

**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b> Third Grade
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**Essential Questions: HOW DO I DEMONSTRATE THE RELATIONSHIP BETWEEN NUMBERS, QUANTITIES, & PLACE VALUE FOR WHOLE NUMBERS UP TO 10,000?**

Calendar	Strand/Standard/ Benchmark	Performance Standard	Suggested Student Activities/Assessments	Resources/Materials																		
<b>1<sup>st</sup> Nine Weeks</b>	<p><b>Strand I: NUMBER AND OPERATIONS</b> <b>Standard:</b> Students will understand numerical concepts and mathematical operations.</p> <p><b>Benchmark: A</b> Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</p> <p><b>Benchmark: B</b> Understands the meanings of operations and how they relate to one another</p>	<p><b>Place Value</b> 1. Exhibit an understanding of the place value structure of the base-ten number system by:</p> <ul style="list-style-type: none"> <li>• reading, modeling, writing, and interpreting whole numbers up to 10,000. <b>Mastery/Review hundreds/Introduce Millions</b></li> <li>• comparing and ordering numbers up to 1,000</li> <li>• Recognizing the position of a given number in the base ten number system and its relationship to benchmark number such as 50, 100, 500. <b>Review</b></li> </ul> <p>2. Utilize a variety of contexts and models to skip count to 1000 using hundred charts or strips. <b>Review</b></p> <p>2. Find the sum or difference of two whole numbers between 0 and 10,000. <b>Review 2 digit numbers and master 3 digit numbers</b></p>	<p>PLACE VALUE BENCHMARK A</p> <ul style="list-style-type: none"> <li>• Given five digit cards, in a group of five, students will arrange themselves to form a 5-digit number when prompted by the teacher. (<b>Prob. sol</b>)</li> <li>• Students will read and write five-digit numbers in word form, expanded form, and standard form. (<b>Prob. Sol.</b>)</li> <li>• Students will write five-digit numerals that are verbally stated or written in words. (<b>Prob. Sol.</b>)</li> <li>• Students arrange numbers to make the largest or smallest number possible given three digit cards and classify them as even or odd. (<b>Prob. sol.</b>)</li> <li>• Students will exhibit their knowledge of terms greater than, equal to by having students take turns choosing two numbers and a symbol to form a comparison and then reading their comparisons to each other. (<b>Prob. sol.</b>) (<b>Comm.</b>)</li> </ul> <p><b>Assessment:</b> Hands-on Standards ETA Cuisenaire Lesson 1: Writing Numbers in Different Forms</p> <p>PLACE VALUE BENCHMARK B</p> <ul style="list-style-type: none"> <li>• Students will practice using benchmarks of 10, 100, or 500, to estimate problems 1-5 (Refer to Harcourt Math, Transparency 3.1) (<b>Prob. Sol.</b>)</li> <li>• Hands-on Standards ETA Cuisenaire, Lesson 2: Comparing &amp; Ordering Numbers (<b>R &amp; P</b>) (<b>Comm.</b>)</li> <li>• Students will analyze a data table to formulate their own questions. Refer to chart on Resource/Material list. (<b>R &amp; P</b>) (<b>Comm.</b>)</li> </ul> <p><b>Assessment:</b> Submit questions for teacher evaluation</p> <p><b>Baldrige:</b> Beginning of 1<sup>st</sup> 9wks students take baseline assessment for standard 2-3 digit addition with or without regrouping. Students take five minute 100 fact test. Students take post test for both assessments at the end of 1<sup>st</sup> 9wks.</p> <ul style="list-style-type: none"> <li>• Rounding – Sharon Gatti-Carson activities</li> <li>• Using 3 &amp; 4-digit numbers, students find 10 more/less, 100 more/less</li> <li>• Students will identify benchmark numbers &amp; how they are used in estimating.</li> </ul>	<p>Teacher prepared cards <a href="http://www.321know.com/g3_21cx1.htm">http://www.321know.com/g3_21cx1.htm</a> (Interactive website for reinforcement in place value)</p> <p>Digit cards and comparison symbol</p> <p><b>Suggested Literature for place value:</b> <i>The King's Commissioners</i> Author Aileen Friedman</p> <p>Hands-on Standard ETA Cuisenaire Numbers &amp; Operations Lessons 1, 2, 3, 4</p> <p>Harcourt Math New Mexico, Transparency 3.1</p> <p>Harcourt 3<sup>rd</sup> grade Math New Mexico P#12B Top Land Speeds of Animals</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Animal</th> <th>Speed/mph</th> </tr> </thead> <tbody> <tr><td>kangaroo</td><td>43</td></tr> <tr><td>human</td><td>28</td></tr> <tr><td>rabbit</td><td>35</td></tr> <tr><td>Quarter horse</td><td>147</td></tr> <tr><td>greyhound</td><td>39</td></tr> <tr><td>gray fox</td><td>42</td></tr> <tr><td>cheetah</td><td>170</td></tr> <tr><td>squirrel</td><td>20</td></tr> </tbody> </table>	Animal	Speed/mph	kangaroo	43	human	28	rabbit	35	Quarter horse	147	greyhound	39	gray fox	42	cheetah	170	squirrel	20
