

# **Nerstrand School Math Curriculum**

**Grade Specific For Kindergarten through Grade 5**

**Developed by Nerstrand School Teachers**

**Funded by a  
Federal Dissemination Grant  
Sept. 2003-Sept. 2005**

# Math – Kindergarten

## Strand: I. Mathematical Reasoning

Standard	<p><i>The student will apply skills of mathematical representation, communication and reasoning throughout the remaining four content strands.</i></p> <ul style="list-style-type: none"> <li>• <i>Number Sense, Computation and Operations</i></li> <li>• <i>Patterns, Functions and Algebra</i></li> <li>• <i>Data Analysis, Statistics and Probability</i></li> <li>• <i>Spatial Sense, Geometry and Measurement</i></li> </ul>																																
Benchmarks	<p><i>The student will:</i></p> <ol style="list-style-type: none"> <li>1. <i>Create and solve word problems using actions, objects, words, pictures, or numbers.</i></li> <li>2. <i>Estimate and check that answers are reasonable.</i></li> <li>3. <i>Explain to others how a problem is solved.</i></li> </ol>																																
Teaching Strategies	<ul style="list-style-type: none"> <li>*Model skills needed for number sense recognition and understanding</li> <li>*Flexible grouping for re-teaching purposes</li> <li>*Work with large, small, and independent groups             <ul style="list-style-type: none"> <li>*Games and Activities</li> <li>*Daily Calendar Routine</li> <li>*White Board Activities</li> <li>*Calculator Activities</li> </ul> </li> </ul>																																
Materials Used	<ul style="list-style-type: none"> <li>*Everyday Mathematics</li> <li>*Minute Math</li> <li>*Home Links</li> </ul> <p><b>Literature:</b></p> <table border="0" style="width: 100%;"> <tr> <td>Anno’s Counting Book</td> <td>Ten, Nine, Eight</td> </tr> <tr> <td>The Five Chinese Brothers</td> <td>1, 2, 3 to the Zoo</td> </tr> <tr> <td>Rooster Off to See the World</td> <td>The Very Hungry Caterpillar</td> </tr> <tr> <td>Ten Little Rabbits</td> <td>Out for the Count: A Counting Adventure</td> </tr> <tr> <td>Ten Black Dots</td> <td>Fish Eyes: A Book You Can Count On</td> </tr> <tr> <td>Caps for Sale</td> <td>The Crayon Counting Book</td> </tr> <tr> <td>Nine Ducks Nine</td> <td>Seven Little Monsters</td> </tr> <tr> <td>Count and See</td> <td>The Wolf’s Chicken Stew</td> </tr> <tr> <td>Over in the Meadow</td> <td>17 Kings and 42 Elephants</td> </tr> <tr> <td>Bunches and Bunches of Bunnies</td> <td>12 Ways to Get to 11</td> </tr> <tr> <td>Moira’s Birthday</td> <td>Mouse Count</td> </tr> <tr> <td>Baboushka and the Three Kings</td> <td>One Was Johnny</td> </tr> <tr> <td>The Right Number of Elephants</td> <td>Counting on Calico</td> </tr> <tr> <td>Mojo Means One: A Swahili Counting Book</td> <td></td> </tr> <tr> <td>How the Stars Fell into the Sky: A Navajo Legend</td> <td></td> </tr> <tr> <td>One Fish Two Fish Red Fish Blue Fish</td> <td></td> </tr> </table>	Anno’s Counting Book	Ten, Nine, Eight	The Five Chinese Brothers	1, 2, 3 to the Zoo	Rooster Off to See the World	The Very Hungry Caterpillar	Ten Little Rabbits	Out for the Count: A Counting Adventure	Ten Black Dots	Fish Eyes: A Book You Can Count On	Caps for Sale	The Crayon Counting Book	Nine Ducks Nine	Seven Little Monsters	Count and See	The Wolf’s Chicken Stew	Over in the Meadow	17 Kings and 42 Elephants	Bunches and Bunches of Bunnies	12 Ways to Get to 11	Moira’s Birthday	Mouse Count	Baboushka and the Three Kings	One Was Johnny	The Right Number of Elephants	Counting on Calico	Mojo Means One: A Swahili Counting Book		How the Stars Fell into the Sky: A Navajo Legend		One Fish Two Fish Red Fish Blue Fish	
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Assessments	<ul style="list-style-type: none"> <li>*On-going Observations</li> <li>*Unit Tests</li> <li>*End-of-the-year tests</li> <li>*Weekly Homework</li> <li>*Skills Assessment</li> </ul>																																
Technology	<ul style="list-style-type: none"> <li>Zoo Zillians</li> <li>Millie’s Math House</li> </ul>																																
Projects	<ul style="list-style-type: none"> <li>Calendar activities</li> <li>Class books</li> </ul>																																

Math - Kindergarten

**Strand II Number Sense, Computation, and Operation**

**II.A. Number Sense**

Standard	<i>The student will represent quantities using whole numbers and understand relationships among whole numbers.</i>
Benchmarks	<p><i>The student will:</i></p> <ol style="list-style-type: none"> <li>1. <i>Count forward to 31, and backward from 10.</i></li> <li>2. <i>Count the number of objects in a set and identify the quantity.</i></li> <li>3. <i>Compare the number of objects in two or more sets.</i></li> <li>4. <i>Given a number, identify one more or one less.</i></li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Model number activities</li> <li>*Games and Activities</li> <li>*Daily Calendar Routine</li> <li>*White Board Activities</li> <li>*Calculator Activities</li> </ul>
Materials Used	<p>Everyday Mathematics Minute Math Home Links <b>Literature:</b> Anno's Counting Book The Five Chinese Brothers Rooster Off to See the World Ten Little Rabbits Nine Ducks Nine Count and See Over in the Meadow Bunches and Bunches of Bunnies Moirá's Birthday Baboushka and the Three Kings One Was Johnny The Right Number of Elephants Counting on Calico Out for the Count: A Counting Adventure How the Stars Fell into the Sky: A Navajo Legend One Fish Two Fish Red Fish Blue Fish Mojo Means One: A Swahili Counting Book Fish Eyes: A Book You Can Count On</p> <p>Ten, Nine, Eight 1, 2, 3 to the Zoo The Very Hungry Caterpillar Ten Black Dots Caps for Sale The Wolf's Chicken Stew 17 Kings and 42 Elephants 12 Ways to Get to 11 Mouse Count The Crayon Counting Book Seven Little Monsters</p>
Assessments	<ul style="list-style-type: none"> <li>*On-going Observations</li> <li>*Unit Tests</li> <li>*End-of-the-year tests</li> <li>*Weekly Homework</li> <li>*Skills Assessment</li> </ul>
Technology	Zoo Zillions
Projects	Calculator Activities

Strand II: Number Sense, Computation and Operations

I.I.B. Computation and Operation

Standards	<i>The student will add and subtract whole numbers up to 6 in real-world mathematical problems.</i>
Benchmarks	<p><i>The student will:</i></p> <ol style="list-style-type: none"> <li>1. <i>Recognize the number of objects up to 6, without counting.</i></li> <li>2. <i>Add and subtract whole numbers up to 6, using concrete objects.</i></li> <li>3.</li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Model skills needed for mathematical computation and operations understanding</li> <li>*Flexible grouping for re-teaching</li> <li>*Work with large, small, and independent groups</li> <li>*Games and Activities</li> <li>*Daily Calendar Routine</li> <li>*White Board Activities</li> <li>*Calculator Activities</li> </ul>
Materials Used	<p>Everyday Mathematics Minute Math Home Links</p> <p><b>Literature:</b> Each Orange Had 8 Slices: A Counting Book The Doorbell Rang Fraction Fun Fraction Action Eating Fractions Elevator Magic One Hundred Hungry Ants A Remainder of One</p>
Assessments	<ul style="list-style-type: none"> <li>*On-going Observations</li> <li>*Unit Tests</li> <li>*End-of-the-year tests</li> <li>*Weekly Homework</li> <li>*Skills Assessment</li> </ul>
Technology	Computer program: Playhouse
Projects	Literature book extensions

Kindergarten Math

**Strand III. Patterns, Functions and Algebra**

**II. A. Patterns and Functions**

Standard	<i>The student will sort, classify and compare objects based on their attributes. Understand simple repeating patterns.</i>
Benchmark	<i>The student will:</i> <ol style="list-style-type: none"> <li>1. Sort objects in a set by one attribute such as size, shape, color or thickness.</li> <li>2. Identify an object that does not belong in a set.</li> <li>3. Recognize, describe and extend repeating patterns involving up to three elements using objects, pictures, sounds or movements.</li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Model skills needed for patterns and functions</li> <li>*Flexible grouping for re-teaching</li> <li>*Work with large, small, and independent groups</li> <li>*Games and Activities</li> <li>*Daily Calendar Routine</li> <li>*White Board Activities</li> <li>*Use manipulative tools</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>*Everyday Mathematics</li> <li>*Minute Math</li> <li>*Home Links</li> </ul> <p><b>Literature:</b>            April Rabbits            Chicken 'Licken            A Fly Went By            The Gingerbread Boy            Giraffe and a Half            The House That Jack Built            Lazy Jack            The Little Red Hen            The Old Woman and Her Pig            Tikki Tikki Tembo</p>
Assessments	<ul style="list-style-type: none"> <li>*On-going Observations</li> <li>*Unit Tests</li> <li>*End-of-the-year tests</li> <li>*Weekly Homework</li> <li>*Skills Assessment</li> </ul>
Technology	Computer activity: Playhouse
Projects	Sorting Activities Making own patterns with manipulative tools

Kindergarten –Math  
 Strand IV. Data Analysis, Statistics and Probability

<i>Standard</i>	<i>The student will depict data with objects and pictures.</i>
<i>Benchmarks</i>	<i>The student will:</i> 1. <i>Represent data about classmates or their surroundings by using objects or pictures.</i>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Provide experiences for students to gather data</li> <li>*Flexible grouping for re-teaching</li> <li>*Work with large, small, and independent groups</li> <li>*Games and Activities</li> <li>*Daily Calendar Routine</li> <li>*White Board Activities</li> <li>*Charting Activities/Question of the Day</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>*Everyday Mathematics</li> <li>*Minute Math</li> <li>*Home Links</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>*On-going Observations</li> <li>*Unit Tests</li> <li>*End-of-the-year tests</li> <li>*Weekly Homework</li> <li>*Skills Assessment</li> </ul>
Technology	“Question of the Day” where all students sign in on their answer page.

Kindergarten Math  
 Strand V. Spatial Sense, Geometry, Measurement  
 V.A. Spatial Sense

Standard	<i>The student will understand the meaning of terms used to describe location and placement of objects.</i>
Benchmarks	<i>The student will:</i> <i>1. Locate and describe placement of objects with terms such as: on, inside, outside, above, below, over, under, beside, between, in front of, behind, next to, top, bottom.</i>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Use spatial sense vocabulary throughout the day in practical application</li> <li>*Flexible grouping for re-teaching</li> <li>*Work with large, small, and independent groups</li> <li>*Games and Activities</li> <li>*Daily Calendar Routine</li> <li>*White Board Activities</li> <li>*Songs</li> </ul>
Materials Used	Everyday Mathematics Minute Math Home Links Dr. Jean’s CD selections  <b>Literature:</b> Harold and the Purple Crayon Itsy Bitsy Spider Apples Up On Top Up, Down, Over, Under
Assessments	<ul style="list-style-type: none"> <li>*On-going Observations</li> <li>*Unit Tests</li> <li>*End-of-the-year tests</li> <li>*Weekly Homework</li> <li>*Skills Assessment</li> </ul>
Technology	Dr. Jean’s CD selections Computer program: Playhouse
Projects	Activities related to literature selections White board activities Simon Says

Kindergarten –Math  
 Strand V. Spatial Sense, Geometry and Measurement  
 V. B. Geometry

<i>Outcomes</i>	<i>The student will sort two and three dimensional shapes.</i>
<i>Learner Activities</i>	<i>The student will:</i> 1. <i>Sort two-and three-dimensional shapes according to their geometrical attributes.</i>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Model skills needed for understanding of geometry</li> <li>*Flexible grouping for re-teaching</li> <li>*Work with large, small, and independent groups</li> <li>*Games and Activities</li> <li>*White Board Activities</li> <li>*Commercial Games; mazes, puzzles, tan grams</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>*Everyday Mathematics</li> <li>*Minute Math</li> <li>*Home Links</li> </ul> <p><b>Literature:</b>          The Secret Birthday Message          The Shape of Things          A Cloak for a Dreamer          The Village of Round and Square Houses          Big Ones, Little Ones          So Many Circles, So Many Squares          Cubes, Cones, Cylinders, and Spheres          Shapes, Shapes, Shapes          Sea Shapes          Grandfather Tang’s Story</p>
Assessments	<p><b>Assessments:</b></p> <ul style="list-style-type: none"> <li>*On-going Observations</li> <li>*Unit Tests</li> <li>*End-of-the-year tests</li> <li>*Weekly Homework</li> <li>*Skills Assessment</li> </ul>
Technology	Geometry Golf
Projects	<ul style="list-style-type: none"> <li>Tangrams</li> <li>Pattern blocks</li> <li>Puzzles</li> </ul>



Kindergarten –Math  
 Strand V. Spatial Sense, Geometry and Measurement  
 V.C. Measurement

