

TENTATIVE PUBLIC SCHOOL 209 SECOND GRADE MATH CURRICULUM CALENDAR 2005-2006

Unit of Study/ Dates	From 9/8/05-10/21/05 Mathematical thinking at grade 2	From 10/24/05-12/9/05 Coins, Coupons, and Combinations	From 12/12/05-1/6/06 Does it walk, crawl, or swim?
Focus/ Purpose	<p>This 6 week unit introduces second graders to some of the content, processes, and materials they will be using to solve problems in mathematics. Students explore counting and categorization in each of these three areas: number, data, and geometry. They count quantities by ones and by groups, compare two amounts, explore coin values and play equivalency trading games. Students sort, classify, count, and record data collected from themselves and their families. Using Geoblocks and pattern blocks students describe attributes and categorize two- and three-dimensional shapes and explore symmetry. While this unit is designed to help teachers get to know and assess students' mathematical understanding, it is also designed to help establish a mathematical community and environment.</p>	<p>The focus of this 6 week unit is on helping students develop a sense of numbers as whole quantities and begin to look for patterns and relationships that exist in our number system. They gain facility with addition combinations through their work with combinations of ten, doubles ($4 + 4$), and doubles plus or minus one ($4 + 5$, $4 + 3$). They continue their work with counting with an emphasis on counting by groups, such as by 2's, 5's and 10's and use these counting strategies to keep track of large amounts. Students explore five and ten and multiples of five and ten and begin to look for relationships between these important numbers in our number system. They are introduced to combining and separating problems and are encouraged to develop strategies that make sense to them for adding and subtracting numbers. In addition, students are introduced to calculators, coins and the 100 chart and are encouraged to use these tools as they solve problems.</p>	<p>Working with categorical data is the emphasis of this 3 week unit. Students are introduced to sorting and classification as a way of organizing data. They investigate similarities and differences in sets of related objects, people, or data. They classify these groups according to particular attributes and sort the members of the group accordingly. Real data is collected in three separate investigations: students perform a sink and float experiment; students collect and compare data about what scares them and what scared their parents when they were little; and students collect data about the animals in their neighborhoods. In each of these projects students construct their own categories for sorting data, represent data in a variety of ways, use categories to describe and compare data sets and then formulate hypotheses and build theories about what is represented by the data.</p>
Skills	<ol style="list-style-type: none"> 1. Management and Routines <ol style="list-style-type: none"> a. How use math manipulatives b. How to use work with partners c. The structure of the workshop 2. Count quantities by ones and groups 3. Understand coin value and equivalency 4. Classify, count, and record data 	<ol style="list-style-type: none"> 1. Develop a sense of numbers as quantities <ol style="list-style-type: none"> a. patterns in the number system 2. Addition combinations 3. Counting in groups <ol style="list-style-type: none"> a. 2's, 5's, and 10's 4. Using different addition and subtraction strategies 	<ol style="list-style-type: none"> 1. Classifying data <ol style="list-style-type: none"> a. objects, people, or data 2. Collect and compare data 3. Represent data in a variety of ways

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Daily Connections	1. Morning Math/Calendar routine 2. Daily real world connections 3. Math Message 4. Criteria charts	1. Morning Math/Calendar routine 2. Weekly Math Facts 3. Math Message 4. Criteria charts	1. Morning Math/Calendar routine 2. Integrated to science curriculum 3. Math Message 4. Criteria charts
EDM Connection	1.1; 1.4; 1.6; 1.11; 1.13; 2.9;3.4; 5.3 7.1; 7.7; 8.3;12.6.12.7	1.3, 1.6, 3.7, 3.8, 2.3, 2.4, 2.2, 2.12, 7.2, 10.1, 3.2, 6.1, 10.2	2.7, 3.5, 9.9, 7.7, 7.8
Standards and Assessments			