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<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b>	Third Grade
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<b>Essential Questions: What strategies can be used to solve for unknowns in algebraic equations? When are algebraic and numeric expressions used?</b>				
Calendar	Strand/Standard/ Benchmark	Performance Standard	Suggested Student Activities/Assessments	Resources/Materials
<b>1<sup>st</sup> Nine Weeks</b>	<b>Strand II: ALGEBRA</b> <b>Standard:</b> Students will understand algebraic concepts and applications. <b>Benchmark: C</b> Use mathematical models to represent and understand quantitative relationships.	1. Model problem situations with objects and use representations such as pictures, graphs, tables, and equations to draw conclusions. <i>Review and extend graphs, tables, and equations</i>	ALGEBRA BENCHMARK C <ul style="list-style-type: none"> <li>• Using graphs &amp; tables provided by the teacher, the student will utilize data to draw conclusions &amp; construct equations that go with the appropriate graph or table. <b>(R &amp; P) (Comm.)</b> <b>Assessment:</b> students will submit journal for evaluation.</li> <li>• Students count quarters until teacher gives stop signal. Then they count dimes until the signal, nickels, etc. <b>Assessment:</b> Students count collections of coins for the teacher on a one-on-one basis.</li> <li>• Graph gas prices over a period of time. Draw conclusions based on graph data.</li> <li>• Student journal.</li> <li>• Students will count pennies, nickels, dimes, quarters, and dollar bills when purchasing items from their classroom store. <b>(Prob. Sol.; Con.)</b> <b>Assessment:</b> Teacher observation during morning meeting using a checklist</li> </ul>	graphing paper  Harcourt Chapter 6  <u>Teaching Student Centered Mathematics</u> (Van deWall) pg. 151 Activity 5.28, Money Counts  Math journal  play money, variety of items for classroom store

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<b>Essential Questions: Why is telling time important? How/why do you use a calendar in daily life?</b>				
Calendar	Strand/Standard/ Benchmark	Performance Standard	Suggested Student Activities/Assessments	Resources/Materials
<b>1<sup>st</sup> Nine Weeks</b>	<b>Strand: IV MEASUREMENT</b> <b>Standard:</b> Students will understand measurement systems and applications. <b>Benchmark: A</b> Understand measurable attributes of objects and the units, systems, and process of measurement.	1. Demonstrate understanding of the need for measuring with standard units and become familiar with standard units in the U.S. customary system  3. Identify time to the nearest minute (elapsed time) & relate time to everyday events.  4. Identify and use time intervals (e.g., hours, days, weeks, months, years). <i>Review/Master quarter hour</i>	<ul style="list-style-type: none"> <li>• Students will identify the seven days of the week; <b>(Comm.) (Con.)</b></li> <li>• Students will locate a given date on a calendar. <b>(Comm.) (Con.)</b></li> <li>• Students will identify specific dates such as the third Monday in a given month. <b>(Comm.) (Con.)</b></li> <li>• Students will determine the days or dates before or after a given time. <b>(Prob. Sol.; Comm.)</b></li> <li>• Students will determine the date representing a specific number of days or weeks in the past or in the future of a given date using a calendar. <b>(Prob sol)</b></li> </ul>	Calendar, list of months of the year,  Math journal  <u>Hands-On Standards</u> ETA Cuisenaire Numbers & Operations Lessons 24; Measurement Lesson 1 & 2.  Harcourt Chapter 7 Lesson 1-3; use Reteach & Challenge according to student level

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Essential Questions: How are repeated addition & multiplication related? How does my knowledge of multiplication facts help me solve problems?				