<i>Standards</i>	<ul style="list-style-type: none"> <li>• The student will understand terms and comparative language used in various measurement situations.</li> <li>• The student will identify tools to measure time.</li> <li>• The student will identify coins.</li> </ul>
<i>Benchmarks</i>	<p>The student will:</p> <ol style="list-style-type: none"> <li>1. Compare and order objects by length, weight, volume, temperature or size and use appropriate vocabulary such as long than, holds more, smaller.</li> <li>2. Know that clocks and calendars are instruments to measure time.</li> <li>3. Recognize the following coins: penny, nickel, dime and quarter.</li> <li>4. Compare and order events based on time and use appropriate vocabulary such as yesterday, today or tomorrow to describe relative time.</li> </ol>
<i>Teaching Strategies</i>	<ul style="list-style-type: none"> <li>*Model measurement skills</li> <li>*Flexible grouping for re-teaching</li> <li>*Work with large, small, and independent groups</li> <li>*Games and Activities</li> <li>*Daily Calendar Routine</li> <li>*White Board Activities</li> <li>*Commercial Games; mazes, puzzles, tangrams</li> <li>*Provide a variety of measurement tools for exploration</li> </ul>
<i>Materials Used</i>	<p>Everyday Mathematics          Minute Math          Home Links  <b>Literature:</b>          Big Dog...Little Dog: A Bedtime Story      Is It Larger? Is It Smaller?          Much Bigger Than Martin                      Inch by Inch          The Best Bug Parade                              How Big Is a Foot?          All in a Day    Clocks and More Clocks          My First Book of Time                              Chicken Soup with Rice          Three Days on a River in a Red Canoe        Over and Over          Benny's Pennies                                    If You Made a Million          Alexander, Who Used to Be Rich Last Sunday A Chair for My Mother</p>
<i>Assessments</i>	<ul style="list-style-type: none"> <li>*On-going Observations</li> <li>*Unit Tests</li> <li>*End-of-the-year tests</li> <li>*Weekly Homework</li> <li>*Skills Assessment</li> </ul>
<i>Technology</i>	Zoo Zillions
<i>Projects</i>	Use a variety of measurement tools to predict and verify measurement

**\*\*Suggestions for kindergarten math: start the first grade curriculum in the middle of the year.**

# Math Grade 1

## Strand I: Mathematical Reasoning

Standard	<p><i>The student will apply skills of mathematical representation, communication and reasoning throughout the remaining four content strands.</i></p> <ul style="list-style-type: none"> <li>• <i>Number Sense, Computation and Operations</i></li> <li>• <i>Patterns, Functions and Algebra</i></li> <li>• <i>Data Analysis, Statistics and Probability</i></li> <li>• <i>Spatial Sense, Geometry and Measurement</i></li> </ul>
Benchmarks  Learner Outcomes	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li>1. <i>Create and solve word problems using actions, objects, words, pictures, or numbers</i></li> <li>2. <i>Estimate and check that answers are reasonable</i></li> <li>3. <i>Explain to others how a problem was solved</i></li> <li>4. <i>Use manipulative tools to solve and explain problems</i></li> <li>5. <i>Work in large, small, and independent groups</i></li> <li>6. <i>Use a math journal and notebook</i></li> <li>7. <i>Participate in class discussions and activities</i></li> <li>8. <i>Various classroom paper and pencil activities</i></li> <li>9. <i>Complete homework activities and return them to school</i></li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Model skills of mathematical representation, communication, and reasoning</li> <li>*Flexible grouping for re-teaching purposes</li> <li>*Provide a variety of manipulative tools for student use</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>*Everyday Mathematics math program</li> <li>*Student notebooks and folders</li> <li>*Manipulative tools               <ul style="list-style-type: none"> <li>Small floor tiles to tell addition and subtraction stories</li> <li>Pattern Blocks</li> <li>Geoboards</li> <li>Cubes</li> </ul> </li> <li>*Literature with a mathematical theme relating to mathematical reasoning:               <ul style="list-style-type: none"> <li><u>Inch by Inch</u> by Leo Lionni</li> <li><u>How Big is a Foot</u> by Rolf Myller</li> <li><u>Fish Eyes</u> by Lois Ehlert</li> </ul> </li> </ul>
Assessments	<ul style="list-style-type: none"> <li>*Everyday Mathematics assessments</li> <li>*On going assessments</li> <li>*Work Sampling System</li> <li>* Student homework</li> </ul>
Technology	<ul style="list-style-type: none"> <li>*Math Blasters Jr.</li> <li>*Math Blasters</li> <li>*Millie's Math House</li> <li>*Zoo Zillions</li> </ul>
Projects	Daily Calendar routine

First Grade Math  
 Strand II. Number Sense, Computation and Operations  
 II. A. Number Sense

Outcomes	<i>Students will understand place value, ways of representing whole numbers and relationships among whole numbers. Understand the concept of one half.</i>
Benchmarks	<p><i>The student will:</i></p> <ol style="list-style-type: none"> <li>1. Read, write numerals for, compare and order numbers to 120</li> <li>2. Count by 2's to 30 and by 5's to 120</li> <li>3. Count backwards from 30</li> <li>4. Demonstrate understanding of odd and even quantities up to 12</li> <li>5. Represent whole numbers up to 20 in various ways, maintaining equality</li> <li>6. Identify one half of a set of concrete objects</li> <li>7. Participate in large, small, and independent groups</li> <li>8. Use a math journal and notebook</li> <li>9. Participate in class discussions and activities</li> <li>10. Work with a variety of manipulative tools to solve problems</li> <li>11. Various classroom paper and pencil activities</li> <li>12. Complete and return homework</li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Model skills needed for number sense recognition and understanding</li> <li>*Flexible grouping for re-teaching purposes</li> <li>*Work with large, small, and independent groups</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>*Everyday Mathematics math program</li> <li>*Variety of manipulative tools</li> <li>*Student math notebooks</li> <li>*Literature with a mathematical theme relating to number sense</li> <li><u>Can You Count Ten Toes?</u> by Leslie Evans</li> <li><u>Anno's Counting House</u> by Mitsumasa</li> <li><u>Reese's Pieces, Count by Fives</u> by Henry Pallotla</li> <li><u>The Skip Count Song</u> by Rozanne Lanczak Williams</li> <li><u>Counting Crocodiles</u> by Judy Sierra</li> <li><u>Cheerios Counting Book</u> by Barbara Barvieri McGrath</li> <li><u>What Comes in Threes</u> by Marlene Beierle and Anne Sulvan</li> <li><u>Hershey Milk Chocolate Fractions</u> Book by Jerry Pallotta</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>*Everyday Mathematics assessments</li> <li>*On going observations</li> <li>*Various paper and pencil activities</li> <li>*Student homework</li> <li>*Work Sampling System</li> </ul>
Technology	<ul style="list-style-type: none"> <li>*Math Blasters Jr.</li> <li>*Math Blasters</li> <li>*Millie's Math House</li> <li>*Zoo Zillions</li> </ul>
Projects	Counting the number of school days as part of Calendar. (Straws used as counters, grouped in 1's, 10's, and 100's and traded/regrouped as needed)

First Grade Math

Strand II. Number Sense, Computation and Operations

II. B. Computation and Operation

<i>Standard</i>	<i>Students will be able to add and subtract one-digit whole numbers in real-world and mathematical problems.</i>
<p>Benchmarks</p>    <p>Learner Activities</p>	<ol style="list-style-type: none"> <li>1. Use one-digit addition and subtraction to solve real-world and mathematical problems</li> <li>2. Find the sum of three one-digit numbers</li> <li>3. Participate in large, small, and independent groups</li> <li>4. Work with a variety of manipulative tools to solve problems</li> <li>5. Various paper and pencil activities</li> <li>6. Participate in class discussions and activities</li> <li>7. Use a math journal and notebook</li> <li>8. Complete and return homework</li> </ol>
<p>Teaching Strategies</p>	<ul style="list-style-type: none"> <li>*Model skills needed for mathematical computation and operations understanding</li> <li>*Flexible grouping for re-teaching</li> <li>*Work with large, small, and independent groups</li> </ul>
<p>Materials Used</p>	<ul style="list-style-type: none"> <li>*Everyday Mathematics math program</li> <li>*Student math notebooks</li> <li>*Variety of manipulative tools for student use</li> <li>*Literature with a mathematical theme relating to computation and operation               <ul style="list-style-type: none"> <li><u>Fish Eyes</u> by Lois Shlert</li> <li><u>Pumpkins</u> by Ray May</li> <li><u>The Biggest Pumpkin Ever</u> by Stephen Kroll</li> <li><u>Little Number Stories</u> – Addition by Rozanne Lanczak Williams</li> <li><u>Hershey Kisses Addition Book</u> by Jerry Pallotta</li> <li><u>Ready, Set, Hop</u> by Stuart J. Murphy</li> <li><u>Little Number Stories</u> – subtraction by Rozanne Lanczak Williams</li> <li><u>Hershey Kisses Subtraction Book</u> by Jerry Pallotta</li> </ul> </li> </ul>
<p>Assessments</p>	<ul style="list-style-type: none"> <li>*Everyday Mathematics assessments</li> <li>*On going assessments</li> <li>*Various paper and pencil activities</li> <li>*Student homework</li> <li>*Work Sampling System</li> </ul>
<p>Technology</p>	<ul style="list-style-type: none"> <li>*Math Blasters Jr.</li> <li>*Math Blasters</li> <li>*Millie’s Math House</li> <li>*Zoo Zillions</li> </ul>

First Grade Math  
 Strand III. Patterns, Functions, and Algebra  
 III. A. Patterns and Functions

Standards	<ol style="list-style-type: none"> <li>1. Students will be able to sort classify and compare objects based on their attributes.</li> <li>2. Students will be able to understand repeating patterns.</li> </ol>
Learner Activities	<p>The student will be able to:</p> <ol style="list-style-type: none"> <li>1. sort, classify, and compare objects in a set in more than one way</li> <li>2. recognize, describe, and extend repeating patterns involving up to four elements</li> <li>3. Work with a variety of manipulative tools</li> <li>4. Participate in large, small, and independent groups</li> <li>5. Use a math journal and notebook</li> <li>6. Various paper and pencil activities</li> <li>7. Participate in class discussions and activities</li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>• Model skills needed to sort, classify, and compare objects based on their attributes</li> <li>• Model a variety of repeating patterns</li> <li>• Flexible grouping for re-teaching purposes</li> <li>• Work with large, small, and independent groups</li> </ul>
Materials Used	<p>Everyday Mathematics math program          Variety of manipulative tools          Pattern blocks          Cubes          Various paper and pencil activities          Student math notebooks          Literature with a mathematical theme related to patterns and function  <u>I See Patterns</u> by Lina Benton  <u>Mr. Noisy's Book of Patterns</u> by Rozanne Lanczak Williams  <u>My Mom and Dad Make Me Laugh</u> by Nick Sharratt</p>
Assessments	<ul style="list-style-type: none"> <li>*Everyday Mathematics assessments</li> <li>*On going observations</li> <li>*Various paper and pencil activities</li> <li>*Student homework</li> <li>*Work Sampling System</li> </ul>
Technology	<ul style="list-style-type: none"> <li>*Math Blasters Jr.</li> <li>*Math Blasters</li> <li>*Millie's Math House</li> </ul>
Projects	<p>We take a picture of all of us wearing patterns and then each student makes a pattern with pattern blocks. I take a photograph of each of them and use it in the child's portfolio</p>

First Grade Math  
 Strand IV. Data, Statistics and Probability  
 IV. A. Data and Statistics

Benchmarks	<i>The students will gather and record data in real-world and mathematical problems.</i>
Outcomes	Students will be able to gather and record data in real-world and mathematical problems.
Learner Activities	<ul style="list-style-type: none"> <li><i>*Gather and record data about classmates and their surroundings in a simple graph</i></li> <li><i>*Identify patterns in simple graphs</i> <ul style="list-style-type: none"> <li><i>*Work with a variety of manipulative tools</i></li> <li><i>*Participate in large, small, and independent groups</i></li> <li><i>*Use a math journal and notebook</i></li> <li><i>*Various paper and pencil activities</i></li> <li><i>*Participate in class discussions and activities</i></li> </ul> </li> </ul>
Teaching Strategies	<p>Model skills needed to gather and record data          Demonstrate and explore a variety of graphs used for record keeping          Flexible grouping for re-teaching purposes          Work with large, small, and independent groups</p>
Materials Used	<ul style="list-style-type: none"> <li><i>*Everyday Mathematics math program</i></li> <li><i>*Variety of manipulative tools</i></li> <li><i>*Various paper and pencil activities</i></li> <li><i>*Student math notebooks</i></li> <li><i>*Literature with a mathematical theme related to graphing</i>  <u><i>We Can Make Graphs</i></u> by Rozanne Lanczak Williams</li> </ul>
Assessments	<ul style="list-style-type: none"> <li><i>*Everyday Mathematics assessments</i></li> <li><i>*On going observations</i></li> <li><i>*Various paper and pencil activities</i></li> <li><i>*Student homework</i></li> <li><i>*Work Sampling System</i></li> </ul>
Technology	<i>*Millie's Math House</i>
Projects	Graphing Program: We graph our pets, favorite ice cream, lunch choice, favorite color, favorite fruit and shirt color.