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Unit of Study/ Dates	From 1/9/06-2/10-06 Shapes, Halves, and Symmetry	From 2/13/06-3/31/06 Putting Together and Taking Apart	From 4/3/06-5/19/06 How Long? How Far?
Focus/ Purpose	<p>In this 5 week unit, the primary emphasis is on students investigating the structure of 2-and 3-dimensional shapes. Using pattern blocks, Geoblocks, and square tiles, students explore the structure of shapes and how they can be decomposed or put together into other shapes. They investigate the structure of rectangular arrays by covering rectangles with tiles, building rectangles, drawing rectangles, and describing rectangles. They find halves of rectangles and other 2- and 3-dimensional shapes. They explore symmetry making symmetrical designs and pictures.</p>	<p>This unit supports students in developing strategies for solving addition and subtraction problems based on an understanding of numbers, number relationships and the operations of addition and subtraction. Students continue their work with counting work with an emphasis on counting by fives and tens as they play games involving cubes, coins and 100 charts. In an investigation that focuses on the number 100, students write equations that equal 100 and break 100 into multiples of five and ten. They then write a story about the accumulation of 100 objects, based on an equation they have written consisting of at least 4-6 addends. All of this work provides students with experiences that contribute to the development of addition and subtraction strategies. Throughout the unit students solve a variety of word problems that involve combining, separating and comparing two digit numbers. Emphasis is placed on understanding the problem, deciding which operation is needed and selecting problem solving strategies that make sense. Strategies are recorded with words, numbers, and pictures enabling students to discuss their strategies for adding and subtracting numbers with the whole class.</p>	<p>In this unit, students explore linear measurement using direct and indirect comparison, and non-standard units. In the first investigation, students indirectly compare lengths and find equivalent lengths using materials such as string or adding machine tape. They use non-standard units to measure length, and develop strategies for iterating and counting units. As they work with units of different sizes, students explore the relationship between the size of the unit and the number of units needed. In the second investigation, students construct and measure simple paths.</p>
Skills	<ol style="list-style-type: none"> 1. Symmetry 2. Using pattern blocks to solve problems 3. Rectangular structures 4. 2 and 3 dimensional shapes 	<ol style="list-style-type: none"> 1. Counting by 5's and 10's 2. focus on the number 100 <ol style="list-style-type: none"> a. equations b. counting 3. Word problem solving skills and strategies 	<ol style="list-style-type: none"> 1. Linear measurement 2. Standard and non-standard measurements 3. Equivalent lengths 4. Construct and measure lengths

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Daily Connections	1. Morning Math/Calendar routine 2. Daily real world geometric connections 3. Math Message 4. Criteria charts	1. Morning Math/Calendar routine 2. Weekly Math Facts 3. Math Message 4. Criteria charts	1. Morning Math/Calendar routine 2. Daily real world measurement connections 3. Math Message 4. Criteria charts
EDM Connection	5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8 5.9, 8.5, 8.6	2.1, 2.5, 2.8, 2.12, 2.13, 4.2, 4.9, 6.1, 6.2	9.1, 9.2, 9.4, 9.6, 9.7
Standards and Assessments			

TENTATIVE PUBLIC SCHOOL 209 SECOND GRADE MATH CURRICULUM CALENDAR 2005-2006

Unit of Study/ Dates	From 5/22/06-6/9/06 How Many Pockets? How Many Teeth?	From 6/12/06-6/28/06 Timeline and Rhythm Patterns	
Focus/ Purpose	<p>This 3 week unit complements the unit <i>Does it Walk, Crawl, or Swim?</i> by involving students in collecting and representing numerical data. Students explore a variety of materials and methods for organizing and representing data. They work with representations that focus on grouped (4 siblings are represented by one cube) and ungrouped data (4 pockets are represented by a tower of four cubes). Students collect data about the number of teeth they have lost, make predictions about how the data might be different in younger or older classes, and work in pairs to survey other grades. They decide on the method of data collection, organize and represent the data, and then make statements about their teeth data. The final investigation involves students in all aspects of data collection and analysis as they design and carry out their own data project. Students explore a variety of data representations including some conventional representations but throughout the unit emphasis is placed on students organizing and representing data in ways that make sense to them.</p>	<p>During this two week unit students explore concepts of time and rhythm. In the first investigation students explore timeline representations with regular scale (every year, every hour). They assemble a timeline of the life of Dr. Seuss and discuss important events in his life. Later they describe and sequence events over time as they create a timeline of important events in their own lives. Students work with a 24 hour representation of a day and fill in this timeline with activities that make a day "special" and compare the length of time it takes to do these "special activities" (e.g., Do you sleep for longer than you swim?). In the second investigation students explore mathematical patterns expressed in rhythms they invent using body actions (such as clapping). They develop ways of recording their rhythms on paper so that others may follow them. Rhythms are also communicated by a shared code in which a particular symbol stands for an action. Finally, students look at traditional musical notation and compose their own two-part rhythm music.</p>	
Skills	<ol style="list-style-type: none"> 1. Collection of data 2. Represent data 3. Organize data 4. Analyze and design a data project 	<ol style="list-style-type: none"> 1. Sequencing in a timeline 2. 24 hour representation of a day 3. Mathematical rhythm patterns 	

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Daily Connections	1. Morning Math/Calendar routine 2. Daily real world data connections 3. Math Message 4. Criteria charts	1. Morning Math/Calendar routine 2. Weekly Math Facts 3. Math Message 4. Criteria charts	
EDM Connection	6.3, 12.6, 12.7	12.3	
Standards and Assessments			