Calendar	Strand/Standard/ Benchmark	Performance Standard	Suggested Student Activities/Assessments	Resources/Materials
<b>1<sup>st</sup> Nine Weeks</b>	<p><b>Strand: I NUMBER AND OPERATIONS</b> <b>Standard:</b> Students will understand numerical concepts and mathematical operations. <b>Benchmark: B</b> Understand the meaning of operations and how they relate to one another. <b>Benchmark: A</b> Understand numbers, ways of representing numbers, relationships among numbers, and number systems. <b>Benchmark: C</b> Compute fluently and make reasonable estimates.</p>	<p>4. Identify how the number of groups and the number of items in each group equals a product. <b>Mastery</b> 1. Use a variety of models to show an understanding of multiplication and division of whole numbers (e.g., charts, arrays, diagrams, and physical models [i.e., modeling multiplication with a variety of pictures, diagrams, and concrete tools to help students learn what the factors and products represent in various contexts]). <b>Introduce and Mastery of multiplication</b> <b>Additional Standards and Benchmarks met:</b> S:III, S:III, B:D4; S:II, S:I, B:6</p> <p>Identify the relationship among commonly encountered factors and multiples (e.g., factor pairs of 12 are 1 x 12, 2 x 6, 3 x 4; multiples of 12 are 12, 24, 36). <b>Introduce</b></p>	<ul style="list-style-type: none"> <li>• The student will use small object manipulatives and teacher prepared cards with answers on back for self evaluation to demonstrate multiplication as repeated addition. <b>(Prob. Sol; Rep.)</b>   ♥♥♥ ♥♥♥ ♥♥♥ ♥♥♥</li> </ul> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 5px;">4 groups of 3=</div> <p><b>Assessment</b> :self evaluation</p> <ul style="list-style-type: none"> <li>• In groups of two, students will demonstrate their understanding of multiplication by building various arrays using square tiles and two dice. The students will roll the dice and sketch the array that corresponds to the numbers rolled on grid paper. They will write a multiplication sentence to describe it. <b>(Prob. Sol; Comm.; Rep.)</b></li> <li><b>Assessment:</b> Submit arrays for teacher evaluation</li> <li>• Students will use multiplication wrap-ups, manipulatives, number lines, flash cards, skip counting strips, arrays, and hundreds chart to learn multiplication facts through 12's. <b>(Prob. Sol.)</b></li> <li>• Students will play Factor Maze to practice identifying factors of a given number. <b>(Prob. Sol)</b></li> <li>• Students will recall and apply the following strategies when working with multiplication facts: 2's/doubles, 7's/weeks, 5's/clock,, 4's/doubles + one set, 9's/ finger tuck. <b>(Con.; Rep.)</b></li> <li>• Students will use triangle, fact family cards to write multiplication and division number sentences. <b>(Prob. Sol; Comm.)</b></li> <li><b>Assessment</b> : Timed multiplication fact quizzes</li> </ul>	<p>Small object manipulatives(e.g., counters, bears, beans, rocks), and teacher prepared cards</p> <p>graphing paper two dice per groups of two</p> <p><a href="http://www.mathcats.com/microworlds/multiplication_rods.html">http://www.mathcats.com/microworlds/multiplication_rods.html</a> <a href="http://www.funbrain.com/math/index.html">http://www.funbrain.com/math/index.html</a> <a href="http://www.oswego.org/ocsd-web/games/Mathmagician/mathsmulti.html">http://www.oswego.org/ocsd-web/games/Mathmagician/mathsmulti.html</a> (Websites for multiplication fact practice)</p> <p>Transparencies for Factor Maze and Factor Maze recording sheet (masters AM11 &amp; AM12 in Think Math page #84) labeled number cube 1-6, 2 different colors of crayons or markers.</p> <p>Harcourt New Mexico Math; Challenge book page CW60</p> <p><u>Hands-On Standards</u> ETA Cuisenaire Numbers &amp; Operations Lessons 5, 6, 7, 9, 10 Algebra Lessons 5, 6, 7, 8, 9</p>

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			<ul style="list-style-type: none"> <li>• In groups of two, students will take turns turning over two expressions at a time and will determine whether it is an example of a multiplication property. (Refer to challenge book page CW60.) <b>(Prob. Sol; R &amp; P; Comm.)</b></li> </ul> <p><b>Baldrige:</b> Students take the five minute 100 multiplication facts baseline assessment and the 2 digits x 1 to 2 digits standard assessment at the beginning and end of the 3<sup>rd</sup> 9wks.</p>	
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<b>Essential Questions:</b>				
<b>Calendar</b>	<b>Strand/Standard/ Benchmark</b>	<b>Performance Standards</b>	<b>Suggested Student Activities/Assessments</b>	<b>Resources/Materials</b>