First Grade Math  
 Strand V. Spatial Sense, Geometry and Measurement  
 V.A. Spatial Sense

Benchmark	<i>Students will be able to explore the concept of symmetry in real-world situations.</i>
Learner Activities	<ul style="list-style-type: none"> <li><i>*Explore symmetry of objects and designs through mirrors or paper folding activities</i></li> <li><i>*Make symmetrical art projects</i></li> <li><i>*Work in large, small, and independent groups</i></li> <li><i>*Use a math journal and notebook</i></li> <li><i>*Participate in class discussions and activities</i></li> <li><i>*Various paper and pencil activities</i></li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li><i>*Model skills needed to explore symmetry</i></li> <li><i>*Flexible grouping for re-teaching purposes</i></li> <li><i>*Work with large, small, and independent group</i></li> <li><i>*Use literature books that have a theme of symmetry</i></li> </ul>
Materials Used	<ul style="list-style-type: none"> <li><i>*Everyday Mathematics math program</i></li> <li><i>*Various paper and pencil activities</i></li> <li><i>*Student math notebooks</i></li> </ul>
Assessments	<ul style="list-style-type: none"> <li><i>*Everyday Mathematics assessments</i></li> <li><i>*On going observations</i></li> <li><i>*Various paper and pencil activities</i></li> <li><i>*Student homework</i></li> <li><i>*Work Sampling System</i></li> </ul>
Projects	<p>Using concept of symmetry for a variety of art projects including, pumpkins, hearts, and snowflakes.</p> <ul style="list-style-type: none"> <li><i>*Initial Art – Use the Ellison Machine to cut out 6 each of child’s initials of first and last name. Students make a symmetrical picture on a solid 12” by 18” paper.</i></li> </ul>

First Grade Math  
 Strand V. Spatial Sense, Geometry and Measurement  
 V. B. Geometry

<i>Standard</i>	<i>Students will be able to use attributes of two and three-dimensional shapes to identify them and distinguish between them.</i>
<i>Benchmark</i>	<i>Sort and describe two and three-dimensional shapes according to their geometrical attributes.</i>
Learner Activities	<ul style="list-style-type: none"> <li>*Work with pattern-blocks and pattern-block templates</li> <li>*Work in large, small, and independent groups</li> <li>*Use a math journal and notebook</li> <li>*Participate in class discussions and activities</li> <li>*Various paper and pencil activities</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Model skills needed to identify two and three-dimensional shapes</li> <li>*Work with large, small, and independent groups</li> <li>*Flexible grouping for re-teaching purposes</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>*Everyday Mathematics math program</li> <li>*Student math notebooks</li> <li>*Variety of manipulative tools</li> <li>*Pattern blocks</li> <li>*Pattern block templates</li> <li>*Literature with a mathematical theme relating to shapes  <u>Sizes</u> by Jillian Powell  <u>Shapes</u> by Lynne Burgess</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>*Everyday Mathematics assessments</li> <li>*On going observations</li> <li>*Various paper and pencil activities</li> <li>*Student homework</li> <li>*Work Sampling System</li> </ul>
Technology	<ul style="list-style-type: none"> <li>*Math Blasters Jr.</li> <li>*Math Blasters</li> <li>*Millie's Math House</li> </ul>
Projects	Students participate in rotating stations to use pattern blocks, geoboards, and cubes to sort and describe shapes according to geometrical attributes.



First Grade Math  
 Strand V. Spatial Sense, Geometry and Measurement  
 V. C. Measurement

Outcomes	<i>Students will be able to measure length, time, and money using appropriate tools or units to solve real-world and mathematical problems.</i>
Benchmarks	<ul style="list-style-type: none"> <li>*Estimate and measure length and capacity using non-standard units</li> <li>*Tell time to the hour and half-hour on analog and digital clocks</li> <li>*Using a calendar, identify the date, day of the week, month, year, yesterday, today and tomorrow</li> </ul>
Learner Activities	<ul style="list-style-type: none"> <li>*Combine pennies, nickels or dimes to equal one dollar</li> <li>*Work with a variety of manipulative tools</li> <li>*Participate in large, small, and independent groups</li> <li>*Use a math journal and notebook</li> <li>*Various paper and pencil activities</li> <li>*Work with rulers measuring to the nearest inch and half-inch</li> <li>*Participate in classroom calendar activities</li> <li>*Practice counting money through various classroom and independent activities</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Model skills needed for measuring length, time and money</li> <li>*Model skills needed for classroom calendar activities</li> <li>*Flexible grouping for re-teaching purposes</li> <li>*Work with large, small, and independent groups</li> <li>*Provide a variety of manipulative tools for student use</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>*Everyday Mathematics math program</li> <li>*Variety of manipulative tools</li> <li>*Student math notebooks</li> <li>*Various paper and pencil activities</li> <li>*Rulers, tape measures, yard sticks</li> <li>*Literature with a mathematical theme relating to measurement               <ul style="list-style-type: none"> <li><u>Time for a Party</u> by Marjorie Newman</li> <li><u>Monster Math</u> by Grace Maccarone</li> <li><u>Chicken Soup with Rice</u> by Maurice Sendak</li> <li><u>Frog and Toad All Year</u> by Arnold Lobel</li> <li><u>The Snowy Day</u> by Ezra Keats</li> <li><u>What Time is It</u> by Rozanne Lanczak Williams</li> <li><u>Magic Money Box</u> by Rozanne Lanczak Williams</li> </ul> </li> <li>*Work Sampling System</li> <li>*Analog clock and digital clock</li> <li>*Judy Clocks (large and small)</li> <li>*Calendar bulletin board display (see Everyday Mathematics Teachers Lesson Guide Volume 1, Unit 1, Lesson 1.9)</li> <li>*Student money bag with: 25 pennies, 20 nickels, 10 dimes and 6 quarters</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>*Everyday Mathematics assessments</li> <li>*On going assessments</li> <li>*Various paper and pencil activities</li> <li>*Student homework</li> <li>*Work Sampling System</li> </ul>
Technology	<ul style="list-style-type: none"> <li>*Math Blasters Jr.</li> <li>*Math Blasters</li> <li>*Millie's Math House</li> <li>*Zoo Zillions</li> <li>*U.S. Mint: The Story of Money (VHS)</li> </ul>
Projects	<ul style="list-style-type: none"> <li>Calendar daily routine</li> <li>Measuring with feet, hands and fingers</li> </ul>

### Grade 1 Math Suggestions

- \*Give Pre- and Post Math Test in September and in May
- \*Prior to starting Everyday Mathematics give Unit 1 assessment
  - \*Kindergarten begins Grade 1 math in the spring
  - \*You may be able to skip Unit 1 or touch on a few lessons and move into Unit 2
- \*Introduce 1 digit addition (facts to 10) in September
- \*Introduce 1 digit subtraction (facts to 10) in January
- \*Introduce 2 digit addition and subtraction (Unit 7) by April

## Math – Second Grade

### Strand I. Mathematical reasoning

<i>Standard</i>	<p><i>Students will apply skills of mathematical representation, communication and reasoning throughout the remaining four content strands</i></p> <ul style="list-style-type: none"> <li>• <i>Number Sense, Computation and Operations</i></li> <li>• <i>Patterns, Functions and Algebra</i></li> <li>• <i>Data Analysis, Statistics and Probability</i></li> <li>• <i>Spatial Sense, Geometry and Measurement</i></li> </ul>
<i>Benchmarks</i>	<p><i>Student will be able to create and solve word problems using a variety of methods.</i>  <i>Students will estimate and check that the answers are reasonable</i>  <i>Students will be able to explain how they solved the problem.</i></p>
Learner Activities	<p>Write and illustrate word problems that will be used for math messages          Complete Everyday Math Journal pages          Participate in classroom discussions and activities          Work in small groups to explore and share findings          Complete homework and return it to school          Use manipulative tools to explore and solve problems</p>
Teaching Strategies	<p>Explicit instruction in large group settings          Facilitate small group instruction and activities          Use of literature for modeling and discussion          Use journal pages          Math message routine using teacher and student made word problems</p>
Materials Used	<p>Everyday Math series          Notebook and math message          Literature selections listed          Manipulative tools</p>
Assessments	<p>End of chapter Checking Progress tests          Observation of student          Journal pages          Classroom participation          Homework</p>
Technology	<p>Math Blasters          Math Blasters Jr.          Zoo Zillions          Math Munchers</p>
Projects	<p>Create classroom books (such as 100<sup>th</sup> day of school)          Calendar charting</p>

Second Grade Math

Strand II. Number sense, computation and operations

Strand II.A. Number Sense

Standards	<ol style="list-style-type: none"> <li>1. Student will understand place value, ways of representing whole numbers and relationships among whole numbers</li> <li>2. Student will understand the concept of unit fractions</li> </ol>
Benchmarks	<ol style="list-style-type: none"> <li>1. Read, write with numerals, compare and order numbers to 000</li> <li>2. Count by 2s, 5s, 10s from any given whole number</li> <li>3. Understand and demonstrate the significance of groups of 10 in the base 10 number system</li> <li>4. Represent numbers in equivalent ways</li> <li>5. Recognize, name, compare and represent unit fractions with drawings or concrete materials</li> </ol>
Learner Activities	<p>Work in Everyday Math journal</p> <p>Listen to related literature and work on extended activities</p> <p>Games</p> <p>Exploration activities in small and large groups</p> <p>Art activities</p> <p>Use manipulative tools to solve problems</p>
Teaching Strategies	<p>Explicit instruction and modeling for large group</p> <p>Flexible grouping models for exploration and learning</p> <p>Cross-curricular connections with art</p> <p>Use of Everyday Math journal pages</p> <p>Use games to teach or re-enforce concepts</p> <p>Use literature book listed</p>
Materials Used	<p>Everyday Math series</p> <p>Materials for games: dice, cards, fraction pieces</p> <p>Manipulative tools</p> <p>Literature books that extend learning (see list)</p>
Assessments	<p>End of chapter Checking Progress tests</p> <p>Observation</p> <p>Student notebooks and Journal pages</p> <p>Quick checks - timed tests?</p>
Technology	<p>Math Blasters</p> <p>Math Blasters Jr.</p> <p>Zoo Zillions</p> <p>Math Munchers</p>
Projects	<p>Daily Calendar routine</p>

Second Grade Math

Strand II. Number sense, computation and operations

Strand II. B. Computation and Operation

<i>Standard</i>	<i>Student will compute fluently and make reasonable estimates with whole numbers in real-world and mathematical problems</i>
<i>Benchmarks</i>	<ol style="list-style-type: none"> <li>1. Use one- and two-digit addition and subtraction to solve real-world and mathematical problems</li> <li>2. Demonstrate understanding of the relationships between odd and even numbers in addition and subtraction such as, <math>odd+odd=even</math> or <math>odd-even=odd</math></li> <li>3. Understand the concept of multiplication as repeated addition or in rectangular arrays.</li> <li>4. Complete journal pages and homework assignments following instruction</li> <li>5. Play games such as “Around the World” to increase speed and accuracy in computation</li> <li>6. Mental math activities</li> <li>7. Explorations</li> </ol>
Learner Activities	
Teaching Strategies	<p>Explicit instruction and modeling for large group</p> <p>Flexible small group explorations</p> <p>Using Everyday Math journal pages and homework</p> <p>Use frequent timed fact sheets with individual graphing</p> <p>Daily calendar and temperature graphing activities</p> <p>Math message (kids complete answer in notebook then discuss as a whole class or in small groups)</p>
Materials Used	<p>Everyday Math Series/Journal</p> <p>Math message notebook</p> <p>Graphs (temperature and fact sheet)</p> <p>Thermometer</p> <p>Games (cards and dice)</p> <p>Manipulative tools (noodles, counters, pennies)</p> <p>Literature selections to extend learning (see list)</p>
Assessments	<p>Journal pages</p> <p>Math Message entries</p> <p>Graphs (temperature and fact sheet)</p> <p>End of chapter, pre- and post-tests</p> <p>Observations</p>
Technology	<p>Math Blasters</p> <p>Math Blasters Jr.</p> <p>Zoo Zillions</p> <p>Math Munchers</p>
Projects	<p>Making Flash cards</p>

Second Grade Math  
 Strand II. Patterns, Functions, and Algebra  
 Strand II. B. Patterns, Functions

<i>Standards</i>	<i>Students will understand repeating, growing and shrinking patterns</i>
<i>Benchmarks</i>	<i>1. Student will recognize, create and extend repeating, growing and shrinking patterns using numbers, concrete objects and pictures.</i>
Learner Activities	2. Participate in activities (What's my rule) 3. Small group explorations (Creating or duplicating a pattern) 4. Complete Journal pages 5. Use patterns, color, shapes in art activities and extensions of lesson 6. Use number charts to find patterns 7. Listen to and identify patterns in literature
Teaching Strategies	-Explicit instruction and modeling for large group -Creating opportunities for small group explorations using patterns blocks and beads -Providing art extensions to help students apply math skills -Link pattern identification to literature -Guide students to find patterns in real world
Materials Used	-Everyday Math Series (Journal, minute math, explorations) -Pattern blocks, pattern cards, color cubes and other manipulative tools -Art supplies -Number charts (laminated with wipe off pen) -Literature that extends math lessons about patterns (see list)
Assessments	-Observation during large and small group time -Homework/Journal pages -Completed art work -Chapter assessments -Pre- and post-assessments
Technology	Computer program: Math Manipulators
Projects	"What's My Rule?" game Art activities that use patterns

Second Grade Math  
 Strand II. Patterns, Functions, and Algebra  
 Strand II. B. Algebra (Algebraic Thinking)

