processes of measurement. Identify parts of the day (e.g., morning, afternoon, evening), days of the week, and months of the year. Identify parts of a calendar. Order sequence of events in a day, Tell time at hour and half-hour intervals on analog and digital clocks. Compare and order by length, height, and weight of two or more objects by using direct comparison with standard and non-standard measurement. Measure and compare common objects using metric and U.S. Customary (English) units of length measurement, (e.g., centimeter, inch, feet). Explore measurable attributes of objects, including length, perimeter, weight, area, volume, and temperature. B. Apply appropriate techniques, tools, and formulas to determine measurements. Make and use estimates of measurement, including time, length, volume, and weight.	1.M.1 1.M.2 1.M.3 1.M.4 1.M.5 1.M.6

10.11-				Compare concrete objects using these measures.	1.M.7

Content Strand: Data Analysis, Statistics, and Probability

Unit Title	Time Frame	Unit Enduring Understanding	Unit Essential Questions	Unit Standards Student will:	Framework Standards
Investigations units: *What Would You Rather Be?* **Classroom Routines:** *Start With Get To* *Morning Meeting* *Quick Images* *Quick Survey* **Scott Foresman Addison Wesley** text Lessons 7.6, 8.11-8.14	2 weeks	Graphs convey data in a concise way. Data displays organize information that can be read easily.	What are some ways to gather and record information? What information do bar graphs and pictographs show? What are some ways data can be displayed to communicate information? What questions can be answered from a graph?	A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them. Use interviews, surveys, and observations to gather data about themselves and their surroundings. B. Select and use appropriate statistical methods to analyze data. Organize, classify, represent, and interpret data using tallies, charts, object graphs, bar graphs, pictographs, and Venn diagrams; interpret the representations. C. Develop and evaluate inferences and predictions that are based on data. Use sequential strategies for predicting outcomes. D. Understand and apply basic concepts of probability. Investigate basic probability activities (e.g., spinners, dice toss, coin toss, etc.), tally and record results.	1.D.1 1.D.2 1.D.3 1.D.4