<b>2<sup>nd</sup> Nine Weeks</b>	<p><b>Strand: I NUMBER AND OPERATIONS</b> <b>Standard:</b> Students will understand numerical concepts and mathematical operations. <b>Benchmark: B</b> Understand the meaning of operations and how they relate to one another. <b>Benchmark: A</b> Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</p> <p><b>Benchmark: C</b> Compute fluently and make reasonable estimates.</p>	<p>4. Identify how the number of groups and the number of items in each group equals a product. <b>Mastery</b> 1. Use a variety of models to show an understanding of multiplication and division of whole numbers (e.g., charts, arrays, diagrams, and physical models [i.e., modeling multiplication with a variety of pictures, diagrams, and concrete tools to help students learn what the factors and products represent in various contexts]). <b>Introduce and Mastery of multiplication</b> <b>Additional Standards and Benchmarks met:</b> S:III, S:III, B:D4; S:II, S:I, B:6</p> <p>Identify the relationship among commonly encountered factors and multiples (e.g., factor pairs of 12 are 1 x 12, 2 x 6, 3 x 4; multiples of 12 are 12, 24, 36). <b>Introduce</b></p> <p>2. Use strategies (e.g., 6 x 8 is double 3 x 8) to become fluent with the multiplication pairs up to 10 x 10. <b>Introduce</b></p> <p>3. Compute with basic number combinations (e.g., multiplication pairs up to 10 x 10 and their division counterparts). <b>Introduce</b></p> <p>5. Recognize and use the commutative property of multiplication (e.g., if 5 x 7 = 35, then what is 7 x 5?). <b>Introduce and Mastery</b> <b>Additional Standards and Benchmarks met:</b> S:II, S:II, B:,2&amp;3</p>	<p><b>Continue multiplication activities from the 1<sup>st</sup> Nine Weeks.</b></p> <ul style="list-style-type: none"> <li>• Use arrays &amp; multiplication table to find missing factors.</li> <li>• Use commutative property of multiplication/division to find missing factors.</li> </ul> <p><b>Baldrige:</b> Students take the five minute 100 multiplication facts baseline assessment and the 2 digits x 1 to 2 digits standard assessment at the beginning and end of the 3<sup>rd</sup> 9wks.</p>	<p><u>Hands-On Standards</u> ETA Cuisenaire Algebra Lesson 6, 12</p>

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<b>Essential Questions:</b>				
<b>Calendar</b>	<b>Strand/Standard/ Benchmark</b>	<b>Performance Standard/ Essential Question</b>	<b>Suggested Student Activities/Assessments</b>	<b>Resources/Materials</b>
<b>2nd Nine Weeks</b>	<p><b>Strand: V DATA ANALYSIS AND PROBABILITY</b> <b>Standard:</b> Students will understand how to formulate questions, analyze data, and determine probabilities. <b>Benchmark: A</b> Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.</p> <p><b>Strand: III GEOMETRY</b> <b>Standard:</b> Students will understand geometric concepts and applications. <b>Benchmark: B</b> Specify locations and describe spatial relationships using coordinate geometry and other representational systems.</p>	<p>1. Collect and organize data using observations, measurements, surveys, or experiments</p> <p>2. Represent data using tables and graphs (eg, line plots, bar graphs, and line graphs)</p> <p>2. Use ordered pairs to graph, locate specific points, create paths, and measure distances within a coordinate grid system. <i>Introduce</i></p> <p>3. Use a two-dimensional grid system (e.g., a map) to locate positions representing actual places. <i>Introduce</i></p>	<ul style="list-style-type: none"> <li>• Students create bar &amp; pictographs using square tiles or bear counters.</li> <li>• Use data (weather, attendance, etc) to create a line graph using counters</li> <li>• Students will conduct a classroom survey to understand data. In their math journal students will record field trip preferences; zoo, science museum, and planetarium using a tally table. In their journals students will use the tally table to explain what the tally marks represent. (e.g., what field trip was preferred by most, and what fieldtrip was least preferred?) <b>(Comm.; Rep.)</b></li> </ul> <p><b>Assessment:</b> Students will compose a paragraph on how to conduct a survey about favorite after school activities. They will select either a tally table or a frequency table to show the results.</p> <ul style="list-style-type: none"> <li>• Students will practice analyzing data found in graphs and tally tables to answer questions and make predictions. (Refer to Harcourt Math Reteach, Practice, and Challenge book) <b>(R &amp; P; Rep.)</b></li> <li>• Students compare and analyze various graphs. (Refer to Harcourt Math Teacher's edition page 324.) <b>(R &amp; P)</b></li> <li>• The students will practice locating points on a grid. Students will make a dot-to dot design on a grid and write directions for other students to follow to duplicate the design. Students following the design must describe the design. <b>(R &amp; P; Comm.; Rep.)</b></li> <li>• Students will use their atlases to pinpoint locations on the United States map using latitude and longitude. <b>(Prob. Sol)</b></li> </ul> <p><b>Assessment:</b> Students will locate each ordered pair, draw a point, and label it with a letter. (Refer to Transparency 16.4)</p> <ul style="list-style-type: none"> <li>• Students play "Are You Square?" In groups of three, students compare their height to their arm</li> </ul>	<p>Hands-on Standards ETA Cuisinaire Data Analysis &amp; Probability Lesson 2, 3, 4, 5</p> <p>Grid paper, scissors</p> <p>Bear counters Square tiles Graph paper Two-sided counters</p> <p>Harcourt Math New Mexico, Reteach page #RW78, Practice page #PW78, and Challenge page #CW78</p> <p>Red, blue, and yellow blocks, brown bag, and math journal</p> <p><u>Hands-on Standards ETA</u> Cuisenaire Geometry Lessons 17 &amp; 18</p> <p>Graphing paper Geoboards Student atlas</p> <p>Harcourt Math New Mexico, Transparency 16.4</p>