<i>Standard</i>	<i>Student will understand basic properties of addition and subtraction</i>
<i>Benchmarks</i>	<ol style="list-style-type: none"> <li>1. Describe what happens when zero is added to a number or subtracted from a number</li> <li>2. Generate equivalent expressions for a given number such as <math>24 = 17 + 7</math> or <math>24 + 100 - 76</math></li> <li>3. Determine the truth-value of an equation such as: true or false? <math>7 = 5 + 1</math></li> <li>4. Understand that adding two numbers in any order results in the same sum</li> <li>5. Understand that grouping numbers in multiple addend problems, in any order, results in the same sum</li> <li>6. Complete journal pages</li> <li>7. Work on timed fact sheets and individual graphing of progress</li> <li>8. Work with fact triangles</li> <li>9. Play games (card, flashcards, "Around the World")</li> <li>10. Small group explorations</li> <li>11. Listen to related literature selections and extend concepts through related activities</li> <li>12. Participate in number chart activities</li> <li>13. Solve number sentences/classroom books</li> <li>14. Complete homework</li> </ol>
<i>Learner Activities</i>	
<i>Teaching Strategies</i>	<ul style="list-style-type: none"> <li>-Explicit instruction and modeling for large group</li> <li>-Creating opportunities for small group explorations and instruction</li> <li>-Present use of manipulative tools to solve problems</li> <li>Use literature selections with learner activities</li> <li>-Model number chart and number line use</li> <li>-Use daily fact work and individual graphing</li> </ul>
<i>Materials Used</i>	<ul style="list-style-type: none"> <li>-Everyday math series (journal, math minute games)</li> <li>-Manipulative tools such as tiles and counting dinosaurs</li> <li>-Related literature (see list)</li> <li>-Number charts and markers</li> <li>-Number lines</li> </ul>
<i>Assessments</i>	<ul style="list-style-type: none"> <li>-Observation of group participation and discussion</li> <li>-Journal pages/Homework assignments</li> <li>-Math message notebook</li> <li>-Chapter tests</li> </ul>
<i>Technology</i>	Math Blasters computer program
<i>Projects</i>	Students to make individual sets of fact triangles

Second grade math  
 Strand IV. Data Analysis, Statistics and Probability  
 Strand IV. A. Data and statistics

<i>Standards</i>	<i>Students will collect and represent data in real-world and mathematical problems</i>
<b>Benchmarks</b>  <b>Learner Activities</b>	<i>Students will</i> 1. collect and record categorical data 2. create pictographs and real-object graphs to represent data 3. identify patterns in graphs or data sets 4. chart daily temperature and weather 5. complete journal pages 6. find and interpret data found in real-life experiences (i.e. newspapers, magazines, classroom) 7. create and interpret different kinds of graphs: bar, line, pie and frequency table 8. collect information about our class and graph it in different ways
<b>Teaching Strategies</b>	-Explicit instruction and modeling for large group -Creating opportunities for small group instruction and explorations -Display and use as many different data collection methods as possible across curriculum and throughout the day -Use graphing and data collecting frequently with class -Use math message as a daily activity for review/reinforcing learning -Request family data collecting through homework and sharing of examples found in real life.
<b>Materials Used</b>	-A variety of graphs -Home links (Everyday math homework pages) -Newspapers, magazines, charts -Everyday Math lessons -Journal assignments
<b>Assessments</b>	Observations of individual interviews and class participation Journal pages/homework Chapter test, pre- and post-test Graphs created by students
<b>Projects</b>	Ongoing graph projects such as “Temperature Charting”



Second Grade Math  
 Strand V. Spatial Sense, Geometry and Measurement  
 Strand V.A. Spatial Sense

<i>Standard</i>	<i>Students will understand the concept of symmetry and apply to simple drawings.</i>
<i>Benchmarks</i>	<i>Students will</i>
Learner Activities	<p>create symmetrical patterns and designs</p> <p>use manipulative tools such as pattern blocks to create patterns and designs</p> <p>draw or create symmetrical pictures such as butterflies</p> <p>find symmetrical items within the school/home</p> <p>draw or show lines of symmetry</p> <p>fold and cut symmetrical figures</p> <p>complete journal pages</p>
Teaching Strategies	<ul style="list-style-type: none"> <li>-Provide explicit instruction of symmetry</li> <li>-Provide exploration opportunities for students</li> <li>-Model symmetrical concepts</li> <li>-Use art activities to extend concept</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>-Everyday Math lessons and student journal</li> <li>-Pattern Blocks and design cards</li> <li>-Mirrors</li> <li>-Art supplies (paper, paint, scissors, ruler)</li> <li>-Magazines</li> </ul>
Assessments	<p>Observation of large and small group activities</p> <p>Journal pages</p> <p>Homework</p> <p>End of Chapter test</p> <p>Pictures of objects created by students</p>
Technology	<p>Computer programs:</p> <p>Math Munchers</p> <p>Kid Pix</p>
Projects	<p>Art projects that involve symmetry (making butterflies, blob art and so on)</p>

Second Grade Math  
 Strand V. Spatial Sense, Geometry and Measurement  
 Strand V.B. Geometry

<i>Standard</i>	<i>Students will use attributes of two- and three-dimensional shapes to identify them and distinguish between them.</i>
<i>Benchmarks</i>  <i>Learner</i> <i>Activities</i>	<i>Students will</i> <ol style="list-style-type: none"> <li>1. Investigate and predict the results of putting together and taking apart two- and three-dimensional shapes</li> <li>2. Sort, classify, compare and describe two- and three-dimensional objects according to their geometrical attributes</li> <li>3. create three-dimensional shapes with paper</li> <li>4. graph shapes by attributes</li> <li>5. draw and identify two-dimensional shapes</li> <li>6. explore attributes of shapes</li> <li>7. create new shapes using combinations of existing shapes</li> <li>8. listen to literature selections and participate in extended learner activities</li> <li>9. create a shape museum</li> <li>10. complete journal pages</li> <li>11. identify shapes in the real world (classroom, playground, magazines)</li> </ol>
<i>Teaching</i> <i>Strategies</i>	-Large group discussion, instruction and exploration -Small group exploration and activities -Homework to create a tie to the real world -Use of literature selections related to geometry (see list) -Journal pages and math messages
<i>Materials</i> <i>Used</i>	-Three-dimensional shapes -Attribute blocks -Graph paper -Literature selections ( <u>The Greedy Triangle</u> and others) -Everyday Math Series
<i>Assessments</i>	Observation of large and small group activities Anecdotal notes from student participation and discussion Journal pages/homework Math message response notebook Chapter test
<i>Technology</i>	Zoo Zillions Math Munchers
<i>Projects</i>	Hands-on exploration activities Art projects Creating a Shapes Museum

Second Grade Math  
 Strand V. Spatial Sense, Geometry and Measurement  
 Strand V.C. Measurement

<i>Standard</i>	<i>Students will measure length, time, temperature and money using appropriate tools and units to solve real-world and mathematical problems.</i>
<i>Benchmarks</i>	<i>Students will</i> <i>1. estimate standard and nonstandard linear measurements, then measure to check answer</i> <i>2. tell time to the quarter hour, half hour and hour using analog and digital clocks, distinguishing between a.m. and p.m.</i> <i>3. know relationships among units of time such as minutes in an hour, days in a month and weeks in a year.</i>
<b>Learner Activities</b>	<i>4. Read and write amounts of money using \$ for dollar, c for cents, and proper placement of the decimal point with amounts of money</i> <i>5. Combine coins to create amounts up to one dollar</i> 6. explore using measurement tools 7. create games, books and displays using manipulate tools correctly 8. apply measurement skills to daily living
<b>Teaching Strategies</b>	Model the use of measurement tools Provide real-life experiences through explorations and assigned activities Direct instruction to large and small groups Ongoing assessment and review Use Everyday Math lessons and activities Use measurement across curriculum
<b>Materials Used</b>	Money: paper and coins/money stamps Calculator Tape Measure Ruler Thermometer Clocks, analog and digital/stamps Use of literature selections related to measurement (see list) Everyday Math series
<b>Assessments</b>	Small group and individual authentic performance assessments Observations of use of tools Journal pages/math message entries/homework Pre- and post-tests
<b>Technology</b>	Zoo Zillions
<b>Projects</b>	“Estimate and Measure” project

## Everyday Math program – Monthly planner with outcomes for Grade 2

Because the Everyday Math program is a spiral program that depends on basic knowledge and introduction of routines, I begin the year with a review of first grade skills and/or introduction of terminology. I will speak with the first grade teacher to see how far they reached in the program and how they were grasping the concepts. Each year I dedicate more and more time to basic addition and subtraction skills that are not covered in the program right away.

As students come in the first one from each table gets their tub out and takes it to the table. We start the class by doing the calendar, place value (counting the number of school days) and graphing the weather for the day, as the year goes on this also includes estimating the temperature in degrees Fahrenheit and Celsius. I have a Math Message on the board as students come in. We read the Math Message together and they do what is asked, when they have completed it we go over it together.

### *September: Chapter 1*

I like to read A Day With No Math to the students on the first day: this gets them to think about how important math is and how it is in every part of our day.

- Review routines and terminology such as: Math Message, journal, math-box, home link, and introduce our calendar routine and weather graphing.
  - Review basic addition and subtraction. This is a strong focus for the first month. Without the basics it is harder to build to more advanced problems. I have found that the kids with strong basic fact skills catch on to the high level problems more quickly.
  - Review skills that were taught in first grade such as coin amounts, frames and arrows, and basic time.
  - Objectives for Chapter 1:
    - Review basic skills and routines
    - Introduce new routines and concepts.
- \*Math homework might begin 2-3 wks into the program.

### *October: Chapter 2*

- Learn new strategies for adding and subtracting.
- Introduce Fact Families and the inverse relationship between addition and subtraction.
- Introduce number stories.
- Explore weights, scales and equal groups.
- Introduce name collection boxes

### *November- Chapter 3*

- Review place value and writing 2 and 3 digit numbers.
- Counting by 5, 10 and 25.
- Identify and count coins start making change
- Tell time both on an analog and digital clock
- Create and use a graph and table.
- Frames and arrows routines.

### *December- Chapter 4*

- Solve and write change-to-more number stories.
- Solve parts and totals number stories.
- Read temperatures on a thermometer.
- Continue to make change and total coin values.
- Classify geometric shapes
- Introduce measurement and practice using.

\* If students have strong basic skill fact we would start addition and subtraction of three and four digit numbers.

### *January- Chapter 5*

- Identify geometric shapes and attributes.
- Introduce line segments, points and parallel line segments.
- Introduce 3-Dimensional

\*Hands on activities are important for this chapter.

### *February- Chapter 6*

- \*\*Three and four digit addition strategies. (I do not teach the partial sum method of addition. The students are just becoming comfortable with carrying and barrowing.)
- Comparison number stories.
- Introduce multiplication concepts and arrays.

\* I don't do the food pyramid unit because we cover that in health and the graphs are reviewed heavily with in the chapter.

### *March – Chapter 7 (a review chapter that can be gone through quickly)*

- Measurement and graphing
- Median value
- Using data to create graphs and charts

### *April – Chapter 8*

- Fractions (Gator Pie is a fun book to use with this unit. I buy Little Debbie Oatmeal Crème Pies then have them cut them into fractions to share with their table. This is a good way to get them to compare fraction sizes. When we have discussed the differences I give them each a pie of their own.)

### *May- Chapters 9-12*

- Review of concepts:
  1. Addition and subtraction
  2. Time
  3. Coin value and change
  4. Measurement
  5. Place-value
  6. Geometry
  7. Fractions, multiplication and division
  8. Introduce perimeter and area

Assessments:

- Checking progress assessments are done after each chapter.
- On going assessment is done through observation on explorations and math journals.
- Class participation and math message notebooks.

### **Literature used with Everyday Math**

1. A Day with No Math- This book is a fun way to start the year and to introduce the kids to how important math is and how math is everywhere!

### **Counting and Number Sense**

1. Fish Eyes-a book you can count on
2. Two of Everything- a Chinese folktale
3. Twelve Ways to Make Eleven
4. Each Orange Had Eight Slices:a counting book

### **Arrays**

1. Remainder of One-the story of one ant that keeps getting left behind
2. One Hundred Hungry Ants-

### **Shapes and Patterns**

1. A Cloak for a Dreamer – a story about a tailor with 3 sons and how they use different shapes to create beautiful cloaks.
2. The Art of Shapes for Children and Adults-this is a picture book showing different pictures and their shapes.
3. Lao Lao of Dragon Mountain-Chinese art of cutting shapes
4. Shapes, Shapes, Shapes- picture book of shapes
5. The Greedy Triangle
6. Grandfather Tangs Story- this is a book using Tangrams to tell a story. The kids enjoy creating the different animals along with the story. (I make up tangrams and picture packets for them to take home)

### **Standard and non-standard measurement**

1. How Big is a Foot
2. Counting on Frank
3. Twelve Snails to One Lizard-a tale of mischief and measurement

### **Fractions**

1. Gator Pie- this is a fun story about 2 gators that find a pie and need to figure out how to cut it when more gators keep coming.  
(I read the book with the kids, then give each table a Little Debbie cream pie to figure out how to cut into pieces at each table. We compare the size slices that tables with 2 people get vs. tables with 5 people. Then they all get a cake of their own to eat!)
2. Eating Fractions
3. Ed Emberleys Picture Pie

### **Miscellaneous**

1. Tortoise and the Hare
2. Pigs will be pigs
3. Alexander Who Used to be Rich Last Sunday
4. The King Chessboard
5. The Token Gift
6. Anno's Magic Seeds
7. A Mathematical Folktale
8. Sea Squares

## Grade Three Math

### Strand I: Mathematical Reasoning

<i>Standard</i>	<p><i>Student will apply skills of mathematical representation, communication, and reasoning throughout the four strands:</i></p> <p style="text-align: center;"><i>Number Sense, Computation, and Operations</i>  <i>Patterns, Functions, and Algebra</i>  <i>Data Analysis, Statistics, and Probability</i>  <i>Spatial Sense, Geometry, and Measurement</i></p>
<i>Benchmarks</i>	<ol style="list-style-type: none"> <li>1. <i>Communicate, reason, and represent situations mathematically</i></li> <li>2. <i>Solve problems by distinguishing relevant from irrelevant information</i></li> <li>3. <i>Sequence and prioritize information</i></li> <li>4. <i>Break a multi-step problem into simpler parts</i></li> <li>5. <i>Use estimates and context of the problem to evaluate if the answer is reasonable</i></li> <li>6. <i>Know when it is appropriate to estimate and when an exact answer with whole numbers, fractions or decimals is needed.</i></li> <li>7. <i>Express a written problem in suitable mathematical language, solve the problem and interpret the result in the original context.</i></li> <li>8. <i>Use pictures, numbers, or words to explain the validity of a solution and why a particular solution method is appropriate.</i></li> </ol>
<i>Teaching Strategies</i>	<ul style="list-style-type: none"> <li>*Direct instruction to large group using Everyday Mathematics program</li> <li>*Small groups to provide remediation or enrichment</li> </ul>
<i>Materials Used</i>	<ul style="list-style-type: none"> <li>*Everyday Mathematics Teacher’s Lesson Guides</li> <li>*Everyday Mathematics Student Journal 1 and 2</li> <li>*Toolkits from Scott Foresman</li> <li style="padding-left: 20px;"><u>Harriet’s Halloween Candy</u> by Nancy Carlson</li> <li style="padding-left: 20px;"><u>How did Numbers Begin?</u> By Sitomer and Sitomer</li> </ul>
<i>Assessments</i>	<ul style="list-style-type: none"> <li>*Observation by teachers</li> <li>*Anecdotal notes</li> <li>*Journal pages completed independently</li> <li>*Everyday Mathematics assessments</li> </ul>
<i>Technology</i>	<ul style="list-style-type: none"> <li>*Internet program on all concepts  <a href="http://www.aaamath.com/B/add211x5.htm">http://www.aaamath.com/B/add211x5.htm</a></li> <li>*Mac CDs <ul style="list-style-type: none"> <li>Mighty Math Calculating Crew</li> <li>Mighty Math Number Heroes</li> <li>Number Munchers Deluxe</li> </ul> </li> </ul>
<i>Projects</i>	<p>Year long projects: Sunrise and Sunset  High and Low temperature in the U.S.  (Estimate, check, chart, and use of logical reasoning)</p>

Math for Grade 3

Strand II: Number Sense, Computation and Operations

Strand IIA: Number Sense

<p><i>Standard IIA: Number Sense</i></p>	<p><i>Students will represent whole numbers in various ways to quantify information and to solve real-world and mathematical problems. Understand the concept of decimals and common fractions.</i></p>
<p><b>Benchmarks</b></p>	<ul style="list-style-type: none"> <li>*Read and write with numerals whole numbers to 9,999</li> <li>*Compare and order numbers to 9,999</li> <li>*Represent up to a 4-digit number in a variety of ways</li> <li>*Understand how fractions are related to the whole</li> <li>*Use pictures, models, and numbers to represent and write fractions</li> </ul>
<p><b>Teaching Strategies</b></p>	<ul style="list-style-type: none"> <li>*Direct instruction using Everyday Mathematics Teacher’s Lesson Guide               <ul style="list-style-type: none"> <li>Unit 1 Routines, Review, and Assessment                   <ul style="list-style-type: none"> <li>Lesson 1.6 “Equivalent Names”</li> <li>Lesson 1.7 “Finding Differences”</li> </ul> </li> <li>Unit 5 Place Value in Whole Numbers and Decimals                   <ul style="list-style-type: none"> <li>Lesson 5.1 “Place Value Through Ten-Thousands”</li> <li>Lesson 5.2 “Reading, Writing, and “Ordering Numbers”</li> <li>Lesson 5.8 “Tenths and Hundredths”</li> </ul> </li> </ul> </li> <li>*Use of games from the Student Reference Book to practice skills</li> <li>*Make place value book to enhance understanding</li> </ul>
<p><b>Materials Used</b></p>	<ul style="list-style-type: none"> <li>*Everyday Mathematics Teacher Lesson Guide</li> <li>*Everyday Mathematics Student Journal 1</li> <li>*Place value game mats, dice, markers</li> <li>*Base 10 blocks</li> <li>*Calculators</li> <li>*Number grids</li> <li>*Try-a-Tile cards for addition, subtraction, multiplication, and division</li> </ul>
<p><b>Assessments</b></p>	<ul style="list-style-type: none"> <li>*Teacher observations and anecdotal notes</li> <li>*Slate assessments-whole group</li> <li>*Journal pages completed independently</li> <li>*Everyday Mathematics assessments</li> <li>*Student self-assessments</li> <li><u>The Doorbell Rang</u> by Hutchins</li> </ul>
<p><b>Technology</b></p>	<ul style="list-style-type: none"> <li>*Internet- Addition and subtraction practice  <a href="http://www.teachingtreasures.com.au/maths/Math_more.html">http://www.teachingtreasures.com.au/maths/Math_more.html</a></li> <li>*Mac CDs               <ul style="list-style-type: none"> <li>Mighty Math Number Heroes                   <ul style="list-style-type: none"> <li>“Problem Solving and Logic”</li> <li>“Addition, Subtraction, Multiplication, and Division”</li> <li>“Fractions”</li> </ul> </li> <li>Mighty Math Calculating Crew                   <ul style="list-style-type: none"> <li>“Problem Solving and Reasoning”</li> <li>“Estimation and Rounding”</li> <li>“1-4 Digit Addition and Subtraction”</li> </ul> </li> <li>Math Munchers Deluxe</li> </ul> </li> </ul>



Math for Grade 3

Strand II: Number Sense, Computation and Operations

Strand IIB: Computation and Operation

<i>Standard</i>	<i>Student will compute fluently and make reasonable estimates with whole numbers in real-world and mathematical problems. Understand addition and subtraction and how they relate to one another. Understand the concepts of multiplication and division</i>
<i>Benchmarks</i>	<ol style="list-style-type: none"> <li>1. Add up to three whole numbers containing up to four digits each in real-world and mathematical problems</li> <li>2. Subtract three digit whole numbers in real-world and mathematical problems</li> <li>3. Use the inverse relationship of addition and subtraction to compute and check results</li> <li>4. Demonstrate mastery of basic addition facts to addends 0 through 9, without a calculator.</li> <li>5. Demonstrate mastery of subtraction facts that are inverses of the basic addition facts, without a calculator.</li> <li>6. Use concrete models to demonstrate understanding of the multiplication facts through 10</li> <li>7. Use models to solve multiplication and division problem and record solutions using number sentences</li> </ol>
<i>Teaching Strategies</i>	<ul style="list-style-type: none"> <li>*Direct instruction using Everyday Mathematics Teacher’s Lesson Guide               <ul style="list-style-type: none"> <li>Unit 2 Adding and Subtracting Whole Numbers</li> <li>Unit 4 Multiplication and Division</li> </ul> </li> <li>*Use of games from the Student Reference Book to practice skills</li> <li>*Make place value book to enhance understanding</li> <li>*Make Fact Triangles to study basic addition, subtraction, multiplication, and division facts</li> </ul>
<i>Materials Used</i>	<ul style="list-style-type: none"> <li>*Everyday Mathematics Teacher Lesson Guide</li> <li>*Everyday Mathematics Student Journal 1</li> <li>*Fact Triangles</li> <li>*Base 10 blocks</li> <li>*Calculators</li> <li>*Number grids</li> <li>*Try-a-Tile cards for addition, subtraction, multiplication, and division</li> </ul>
<i>Assessments</i>	<ul style="list-style-type: none"> <li>*Teacher observations and anecdotal notes</li> <li>*Slate assessments-whole group</li> <li>*Journal pages completed independently</li> <li>*Everyday Mathematics assessments</li> <li>*Student self-assessments</li> <li>*Timed basic facts checks</li> <li><u>Anno’s Mysterious Multiplying Jar</u> by Anno and Anno</li> </ul>
<i>Technology</i>	<ul style="list-style-type: none"> <li>*Internet- Addition and subtraction practice  <a href="http://www.teachingtreasures.com.au/maths/Math_more.html">http://www.teachingtreasures.com.au/maths/Math_more.html</a> </li> <li>*Mac CDs               <ul style="list-style-type: none"> <li>Mighty Math Number Heroes                   <ul style="list-style-type: none"> <li>“Problem Solving and Logic”</li> <li>“Addition, Subtraction, Multiplication, and Division”</li> <li>“Fractions”</li> </ul> </li> <li>Mighty Math Calculating Crew                   <ul style="list-style-type: none"> <li>“Problem Solving and Reasoning”</li> <li>“Estimation and Rounding”</li> <li>“1-4 Digit Addition and Subtraction”</li> </ul> </li> <li>Math Munchers Deluxe</li> </ul> </li> </ul>
<i>Projects</i>	Students make individual math fact triangles for independent study.

Third Grade Math

**Strand IIIA Patterns and Functions**

**Standard IIIB Algebra** (Algebraic Thinking)

Standard	<i>Students will understand and describe patterns in numbers and shapes.</i>
Benchmark	<p>Benchmarks for Patterns and Functions</p> <ul style="list-style-type: none"> <li>*Create and identify patterns in numbers and shapes</li> <li>*Explain how to extend patterns</li> </ul> <p>Benchmarks for Algebraic Thinking</p> <ul style="list-style-type: none"> <li>*Identify a missing number or operation in a simple arithmetic equation</li> <li>*Use the properties of addition and subtraction to order and group whole numbers</li> <li>*Complete simple computations with whole numbers</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>*Direct instruction using Everyday Mathematics Teacher’s Lesson Guide <ul style="list-style-type: none"> <li>Unit 1 Routines, Reviews, and Assessments <ul style="list-style-type: none"> <li>Lesson 1.11 “Frames and Arrows”</li> <li>Lesson 1.12 “The Length of the Day Project”</li> </ul> </li> <li>Unit 2 Adding and Subtracting Whole Numbers</li> <li>Unit 5 Place Value in Whole Numbers and Decimals <ul style="list-style-type: none"> <li>Lesson 5.1 “Enrichment-Exploring Patterns”</li> </ul> </li> <li>Unit 6 Geometry <ul style="list-style-type: none"> <li>Lesson 6.1 “Enrichment-Creating Curved Patterns”</li> </ul> </li> <li>Unit 7 Multiplication and Division <ul style="list-style-type: none"> <li>Lesson 7.1 “Patterns in Products”</li> </ul> </li> <li>Unit 9 Multiplication and Division <ul style="list-style-type: none"> <li>Lesson 9.4 “Enrichment-Using Count-By Patterns”</li> <li>Lesson 9.10 “Exploration E-Exploring Patterns by Filling Equilateral Triangles”</li> </ul> </li> </ul> </li> <li>*Exploration activities using pattern blocks to develop repeated patterns</li> <li>*Use calculator to explore patterns when adding or subtracting 1, 10, 100, or 1000</li> <li>*Provide opportunities for the students to create their own problem based on real-world situations</li> <li>*Use Try-a-Tile problem solving card to enhance their understanding of addition and subtraction of two digit numbers with regrouping</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>*Everyday Mathematics Teacher Lesson Guide</li> <li>*Everyday Mathematics Student Journals 1 and 2</li> <li>*Try-a-Tile Activity cards for two digit addition and subtraction</li> <li>*Pattern Blocks</li> <li>*Calculators</li> <li>*Table and graph for the length of day project</li> <li>*<u>Sam Johnson and the Blue Ribbon Quilt</u> by Ernst</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>*Teacher Observations and anecdotal notes</li> <li>*Journal pages completed independently</li> <li>*Everyday Mathematics assessments</li> <li>*Record sheets from Try-a-Tile</li> <li>*Accuracy of graphing of the length of the day</li> </ul>
Technology	<ul style="list-style-type: none"> <li>*Mac CD <ul style="list-style-type: none"> <li>Math Munchers Deluxe</li> </ul> </li> </ul>
Projects	<p>Exploration of patterns by playing games such as “Try a Tile” and “Pants and Socks”</p>

Grade Three Math  
 Strand IVA Data Analysis and Statistics  
 Strand IVB Probability

Standards	Standard IVA Data Analysis and Statistics <i>Represent and interpret data in real-world and mathematical problems</i> Standard IVB Probability <i>Explore the basic concept of probability</i>
Learner Activities	Benchmarks for Data Analysis and Statistics <i>*Read and interpret data from circle graphs using halves, thirds, and quarters</i> <i>*Collect data using observations or surveys</i> <i>*Represent collected data with pictographs and line plots with appropriate title and key</i> Benchmarks for Probability <i>*Use and understand the language of probability</i> <i>*Perform experiments with spinners that are divided equally and unequally</i> <i>*Collect and organize data for use in predicting outcomes</i> <i>*Play games to explore probability</i> <i>*Use random draws to predict outcomes</i>
Teaching Strategies	<i>*Direct instruction using Everyday Mathematics Teacher’s Lesson Guide</i> Unit 1 Routines, Review, and Assessment Lesson 1.5 “Analyzing and Displaying Data” Unit 3 Linear Measure and Area Lesson 3.8 “Diameter and Circumference”-data analysis Unit 11 Probability; End-of-Year Review Lesson 11.1 “Language of Chance Events” Lesson 11.2 “A Pattern-Block Toss Experiment” Lesson 11.3 “A Coin-Toss Experiment” Lesson 11.4 “Spinner Experiments” Lesson 11.5 “Designing Spinners” Lesson 11.8 “The Length-of Day Project Revisited” <i>*Small group activities using probability activities from <u>The I Hate Mathematics Book</u></i> “What’s the Chance of Being Invited to 2 Birthday Parties in 1 Day?” “The game of Pig” “Alphabetical Probability” <i>*Set up stations for children to experiment with probability during free time</i> <i>*Provide review exercises from <u>Math Warm-ups</u> by Karen Higgins</i> Lessons 66-93 <i>*Collect data on a variety of topics and model graphing information and provide opportunities for students to graph information independently</i>
Materials Used	<i>*Everyday Mathematics Teacher’s Lesson Guide</i> <i>*Everyday Mathematics Student Journals 1 and 2</i> <i>*<u>Moirá’s Birthday</u> by Robert Munsch</i> <i>*Student Reference Book</i> <i>*<u>Beginning Charts, Graphs, and Diagrams</u> by John and Patty Carratello</i> <i>*<u>Math Warm-ups</u> by Karen Higgins, Diane Price-Stone, and Scott McFadden</i> <i>*<u>Creating Nim Games</u> by Sherron Pfeiffer</i> <i>*<u>Family Math</u> by Jean Stenmark, Virginia Thompson, and Marilyn Hill</i> <i>*<u>Puddle Questions</u> by Joan Westley (Investigations 2 and 7)</i> <i>*<u>The I Hate Mathematics Book</u> by Marilyn Burns</i> <i>*Spinners</i>