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	<p><b>Strand: IV MEASUREMENT</b> <b>Standard:</b> Students will understand measurement systems and applications. <b>Benchmark: B</b> Understand measurable attributes of objects and the units, systems, and process of measurement.</p> <p><b>Strand: IV MEASUREMENT</b> <b>Standard:</b> Students will understand measurement systems and applications. <b>Benchmark: B</b> Apply appropriate techniques, tools, and formulas to determine measurements</p> <p><b>Strand: IV MEASUREMENT</b> <b>Standard:</b> Students will understand measurement systems and applications. <b>Benchmark: B</b> Apply appropriate techniques, tools, and formulas to determine measurements.</p>	<p>6. Demonstrate understanding that measurements are approximations, investigate differences in units and their effect on precision, and consider the degree of accuracy for different situations.</p> <p>5. Identify properties (e.g., length, area, weight, volume) and select the appropriate type of unit for measuring each property. <i>Introduce volume</i></p> <p>2. Estimate measurements. <i>Review</i></p> <p>3. Use appropriate standard units and tools to estimate, measure, and solve problems (e.g., length, area, weight). <i>Review</i></p> <p>2. Create and describe mental images of objects, patterns, and paths. <i>Review and introduce number pattern sentences</i></p> <p>3. Use appropriate standard units &amp; tools to estimate, measure, and solve problems (e.g., length, area, weight).</p> <p>4. Recognize a 90-degree angle and use it as a strategy to estimate the size of other angles. <i>Introduce</i></p> <p><b>Baldrige:</b> Beginning of 2<sup>nd</sup> 9wks, students take baseline assessment for standard 2-3 digit subtraction with or without regrouping. Students take five minute 100 fact test. Students take post test for both assessments at the end of 2nd 9wks.</p>	<p>span. If their measurements are equal, they are a <i>square</i>. If their arm span is greater, they are a flat rectangle. <b>(R &amp; P; Rep.)</b></p> <ul style="list-style-type: none"> <li>• Estimate how many tablespoons are in a cup, how many cups in a pint, pints in a quart, and quarts in a gallon. <b>(Prob. Sol; R &amp; P; Con.)</b></li> <li>• Estimate millimeters in centimeters, inches in feet, and feet in yards <b>(Prob. Sol; R &amp; P)</b></li> <li>• Students will estimate the number of 3" x 5" cards it would take to cover their desktops, a floor tile, and the blackboard. <b>(Prob. Sol; R &amp; P)</b></li> <li>• Students will estimate the total number of money that will need to be collected from the students who are buying lunch on pizza day. <b>(Prob. Sol; R &amp; P; Con.)</b></li> </ul> <p><b>Assessment:</b> Students collect, cut out various pictures of items, and justify how each item is measured using standard units. (e.g., eggs –measured by the dozen, gasoline – by the liter)</p> <ul style="list-style-type: none"> <li>• Order several bottle containers by capacity. <b>(Rep.)</b></li> <li>• Students will identify the volume of solids made from colored cubes. In pairs, students make a rectangular prism or cube using colored cubes. They will also make a table in which the length, width and height of the figure are recorded. Students exchange tables with other pairs. The pairs have to build the solid figure and identify the volume using the data from the table. <b>(Rep.)</b></li> </ul> <p><b>Assessment:</b> Students will find and record the volume of each solid in cubic units. (Refer to Harcourt Math Transparency 22.4)</p> <ul style="list-style-type: none"> <li>• Students will use 90 degree angles (square pattern blocks) to compare and estimate the size of angles of plane figures. Students will record angle estimates of each figure.(Refer to website for plane figures) <b>(R &amp; P; Rep.)</b></li> </ul> <p><b>Assessment:</b> Submit student work for evaluation.</p>	<p>Hands-on Standards ETA Cuisenaire Measurement Lessons 3, 11</p> <p>Centimeter cubes Color tiles Balance scales Counters (bear or 2-sided)</p> <p>3x5 cards Measurement tools: teaspoon, gallons, etc.</p> <p>Several bottles that are short, tall, fat, slender</p> <p>Math Journal</p> <p><a href="http://www.learner.org/channel/workshops/missinglink/pdf/workshop5.pdf">http://www.learner.org/channel/workshops/missinglink/pdf/workshop5.pdf</a></p>