	<ul style="list-style-type: none"> <li>*Dice</li> <li>*Pattern Blocks</li> <li>*Coins</li> <li>*Homelink <a href="http://aano.navy.mil/data/docs/RS_OneYear.html">http://aano.navy.mil/data/docs/RS_OneYear.html</a> (US Naval Observatory)</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>*Accuracy of the graphs created by the students</li> <li>*Written response explaining results of data collection</li> <li>*Student Journal pages completed independently</li> <li>*Teacher observations and anecdotal notes</li> <li>*Everyday Mathematics assessments</li> </ul>
Technology	<ul style="list-style-type: none"> <li>*Internet-Probability <a href="http://www.bbc.co.uk/education/mathfile/shockwave/games/fish.html">http://www.bbc.co.uk/education/mathfile/shockwave/games/fish.html</a></li> <li>*Internet-Sunrise/Sunset</li> <li>*Mac CD Mighty Math Number Heroes “Probability” “Interpreting Graphs and Charts”</li> </ul>
Projects	<ul style="list-style-type: none"> <li>Coin-Toss Experiment graphing</li> <li>Projects from <u>Puddle Questions</u> by Joan Westley</li> <li>The game of “Pig”</li> <li>Length of Day project</li> </ul>

Grade Three Math  
 Strand VA Spatial Sense  
 Strand VB Geometry

Standards	<p><u>Spatial Sense</u>  <i>Understand the concept of reflection symmetry as applied to geometric shapes.</i>  <i>Understand how representations of shapes are affected by various motions.</i></p> <p><u>Geometry</u>  <i>Classify shapes by specified attributes.</i>  <i>Identify simple shapes within complex shapes.</i></p>
Benchmarks	<p><u>Spatial Sense</u>  <i>Identify lines of symmetry in geometric shapes</i>  <i>Recognize and predict the position and orientation of a shape after a single flip, slide or turn.</i></p> <p><u>Geometry</u>  <i>*Identify, describe and classify two-dimensional shapes according to number and length of sides and kinds of angles</i>  <i>*Identify common two- and three-dimensional shapes that are components of more complex shapes</i></p>
Teaching Strategies	<p>*Direct instruction using Everyday Mathematics Teacher’s Lesson Guide        Unit 6 Geometry            Lesson 6.3 “Angles and Turns”            Lesson 6.4 “Triangles”            Lesson 6.5 “Quadrangles”            Lesson 6.6 “Polygons”            Lesson 6.7 “Drawing Angles”            Lesson 6.9 “Symmetry”            Lesson 6.10 “Exploring Congruence, Counting, and Decimals” (Exploration A)        *Set up exploration activities with symmetry using Family Math            “Simple Symmetries” on pages 184-186        *Engage students with the discovery of lines of symmetry using Image Reflector        *Have students create symmetrical images with an art project        *Set up exploration activities for students to draw their own shapes, to manipulate slides, flips, and turns, and to observe the position of the shape        *Small groups observe the attributes of three-dimensional geometric shapes and record the information discovered from the observations        *Create a Venn diagram and compare and contrast various geometric shapes</p>
Materials Used	<p>*Everyday Mathematics Teacher’s Lesson Guide        *Student Journal 1        *<u>Image Reflector Geometry</u> by Ernest and Marilyn Woodward        *Image Reflectors        *Straws and Twisties        *Three-dimensional models        *<u>Family Math</u> by Jean Stenmark, Virginia Thompson, and Ruth Cossey        *Homelinks        *<u>Flat Stanley</u> by Brown        *<u>Grandfather Tang’s Story</u> by Tompert</p>
Assessments	<p>*Teacher observation of group work and ability to verbalize information        *Accuracy of recorded data        *Everyday Mathematics assessments        *Student Journal pages completed independently        *Completed models of various geometric shapes</p>
Technology	<p>*Internet-Symmetry; Slide, Flip, and Turn            <a href="http://www.adrianbruce.com/symmetry/index.html#symlink">http://www.adrianbruce.com/symmetry/index.html#symlink</a>        *Mac CD:Mighty Math Calculating Crew and “3D Geometry”</p>
Projects	<p>Making two- and three-dimensional shapes using twisties and ties        Make a diametric calendar</p>

Third Grade Math  
 Strand V. Spatial Sense, Geometry and Measurement  
 Strand V.C. Measurement

Outcomes	<i>Measure and calculate length, time, weight, temperature, and money using appropriate tools and units to solve real-world and mathematical problems.</i>
Learner Activities	<ol style="list-style-type: none"> <li>1. <i>Select an appropriate tool to measure time, length, weight, and temperature</i></li> <li>2. <i>Identify the appropriate unit to measure time, length, weight, and temperature</i></li> <li>3. <i>Find the perimeter of a polygon with whole number sides</i></li> <li>4. <i>Know relationships between length in a system of measurement</i></li> <li>5. <i>Tell time to the minute using digital and analog time</i></li> <li>6. <i>Determine elapsed time to the minute</i></li> <li>7. <i>Make change using as few coins as possible up to a dollar</i></li> </ol>
Teaching Strategies	<p>*Direct instruction using Everyday Mathematics Teacher’s Lesson Guide</p> <p style="padding-left: 40px;">Unit 1 Routines, Reviews, and Assessments</p> <p style="padding-left: 80px;">Lesson 1.4 “Tools for Mathematics”</p> <p style="padding-left: 80px;">Lesson 1.9 “Money”</p> <p style="padding-left: 80px;">Lesson 1.10 “Solving Problems with Dollars and Cents”</p> <p style="padding-left: 80px;">Lesson 1.12 “The Length-of-Day Project”</p> <p style="padding-left: 40px;">Unit 2 Adding and Subtracting Whole Numbers</p> <p style="padding-left: 80px;">Lesson 2.6 “Comparing Number Stories” (Part 2)</p> <p style="padding-left: 40px;">Unit 3 Linear Measures and Area</p> <p style="padding-left: 40px;">Unit 10 Measurement and Data</p> <p style="padding-left: 80px;">Lesson 10.1 “Review: Length</p> <p style="padding-left: 80px;">Lesson 10.4 “Weight”</p> <p style="padding-left: 80px;">Lesson 10.6 “Capacity”</p> <p>*Use Family Math for problem solving activities</p> <p style="padding-left: 40px;">Chapter 4 “Measurement</p> <p style="padding-left: 40px;">Chapter 7 “Time and Money”</p> <p>*Use It’s About Time for enrichment and assessment activities</p> <p>*Form small groups to re-teach using the Judy clocks</p> <p>*Use Math Warm-ups as review</p>
Materials Used	<p>*Everyday Mathematics Teacher’s Lesson Guide</p> <p>*Student Journals 1 and 2</p> <p>*Toolkits (rulers, Judy clocks, calculators, templates)</p> <p>*Scales</p> <p>*Utensils for liquid measurement</p> <p>*<u>It’s About Time</u> by Robynne Eagan</p> <p>*<u>Family Math</u> by Jean Stenmark, Virginia Thompson, and Ruth Cossey</p> <p>*<u>Math Warm-ups</u> by Karen Higgins, Diane Price-Stone, and Scott McFadden (Lessons 52-65 Measurement)</p> <p>*Homelinks</p> <p>*Puddle Questions by Joan Westley (Number 1)</p> <p>*Large Judy clock</p> <p>*Student’s money sack (6 quarters, 10 dimes, 20 nickels, and 30 pennies)</p>
Assessments	<p>*Teacher observation of whole group responses</p> <p>*Student self-assessment by thumbs up or down</p> <p>*Everyday Mathematics assessments</p> <p>*Response to the Puddle Question (rubric)</p> <p>*Accuracy of measurement</p>
Technology	<p>*Internet- High and Low Temperatures  <a href="http://members.iinet.au/~jacob/worldtp.html">http://members.iinet.au/~jacob/worldtp.html</a></p> <p>*Mac CDs: Math Munchers Deluxe      Mighty Math Calculating Crew      “Money Transactions”</p>
Projects	<p>Wildflower Appreciation Day activities</p> <p>Measuring project of self, adult, room</p>

## Math for Grade 4

### Strand I. Mathematical Reasoning

<i>Standard</i>	<i>Students will apply skills of mathematical representation, communication and reasoning throughout the remaining four content strands: Number Sense, Computation, and Operations Patterns, Functions and Algebra Data Analysis, Statistics, and Probability Spatial Sense, Geometry, and Measurement</i>
<i>Benchmarks</i>	Students will be able to <ol style="list-style-type: none"><li>1. <i>Communicate, reason and represent situations mathematically</i></li><li>2. <i>Solve problems by distinguishing relevant from irrelevant information, sequencing and prioritizing information and breaking multi-step problems into simpler parts</i></li><li>3. <i>Evaluate the reasonableness of the solution by considering appropriate estimates and the context of the original problem</i></li><li>4. <i>Know when it is appropriate to estimate and when an exact answer with whole numbers, fractions or decimals is needed</i></li><li>5. <i>Express a written problem in suitable mathematical language, solve the problem and interpret the result in the original context</i></li><li>6. <i>Support mathematical results using pictures, numbers and words to explain why the steps in a solution are valid and why a particular solution method is appropriate</i></li></ol>
<i>Learner Activities</i>	<ul style="list-style-type: none"><li>• Use manipulative tools to solve and explain problems</li><li>• Work in large, small, and independent groups</li><li>• Solve problems in their math journal</li><li>• Participate in class discussions and activities</li><li>• Various classroom paper and pencil activities</li><li>• Complete homework activities and return them to school</li></ul>
<i>Teaching Strategies</i>	<ul style="list-style-type: none"><li>• Teacher modeling</li><li>• Flexible grouping for re-teaching purposes</li><li>• Provide a variety of manipulative tools for student use</li><li>• Monitor small, large and independent work</li><li>• Give feedback to students on their work</li><li>• Peer modeling</li></ul>
<i>Materials Used</i>	<ul style="list-style-type: none"><li>• Everyday Mathematics math program</li><li>• Everyday Mathematics student journals &amp; study links</li><li>• Literature appropriate to the topic: <u>Math Curse</u> by Jon Scieszka</li></ul>
<i>Assessments</i>	<ul style="list-style-type: none"><li>• Everyday Mathematics assessments</li><li>• Timed Multiplication Tests</li><li>• ITBS</li><li>• Student Homework</li></ul>

Math for Grade 4  
 Strand II. Number Sense, Computations and Operations  
 II.A. Number Sense

<u>Standard</u>	<p><i>-The student will represent whole numbers in various ways to quantify information and to solve real-world and mathematical problems</i></p> <p><i>-The student will understand the concept of fractions and decimals.</i></p>
<p><i>Benchmarks</i></p> <p>Learner Activities</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li>1. <i>Read and write whole numbers to 100,000 in numerals and words</i></li> <li>2. <i>Compare and order whole numbers</i></li> <li>3. <i>Use fractions and decimals to solve problems representing parts of a whole, parts of a set and division of whole numbers by whole numbers in real-world and mathematical problems</i></li> <li>4. <i>Use rounding and estimation with whole numbers to solve real-world and mathematical problems</i></li> </ol> <ol style="list-style-type: none"> <li>1. Use manipulative tools to solve and explain problems       <ul style="list-style-type: none"> <li>• Work in large, small, and independent groups</li> <li>• Solve problems in their math journal</li> <li>• Participate in class discussions and activities</li> <li>• Various classroom paper and pencil activities</li> <li>• Complete homework activities and return them to school</li> </ul> </li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>• Teacher modeling</li> <li>• Flexible grouping for re-teaching purposes</li> <li>• Provide a variety of manipulative tools for student use</li> <li>• Monitor small, large and independent work</li> <li>• Give feedback to students on their work</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>• Everyday Mathematics math program</li> <li>• Everyday Mathematics student journals &amp; study links</li> <li>• Games       <ul style="list-style-type: none"> <li>• Fraction Top-It</li> <li>• Number Top-It (for decimals)</li> <li>• Broken Calculator</li> </ul> </li> <li>• Literature appropriate to the topic:       <ul style="list-style-type: none"> <li>• <u>The Remainder of One</u> by Elinore Princes</li> <li>• <u>How Much is a Million?</u> by David Schwartz</li> <li>• <u>If You Made a Million</u> by David Schwartz</li> <li>• <u>Twelve Ways to Eat Eleven</u> by Eve Merriam</li> </ul> </li> </ul>
Assessments	<ul style="list-style-type: none"> <li>• Everyday Mathematics assessments</li> <li>• Timed Multiplication Tests</li> <li>• ITBS</li> <li>• Student Homework</li> </ul>