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<b>Essential Questions: How can I identify and describe solid figures by describing the faces, edges, and sides?</b> <b>How can I put shapes together and take them apart to form other shapes?      How are angles classified?</b>				
Calendar	Strand/Standard/ Benchmark	Performance Standard/ Essential Question	Suggested Student Activities/Assessments	Resources/Materials
<b>3<sup>rd</sup> Nine Weeks</b>	<p><b>Strand: III GEOMETRY Standard:</b> Students will understand geometric concepts and applications. <b>Benchmark: A</b> Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.</p> <p><b>Strand: III GEOMETRY Standard:</b> Students will understand geometric concepts and applications. <b>Benchmark: B</b> Specify locations and describe spatial relationships using coordinate geometry and other representational systems.</p>	<p>1. Explore attributes of quadrilaterals (e.g., parallel &amp; perpendicular sides for the parallelogram, right angles for rectangle, and equal sides and right angles for square)</p> <p>1. Identify, describe, and classify polygons (e.g., pentagons, hexagons, and octagons)</p> <p>1. Describe and compare the attributes of plane and solid geometric figures to show relationships and solve problems:            • identify, describe, and classify polygons (e.g., pentagons, hexagons, and octagons) <b>Review and add pentagons and octagons</b></p> <ul style="list-style-type: none"> <li>• Identify, describe, and classify common three-dimensional geometric objects.</li> <li>• Visualize, build &amp; draw geometric objects</li> <li>• Identify, describe, and classify common 3-dimensional geometric objects (e.g., cube, rectangular solid, sphere, prism, pyramid, cone &amp; cylinder)</li> </ul>	<ul style="list-style-type: none"> <li>• Students will draw, sort, and identify polygons. They will draw the polygons on grid paper and cut them out. Then they will trade with another student. Students will then sort the polygons according to attributes (e.g., sides, angles) and write the name of the polygon on each figure. <b>(Prob. Sol; Comm.; Rep.)</b></li> <li>• <b>Assessment:</b> Students identify the names of polygons and how many sides and angles each polygon has. (Refer to transparency 19.3)</li> <li>• The student will examine their classroom, home, and environment for symmetrical objects (e.g., butterfly, apple, and rug). They will select at least four examples, draw them, mark the dotted line of symmetry, and explain why it qualifies for being symmetrical. <b>(Prob. Sol; R &amp; P; Comm.; Con.; Rep.)</b></li> </ul> <p><b>Assessment:</b> The student will create a symmetrical paper quilt with evidence of 2-D plane figures and 3-D solids being flipped, slid, and turned. The quilt must also include a written description explaining what geometry terms were used to construct the quilt.</p> <ul style="list-style-type: none"> <li>• As a whole group students will respond to teacher commands. (e.g., When teacher calls north, students face the north part of the room) <b>(Comm.; Con.)</b></li> </ul> <p><b>Assessment:</b> With a student atlas, students will answer questions to locate actual places using cardinal directions.</p> <ul style="list-style-type: none"> <li>• Students will work with a partner to find and cut out examples of quadrilaterals from magazines and newspaper ads. On a tally graph, they will record how many parallelograms, rhombuses, rectangles, and squares they find. <b>(R &amp; P; Comm.)</b></li> <li>• Students will identify parallel and perpendicular lines in alphabet letters. <b>(Prob. Sol; Comm.)</b></li> </ul> <p><b>Assessment:</b> Students will use geo boards to construct various polygons using parallel and</p>	<p>Grid paper, scissors</p> <p>Harcourt Math New Mexico Transparency 19.3</p> <p><u><a href="#">Hand-on Standards ETA Cuisenaire Geometry Lessons 4, 5, 9, 14</a></u></p> <p>Geo-solids Mirrors Pattern Blocks Newspapers, magazines, scissors, glue, math journal</p> <p>Harcourt Math New Mexico page # 402 (Additional practice on perpendicular, parallel, right angles)</p> <p><u><a href="http://www.bbc.co.uk/schools/ks2bitesize/maths/shape_space_measures.shtml">http://www.bbc.co.uk/schools/ks2bitesize/maths/shape_space_measures.shtml</a></u> (Activities on shapes, space, and measure)</p> <p>Various nets, glue, scissors, and square dot paper Solid figure patterns found on page #TR32-36 in Harcourt Math New Mexico</p> <p><u><a href="http://www.uen.org/Lessonplan/preview.cgi?LPid=16273">http://www.uen.org/Lessonplan/preview.cgi?LPid=16273</a></u> Harcourt Math New Mexico, Reteach, Practice, and Challenge page #108</p>