Math for Grade 4

Strand II. Number Sense, Computations and Operations

**II.B. Computation and Operations**

<p><i>Standard</i></p>	<p><i>-The student will compute fluently and make reasonable estimates with whole numbers in real-world and mathematical problems</i>  <i>-The student will understand the meanings of arithmetic operations and how they relate to one another</i></p>
<p><i>Benchmarks</i></p> <p>Learner Activities</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li>1. <i>Use addition and subtraction of multi-digit whole numbers to solve multi-step real-world and mathematical problems</i></li> <li>2. <i>Add up to three whole numbers containing up to three digits each, without a calculator</i></li> <li>3. <i>Subtract whole numbers containing up to three digits each, without a calculator</i></li> <li>4. <i>Demonstrate mastery of multiplication facts for the numbers 1-10, without a calculator</i></li> <li>5. <i>Use multiplication and division of whole numbers to solve simple real-world and mathematical problems</i></li> <li>6. <i>Use the inverse relationship of multiplication and division to compute and check results</i></li> <li>7. <i>Multiply single digit multiples of powers of ten such as 300x60 or 70x3, mentally</i></li> </ol> <ol style="list-style-type: none"> <li>2. Use manipulative tools to solve and explain problems             <ul style="list-style-type: none"> <li>• Work in large, small, and independent groups</li> <li>• Solve problems in their math journal</li> <li>• Participate in class discussions and activities</li> <li>• Various classroom paper and pencil activities</li> <li>• Complete homework activities and return them to school</li> </ul> </li> </ol>
<p>Teaching Strategies</p>	<ul style="list-style-type: none"> <li>• Teacher and peer modeling</li> <li>• Flexible grouping for re-teaching purposes</li> <li>• Provide a variety of manipulative tools for student use</li> <li>• Monitor small, large and independent work</li> <li>• Give feedback to students on their work</li> </ul>
<p>Materials Used</p>	<ul style="list-style-type: none"> <li>• Everyday Mathematics math program</li> <li>• Everyday Mathematics student journals &amp; study links</li> <li>• Games:             <ul style="list-style-type: none"> <li>Baseball Multiplication</li> <li>Beat the Calculator</li> <li>Broken Calculator</li> <li>Buzz</li> <li>Calculator 10,000</li> <li>Division Dash</li> <li>Multiplication Wrestling</li> </ul> </li> <li>• Literature appropriate to the topic:             <ul style="list-style-type: none"> <li><u>The Remainder of One</u> by Elinore Princez</li> <li><u>How Much is a Million?</u> by David Schwartz</li> <li><u>If You Made a Million</u> by David Schwartz</li> <li><u>Twelve Ways to Eat Eleven</u> by Eve Merriam</li> <li><u>Sea Squares</u> by Joy N. Nulme</li> </ul> </li> </ul>

Math for Fourth Grade  
 Strand III. Patterns, Functions and Algebra  
 III.A. Patterns and Functions

<u>Standards</u>	<i>The student will understand and describe patterns in tables and graphs</i>
Benchmarks	<ol style="list-style-type: none"> <li>1. <i>Students will examine and describe patterns in tables and graphs</i> <ul style="list-style-type: none"> <li>• Use manipulative tools to solve and explain problems</li> <li>• Work in large, small, and independent groups</li> <li>• Solve problems in their math journal</li> </ul> </li> </ol>
Learner Activities	<ul style="list-style-type: none"> <li>• Participate in class discussions and activities</li> <li>• Various classroom paper and pencil activities</li> <li>• Complete homework activities and return them to school</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>• Teacher modeling</li> <li>• Flexible grouping for r-teaching purposes</li> <li>• Provide a variety of manipulative tools for student use</li> <li>• Monitor small, large and independent work</li> <li>• Give feedback to students on their work</li> <li>• Exemplars</li> <li>• Peer modeling</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>• Everyday Mathematics math program</li> <li>• Pattern Blocks</li> <li>• Graph paper</li> <li>• Everyday Mathematics student journals &amp; study links</li> <li>• Literature appropriate to the topic:</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>• Everyday Mathematics assessments</li> <li>• Timed Multiplication Tests</li> <li>• ITBS</li> <li>• Student Homework</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Math Blasters</li> <li>• Graph computer program</li> </ul>

Math for Fourth Grade  
 Strand III. Patterns, Functions and Algebra  
 III.B. Algebra

Standards	<p><i>The student will apply arithmetic operations in the correct order to compute with whole numbers in real-world and mathematical problems.</i></p> <ul style="list-style-type: none"> <li>•</li> </ul>
Benchmarks	<p><i>Students will identify a missing number or operation in a simple arithmetic equation such as <math>3\_4=12</math> or <math>45/\_ =9</math></i></p> <p><i>Students will use the properties of arithmetic that involve ordering, grouping and the numbers 1 and 0, to do simple computations with whole numbers</i></p>
Learner Activities	<ul style="list-style-type: none"> <li>• Use manipulative tools to solve and explain problems</li> <li>• Work in large, small, and independent groups</li> <li>• Solve problems in their math journal</li> <li>• Participate in class discussions and activities</li> <li>• Various classroom paper and pencil activities</li> <li>• Complete homework activities and return them to school</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>• Teacher modeling</li> <li>• Flexible grouping for re-teaching purposes</li> <li>• Provide a variety of manipulative tools for student use</li> <li>• Monitor small, large and independent work</li> <li>• Give feedback to students on their work</li> <li>• Exemplars</li> <li>• Peer modeling</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>• Everyday Mathematics math program</li> <li>• Pattern Blocks</li> <li>• Graph paper</li> <li>• Everyday Mathematics student journals &amp; study links</li> <li>• Literature appropriate to the topic:  <u>Anno's Hat Trick</u> by Mitsumasa</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>• Everyday Mathematics assessments</li> <li>• Timed Multiplication Tests</li> <li>• ITBS</li> <li>• Student Homework</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Math Blasters</li> <li>• Graph computer program</li> </ul>

Math for Fourth Grade  
 Strand IV. Data Analysis, Statistics, and Probability  
 IV.A. Data and Statistics

<i>Standards</i>	<i>Student will represent and interpret data in real-world and mathematical problems</i>
<i>Benchmarks</i>	<p><i>Students collect data using observations or surveys and represent the data with tables and graphs with labeling</i></p> <p><i>Students will use mathematical language to describe a set of data</i></p>
Learner Activities	<ul style="list-style-type: none"> <li>• Use manipulative tools to solve and explain problems</li> <li>• Work in large, small, and independent groups</li> <li>• Solve problems in their math journal</li> <li>• Participate in class discussions and activities</li> <li>• Various classroom paper and pencil activities</li> <li>• Complete homework activities and return them to school</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>• Teacher modeling</li> <li>• Flexible grouping for re-teaching purposes</li> <li>• Provide a variety of manipulative tools for student use</li> <li>• Monitor small, large and independent work</li> <li>• Give feedback to students on their work</li> <li>• Peer modeling</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>• Everyday Mathematics math program</li> <li>• Everyday Mathematics student journals &amp; study links</li> <li>• Literature appropriate to the topic:</li> <li>• <u>The Top 10 of Everything/2000</u> by Russell Ash</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>• Everyday Mathematics assessments</li> <li>• ITBS</li> <li>• Student Homework</li> </ul>

Math for Fourth Grade

Strand IV. Data Analysis, Statistics, and Probability

IV.B. Probability

<i>Standard</i>	<i>Students will model simple probabilities by displaying the outcomes for real-world and mathematical problems</i>
<i>Benchmarks</i>	<i>Students will express outcomes of random experiments verbally and numerically such as 3 out of 4 or <math>\frac{3}{4}</math></i> <i>Students will use physical models and pictures to represent possible arrangements of two or three objects</i>
Learner Activities	<ul style="list-style-type: none"><li>• Use manipulative tools to solve and explain problems</li><li>• Work in large, small, and independent groups</li><li>• Solve problems in their math journal</li><li>• Participate in class discussions and activities</li><li>• Various classroom paper and pencil activities</li><li>• Complete homework activities and return them to school</li></ul>
Teaching Strategies	<ul style="list-style-type: none"><li>• Teacher modeling</li><li>• Flexible grouping for re-teaching purposes</li><li>• Provide a variety of manipulative tools for student use</li><li>• Monitor small, large and independent work</li><li>• Give feedback to students on their work</li><li>• Exemplars</li><li>• Peer modeling</li></ul>
Materials Used	<ul style="list-style-type: none"><li>• Everyday Mathematics math program</li><li>• Everyday Mathematics student journals &amp; study links</li><li>• Literature appropriate to the topic</li><li>• Games<ul style="list-style-type: none"><li>○ - Fraction/Percent Concentration</li></ul></li></ul>
Assessments	<ul style="list-style-type: none"><li>• Everyday Mathematics assessments</li><li>• ITBS</li><li>• Student Homework</li></ul>
Projects	<ul style="list-style-type: none"><li>• Probability Activities from the Every Day Math Series</li></ul>

Math for Grade Four  
 Strand V. Spatial Sense, Geometry and Measurement  
 V.A. Spatial Sense

<i>Standard</i>	<i>Students will understand spatial relationships and describe them using language such as congruent, similar, parallel and perpendicular.</i>
<i>Benchmarks</i>  Learner Activities	<ol style="list-style-type: none"> <li>1. <i>Students will be able to identify congruent and similar figures</i></li> <li>2. <i>Student will identify parallel and perpendicular lines</i> <ul style="list-style-type: none"> <li>• Use manipulative tools to solve and explain problems</li> <li>• Work in large, small, and independent groups</li> <li>• Solve problems in their math journal</li> <li>• Participate in class discussions and activities</li> <li>• Various classroom paper and pencil activities</li> <li>• Complete homework activities and return them to school</li> </ul> </li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>• Teacher modeling</li> <li>• Flexible grouping for re-teaching purposes</li> <li>• Provide a variety of manipulative tools for student use</li> <li>• Monitor small, large and independent work</li> <li>• Give feedback to students on their work</li> <li>• Peer modeling</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>• Everyday Mathematics math program</li> <li>• Everyday Mathematics student journals &amp; study links</li> <li>• Straws and Twist Ties</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>• Everyday Mathematics assessments</li> <li>• ITBS</li> <li>• Student Homework</li> </ul>

Math for Grade Four  
 Strand V. Spatial Sense, Geometry and Measurement  
 V.B. Geometry

<i>Standard</i>	<i>Student will use attributes of two- and three-dimensional shapes to identify them and distinguish between them</i>
<p>Benchmarks</p> <p>Learner Activities</p>	<p><i>Students will be able to:</i></p> <ol style="list-style-type: none"> <li>1. <i>Identify, describe, and classify two- and three-dimensional by their attributes.</i></li> <li>2. <i>Identify right angles in geometric figures or in appropriate objects and determine whether other angles are greater or less than a right angle</i></li> <li>3. Use manipulative tools to solve and explain problems</li> <li>4. Work in large, small, and independent groups</li> <li>5. Solve problems in their math journal</li> <li>6. Participate in class discussions and activities</li> <li>7. Various classroom paper and pencil activities</li> <li>8. Complete homework activities and return them to school</li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>• Teacher modeling</li> <li>• Flexible grouping for re-teaching purposes</li> <li>• Provide a variety of manipulative tools for student use</li> <li>• Monitor small, large and independent work</li> <li>• Give feedback to students on their work</li> <li>• Exemplars</li> <li>• Peer modeling</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>• Everyday Mathematics math program</li> <li>• Everyday Mathematics student journals &amp; study links</li> <li>• Literature appropriate to the topic:             <ul style="list-style-type: none"> <li>○ <u>Shapes, Shapes</u> by Tana Hoban</li> <li>○ <u>The Art of Shapes</u> by Margaret Steele</li> <li>○ <u>The Greedy Triangle</u> by Marilyn Burns</li> </ul> </li> </ul>
Assessments	<ul style="list-style-type: none"> <li>• Everyday Mathematics assessments</li> <li>• ITBS</li> <li>• Student Homework</li> </ul>

Math for Grade Four  
 Strand V. Spatial Sense, Geometry and Measurement  
 V.C. Measurement

Standards	<p><b><i>Student will measure and calculate length and area using appropriate tools and units to solve real-world and mathematical problems.</i></b>  <i>Students will make change with money</i></p>
<p>Benchmarks</p> <p>Learner Activities</p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Find the area and perimeter of a rectangle by measuring, using a grid, or using a formula, and label the answer with appropriate units</li> <li>2. Understand that rectangles with the same area can have different perimeters and that rectangles with the same perimeter can have e different areas</li> <li>3. Make change using as few coins and bills as possible up to \$20</li> </ol> <ul style="list-style-type: none"> <li>• Use manipulative tools to solve and explain problems</li> <li>• Work in large, small, and independent groups</li> <li>• Solve problems in their math journal</li> <li>• Participate in class discussions and activities</li> <li>• Various classroom paper and pencil activities</li> <li>• Complete homework activities and return them to school</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>• Teacher modeling</li> <li>• Flexible grouping for re-teaching purposes</li> <li>• Provide a variety of manipulative tools for student use</li> <li>• Monitor small, large and independent work</li> <li>• Give feedback to students on their work</li> <li>• Peer modeling</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>• Everyday Mathematics math program</li> <li>• Everyday Mathematics student journals &amp; study links</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>• Everyday Mathematics assessments</li> <li>• ITBS</li> <li>• Student Homework</li> </ul>