**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b>	Mathematics	<b>May 2009</b>	<b>Grade Level:</b>	Third Grade
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	<p><b>Strand: II GEOMETRY</b> <b>Standard:</b> Students will understand geometric concepts and applications. <b>Benchmark: D</b> Use visualization, spatial reasoning, and geometric problems.</p>	<p>1. Describe location and movement using common language and geometric vocabulary (e.g., directions from classroom to gym). <i>Review and Introduce cardinal directions</i></p>	<p>perpendicular lines.</p> <ul style="list-style-type: none"> <li>• Students will demonstrate their understanding of acute, obtuse, and right angles by using their arms to form them when prompted by the teacher. <b>(Comm.; Rep.)</b></li> <li>• Students will locate three-dimensional objects within the classroom and conclude what solid figures can be used for making the shape. <b>(Prob. Sol; Con.)</b></li> <li>• Students will create three-dimensional shapes using teacher prepared nets. In addition to constructing a plane drawing of the solids on square dot paper, they will describe attributes such as # of faces, edges, and vertices. <b>(Comm.; Rep.)</b></li> <li>• Students will use their bodies to demonstrate slide, flip, and turn. (Refer to website for instructions) <b>(Comm.; Rep.)</b></li> </ul>	<p>(Additional practice on flipping, sliding, and turning)</p>
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**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b> Third Grade
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<b>Essential Questions:</b>				
<b>Calendar</b>	<b>Strand/Standard/ Benchmark</b>	<b>Performance Standard/ Essential Question</b>	<b>Suggested Student Activities/Assessments</b>	<b>Resources/Materials</b>
<b>3<sup>rd</sup> Nine Weeks</b>	<p><b>Strand: II ALGEBRA Standard:</b> Students will understand algebraic concepts and applications. <b>Benchmark: A</b> Understand patterns, relations, and functions.</p> <p><b>Strand I: NUMBER AND OPERATIONS Standard:</b> Students will understand numerical concepts and mathematical operations. <b>Benchmark: A</b> Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</p>	<p>5. Use visual models and other strategies to recognize and generate equivalents of commonly used fractions and mixed numbers (e.g., halves, thirds, fourths, sixths, eighths, and tenths). <i>Review common fractions/Introduce mixed numbers in 4<sup>th</sup> 9wks</i></p> <p>6. Demonstrate an understanding of fractions as parts of unit wholes, parts of a collection or set, and as locations on a number line. <b>Mastery</b></p> <p>7. Use common fractions for measuring and money (e.g., using fractions and decimals as representations of the same concept, such as half of a dollar = 50 cents). <b>Introduction</b></p>	<ul style="list-style-type: none"> <li>• The student will solve multi-step problems. Example: At the school bake sale, Jeremy sold 8 plates of cookies and Ashley sold 7 plates. If each plate cost \$2, how much money did they earn in all? (Refer to Harcourt Math student practice pages and transparency.) <b>(Prob. Sol; Comm.)</b></li> <li><b>Assessment:</b> Students turn in completed student practice sheet.</li> <li>• The students will demonstrate their understanding of commonly used fractions by using various precut strips of construction paper, folding and labeling them into halves thirds, fourths, sixths, eighths, and tens. Through comparison and contrasting the strips, students will discover equivalent fractions.<b>(Comm.)</b></li> <li><b>Assessment:</b> Direct students to draw a picture and write the fraction that names the shaded part. (Refer to transparency 25.2)</li> <li>• Students will gently drop a handful of counters on their desk top and use results to discover fractional part of a set.(Out of 12 counters, 2/12 landed on the yellow side, 10/12 landed on red side) Students continue the same procedure using the same number of counters every time.<b>(Prob sol.; Comm.)</b></li> <li><b>Assessment:</b> Students will point out and record in their math journal, the fractional part of a set for vowels and consonants in a given words.</li> <li>• Students will relate fractions and money by listing ways that money amounts can be written. Students will record their answers on a chart. (Refer to Harcourt Math page 576B for chart. <b>(Comm.; Rep.)</b>)</li> <li>• Students will compare and measure the capacities of assorted containers by using pints, cups, quarts, half, gallons, and gallons. They will figure out how many cups it requires to fill a pint, quart, half, gallon, and gallon. <b>(Prob sol.; Con.)</b></li> <li>• Students measure teacher prepared line segments using inches Teacher prepares several <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, and <math>2\frac{1}{3}</math> inch line segments. <b>(Prob sol)</b></li> <li><b>Assessment:</b> Students will find equivalent fractions by using money. Teacher will direct students by telling them that a half a dollar in pennies will be 50 out of 100 or 50/100. Students will use their money to find: what fraction is represented by a half a dollar in dimes? In quarters, in nickels? Students will then use measuring cups to determine how many pennies it would take to fill a <math>\frac{1}{2}</math> cup, <math>\frac{1}{4}</math>, or <math>2\frac{1}{3}</math> cups.