## Math for Grade 5

### Strand I: Mathematical Reasoning

Standard	<p><i>Apply skills of mathematical representation, communication, and reasoning throughout the remaining four content strands:</i></p> <p><i>Number Sense, Computation, and Operations</i></p> <p><i>Patterns, Functions and Algebra</i></p> <p><i>Data Analysis, Statistics, and Probability</i></p> <p><i>Spatial Sense, Geometry, and Measurement</i></p>
Benchmarks	<ol style="list-style-type: none"> <li>1. <i>Communicate, reason and represent situations mathematically.</i></li> <li>2. <i>Solve problems by distinguishing relevant from irrelevant information, sequencing and prioritizing information and breaking multi-step problems into simpler parts</i></li> <li>3. <i>Use estimates and context of the problem to evaluate if an answer is reasonable</i></li> <li>4. <i>Determine whether an estimate is appropriate or if an exact answer with whole numbers, fractions of decimals is needed</i></li> <li>5. <i>Express a written problem in suitable mathematical language, solve the problem and interpret the result in the original context</i></li> <li>6. <i>Use pictures, numbers, and words to validate solutions</i></li> <li>7. <i>Organize, record and communicate math ideas clearly</i></li> </ol>
Teaching Strategies	<ul style="list-style-type: none"> <li>•Direct instruction and teacher modeling</li> <li>•Small group activities for remediation or enrichment</li> <li>•Cooperative grouping</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>•Everyday Mathematics program</li> <li>•Everyday Mathematics student journals and study links</li> <li>•Manipulative tools:             <ul style="list-style-type: none"> <li>geometry template</li> <li>pattern blocks</li> <li>dot papers</li> <li>ruler, protractor, compass</li> <li>fraction pieces and fraction sticks</li> <li>counters</li> <li>number line</li> <li>calculators</li> </ul> </li> <li>Literature Selections:             <ul style="list-style-type: none"> <li>“Arithmetic” by Carl Sandberg</li> </ul> </li> </ul>
Assessments	<ul style="list-style-type: none"> <li>•Observation by teachers</li> <li>•Independent work</li> <li>•Everyday Mathematics assessments</li> </ul>

Math for Grade 5

Strand II: Number Sense, Computation and Operations

IIA: Number Sense

<i>Standard</i>	<i>Student will represent Fractions, decimals and whole numbers in a variety of ways, to quantify information and to solve real-world and mathematical problems. Understanding the concept of negative numbers.</i>
<i>Benchmarks</i>	<p><i>Students will</i></p> <ol style="list-style-type: none"> <li><i>1. Read and write numbers up to three decimal places</i></li> <li><i>2. Represent and compare positive and negative integers symbolically and on the number line and use them to solve problems.</i></li> <li><i>3. Recognize equivalent common fractions, decimals and percentages.</i></li> <li><i>4. Use a variety of estimation strategies and decide when an estimated solution is appropriate</i></li> </ol>
<i>Teaching Strategies</i>	<ul style="list-style-type: none"> <li>•Direct instruction and teacher modeling</li> <li>•Small group activities for remediation or enrichment</li> <li>•Cooperative grouping</li> </ul>
<i>Materials Used</i>	<ul style="list-style-type: none"> <li>-Everyday Mathematics program</li> <li>-Everyday Mathematics student journals and study links</li> <li>-Literature Selections               <ul style="list-style-type: none"> <li><u>How Much is a Million</u> by David M. Schwartz</li> <li><u>Counting on Frank</u> by Rod Clement</li> </ul> </li> <li>-Manipulative tools               <ul style="list-style-type: none"> <li>geometry template</li> <li>pattern blocks</li> <li>dot papers</li> <li>ruler, protractor, compass</li> <li>fraction pieces and fraction sticks</li> <li>counters</li> <li>number line</li> <li>calculators</li> </ul> </li> </ul>
<i>Assessments</i>	<ul style="list-style-type: none"> <li>•Observation by teachers</li> <li>•Independent work</li> <li>•Everyday Mathematics assessments</li> </ul>
<i>Projects</i>	\$1,000,000 Project

Math for Grade 5

Strand II: Number Sense, Computation and Operations

II B. Computation and Operations

<i>Standard</i>	<i>Students will</i> 1. <i>Compute fluently and make reasonable estimates with fractions, decimals, and whole numbers, in real-world and mathematical problems.</i> 2. <i>Students will understand the meanings of arithmetic operations and how they relate to one another.</i>
<i>Benchmarks</i>	<ul style="list-style-type: none"><li>•<i>Use addition, subtraction, multiplication, and division of multi-digit whole numbers to solve multi-step problems</i></li><li>•<i>Add and subtract numbers with up to two decimal places</i></li><li>•<i>Add and subtract, without a calculator, numbers containing five digits such as 546.23-84.1</i></li><li>•<i>Multiply, without a calculator, a three-digit whole number or decimal by a one-digit whole number</i></li><li>•<i>Divide, without a calculator, a three-digit whole number or decimal by a one-digit whole number or decimal</i></li><li>•<i>Model simple problems involving the addition and subtraction of common fractions and mixed numbers as well as fractions where the common denominator equals one of the denominators</i></li><li>•<i>Interpret percents as a part of a hundred</i></li></ul>
<i>Teaching Strategies</i>	<ul style="list-style-type: none"><li>•<i>Direct instruction and teacher modeling</i></li><li>•<i>Small group activities for remediation or enrichment</i></li><li>•<i>Cooperative grouping</i></li></ul>
<i>Materials Used</i>	<ul style="list-style-type: none"><li>•<i>Everyday Mathematics program</i></li><li>•<i>Everyday Mathematics student journals and study links</i></li><li>•<i>Manipulative tools</i><ul style="list-style-type: none"><li>counters</li><li>number line</li><li>calculators</li></ul></li></ul>
<i>Assessments</i>	<ul style="list-style-type: none"><li>•<i>Observation by teachers</i></li><li>•<i>Independent work</i></li><li>•<i>Everyday Mathematics assessments</i></li></ul>
<i>Projects</i>	<i>\$1,000,000 project</i>

Math for Grade 5

Strand III: Patterns, Functions and Algebra

III. A. Patterns and Functions

<i>Standard</i>	<i>Students will understand and describe patterns in numbers, shapes, tables and graphs.</i>
<i>Benchmarks</i>	<i>Students will identify patterns in numbers, shapes, tables and graphs and explain how to extend those patterns.</i>
Teaching Strategies	<ul style="list-style-type: none"><li>•Direct instruction and teacher modeling</li><li>•Small group activities for remediation or enrichment</li><li>•Cooperative grouping</li></ul>
Materials Used	<ul style="list-style-type: none"><li>•Everyday Mathematics program</li><li>•Everyday Mathematics student journals and study links</li><li>•Manipulative tools:<ul style="list-style-type: none"><li>pattern blocks</li><li>calculators</li><li>geometry template</li></ul></li></ul>
Assessments	Observation by teachers Independent work Everyday Mathematics assessments

Math for Grade 5  
 Strand III: Patterns, Functions and Algebra  
 III. B. Algebra

<i>Standard</i>	<i>Student will represent mathematical relationships using equations</i>
<i>Benchmark</i>	<i>Students will evaluate numeric expressions in real-world and mathematical problems</i>
Teaching Strategies	<ul style="list-style-type: none"> <li>•Direct instruction and teacher modeling</li> <li>•Small group activities for remediation or enrichment</li> <li>•Cooperative grouping</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>•Everyday Mathematics program</li> <li>•Everyday Mathematics student journals and study links</li> <li>•Manipulative tools                pattern blocks                calculators</li> </ul>
Assessments	Observation by teachers Independent work Everyday Mathematics assessments

Math for Grade 5  
 Strand IV: Data Analysis, Statistics and Probability  
 IV. A. Data and Statistics

<i>Standard</i>	<i>Students will represent data and use various measures associated with data to draw conclusions and identify trends.</i>
<i>Benchmarks</i>	<i>Students will:</i> <ul style="list-style-type: none"> <li>•Determine whether or not a given graph matches a given data set</li> <li>•Use Fractions and percentages to compare data sets</li> <li>•Collect data using measurements, surveys or experiments and represent the data with labeled tables and graphs</li> <li>•Find mean, mode median, and range of a data set</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>•Direct instruction and teacher modeling</li> <li>•Small group activities for remediation or enrichment</li> <li>•Cooperative grouping</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>•Everyday Mathematics program</li> <li>•Everyday Mathematics student journals and study links</li> <li>•Manipulative tools                geometry templates                calculators                Percent circle</li> </ul>
Assessments	Observation by teachers Independent work Everyday Mathematics assessments

Math for Grade 5  
 Strand IV: Data Analysis, Statistics and Probability  
 IV. B. Probability

<i>Outcomes</i>	<i>Students will model simple probabilities by displaying the outcomes of real-world and mathematical problems.</i>
<i>Benchmark</i>	<i>Students will represent all possible outcomes for a simple probability problem with tables and grids, and draw conclusions from the results</i>
Teaching Strategies	<ul style="list-style-type: none"> <li>•Direct instruction and teacher modeling</li> <li>•Small group activities for remediation or enrichment</li> <li>•Cooperative grouping</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>•Everyday Mathematics program</li> <li>•Everyday Mathematics student journals and study links</li> <li>•Manipulative tools               <ul style="list-style-type: none"> <li>coins</li> <li>dice</li> <li>thumbtacks</li> <li>calculators</li> <li>M&amp;Ms</li> </ul> </li> </ul>
Assessments	<ul style="list-style-type: none"> <li>Observation by teachers</li> <li>Independent work</li> <li>Everyday Mathematics assessments</li> </ul>

Math for Grade 5  
 Strand V: Spatial Sense, Geometry, and Measurement  
 V. A. Spatial Sense

<i>Standard</i>	<i>Student will understand the concepts of reflection and rotation symmetry as applied to two-dimensional shapes.</i>
<i>Benchmark</i>	<i>Student will identify reflection and rotation symmetries in two-dimensional shapes and designs.</i>
Teaching Strategies	<ul style="list-style-type: none"> <li>•Direct instruction and teacher modeling</li> <li>•Small group activities for remediation or enrichment</li> <li>•Cooperative grouping</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>•Everyday Mathematics program</li> <li>•Everyday Mathematics student journals and study links</li> <li>•Manipulative tools               <ul style="list-style-type: none"> <li>geometry template</li> <li>polygons</li> <li>pattern blocks</li> </ul> </li> <li><u>The Greedy Triangle</u> by Marilyn Burns</li> <li><u>Grandfather Tang's Story</u> by Ann Tompert</li> </ul>
Assessments	<ul style="list-style-type: none"> <li>•Observation by teachers</li> <li>•Independent work</li> <li>•Everyday Mathematics assessments</li> </ul>

Math for Grade 5  
 Strand V: Spatial Sense, Geometry, and Measurement  
 V. B. Geometry

<i>Standard</i>	<i>Student will sort, classify, compare and describe two- and three-dimensional objects.</i>
<i>Benchmark</i>	<i>Student will</i> <ul style="list-style-type: none"> <li>•Sort three-dimensional objects according to number and shape of faces, number of edges and vertices</li> <li>•Classify, compare, and identify acute, right and obtuse angles</li> <li>•Classify polygons as regular or irregular</li> <li>•Know sum of the angles in triangles and quadrilaterals</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>•Direct instruction and teacher modeling</li> <li>•Small group activities for remediation or enrichment</li> <li>•Cooperative grouping</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>•Everyday Mathematics program</li> <li>•Everyday Mathematics student journals and study links</li> <li>•Manipulative tools               <ul style="list-style-type: none"> <li>geometry template</li> <li>polygons</li> <li>pattern blocks</li> <li>Polyhedrons</li> </ul> </li> </ul> <p><u>A Cloak for a Dreamer</u> by Aileen Friedman</p>
Assessments	<ul style="list-style-type: none"> <li>•Observation by teachers</li> <li>•Independent work</li> <li>•Everyday Mathematics assessments</li> </ul>

Math for Grade 5  
 Strand V: Spatial Sense, Geometry, and Measurement  
 V.C. Measurement

<i>Standard</i>	<i>Student will measure and calculate length, area and capacity using appropriate tools and units to solve real-world and mathematical problems.</i>
<i>Benchmark</i>	<i>Student will:</i> <ul style="list-style-type: none"> <li>•Find the area and perimeter of a triangle by measuring or using a grid, and label the answer with appropriate units</li> <li>•Use two-dimensional pattern of a cube or rectangular box to compute the surface area</li> <li>•Select and apply the appropriate units and tools to measure perimeter, area and capacity</li> </ul>
Teaching Strategies	<ul style="list-style-type: none"> <li>•Direct instruction and teacher modeling</li> <li>•Small group activities for remediation or enrichment</li> <li>•Cooperative grouping</li> </ul>
Materials Used	<ul style="list-style-type: none"> <li>•Everyday Mathematics program</li> <li>•Everyday Mathematics student journals and study links</li> <li>•Manipulative tools               <ul style="list-style-type: none"> <li>compass</li> <li>polyhedrons</li> <li>blocks</li> <li>ruler</li> </ul> </li> </ul>

	tape measure geometry template
Assessments	•Observation by teachers •Independent work •Everyday Mathematics assessments

**Fifth Grade Math Suggestions:**

The following is a list of the concepts that will not be covered in the first journal (units 1-6) of the Everyday Math Program.

These concepts are part of the Minnesota State Standards and will need to be addressed if you can not get further than the first 6 units

1. Positive and Negative numbers
2. Patterns and functions will be weak and students will need more practice graphing function and patterns
3. Graphing in general could be beefed up as the students are required to do this on the MCA tests
4. Reflection and symmetry
5. Three-dimensional objects
6. Perimeter, area and volume