</li> </ul>	<p>Transparency 11.5/Harcourt Math Harcourt Math New Mexico, Reteach page #RW61; Practice book page PW61; Challengepage#CW61</p> <p>Precut 1"x12"construction strips</p> <p>two sided colored counters</p> <p>Harcourt Math New Mexico page# 576B</p> <p>Measuring cups, pint, quart, half gallon, and half gallon containers</p> <p>Teacher prepared line segments</p> <p>Coins, measuring cup <a href="http://www.funbrain.com/fract/">http://www.funbrain.com/fract/</a> <a href="http://www.sums.co.uk/playground/n6a/playground.htm">http://www.sums.co.uk/playground/n6a/playground.htm</a> <a href="http://nlvm.usu.edu/en/av/frames_asid_104_g_1_t_1.html">http://nlvm.usu.edu/en/av/frames_asid_104_g_1_t_1.html</a> (Interactive games for fractions)</p>

**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b> Third Grade
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<b>Essential Questions: How do you find perimeter and area of geometric shapes?</b>				
Calendar	Strand/Standard/ Benchmark	Performance Standard/ Essential Question	Suggested Student Activities/Assessments	Resources/Materials
<b>3<sup>rd</sup> Nine Weeks</b>	<p><b>Strand: IV MEASUREMENT</b> <b>Standard:</b> Students will understand measurement systems and applications. <b>Benchmark: A</b> Apply appropriate techniques, tools, and formulas to determine measurements.</p> <p><b>Strand: V DATA ANALYSIS AND PROBABILITY</b> <b>Standard:</b> Students will understand how to formulate questions, analyze data, and determine probabilities. <b>Benchmark:</b> Understand and apply basic concepts of probability.</p>	<p>5. Identify properties (e.g., length, area, weight, volume) and select the appropriate type of unit for measuring each property. <i>Mastery</i> <b>Additional Standards and Benchmarks met: S:IV, SII, B1,2,3</b></p> <p>3. Conduct simple experiments by determining the number of possible outcomes and make simple predictions:  <ul style="list-style-type: none"> <li>• identify whether events are certain, likely, unlikely, or impossible <i>Review</i></li> <li>• record the outcomes for a simple event and keep track of repetitions <i>Review</i></li> <li>• summarize and record the results in a clear and organized way <i>Introduce</i></li> <li>• use the results to predict future events/ <i>Mastery</i></li> </ul> <b>Additional Standards and Benchmarks met: S:IV, S:IV, B2</b></p>	<ul style="list-style-type: none"> <li>• Students will compare the areas of two different shapes that have the same perimeters. On geoboard, students construct the two different shapes. Then, they compare both area and perimeter. <b>(Prob. Sol; Con.; Rep.)</b></li> <li>• Students will find area and perimeter of rectangles. (Refer to interactive website) <b>(Prob. Sol)</b></li> <li>• Students find the area of their desks by covering their desk with square inch tiles and counting the tiles. <b>(Prob. Sol; Rep.)</b></li> <li>• Students use length and with of various objects in the classroom to find area.<b>(Prob. Sol; Rep.)</b></li> <li>• Students outline their foot to find area in square units. <b>(Rep.)</b></li> </ul> <p><b>Assessment:</b> Students will find area of various figures using square units. (Refer to transparency 22.2)</p>	<p>math journal</p> <p>Geoboards, rubber bands</p> <p><a href="http://www.mathplayground.com/geometryMovie.html">http://www.mathplayground.com/geometryMovie.html</a></p> <p>Harcourt Lesson 24.1 &amp; 24.2</p>

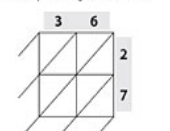
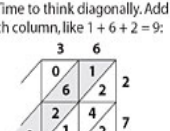
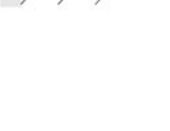

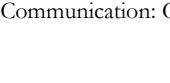
**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b> Third Grade
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<b>Essential Questions: How do I identify and record the fraction of a whole or group?</b> <b>How does my knowledge of multiplication facts help me to solve problems? How do we translate verbal ideas to the language of mathematics?</b>				
Calendar	Strand/Standard/ Benchmark	Performance Standard	Suggested Student Activities/Assessments	Resources/Materials
<b>3rd Nine Weeks</b>	<p><b>Strand I: NUMBER AND OPERATIONS</b>  <b>Standard:</b> Students will understand numerical concepts and mathematical operations.  <b>Benchmark: A</b>            Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</p>	<p>5. Use visual models and other strategies to recognize and generate equivalents of commonly used fractions and mixed numbers (e.g., halves, thirds, fourths, sixths, eighths, and tenths). <b>Review common fractions/Introduce mixed numbers in 4<sup>th</sup> 9wks</b></p> <p>6. Demonstrate an understanding of fractions as parts of unit wholes, parts of a collection or set, and as locations on a number line.  <b>Mastery</b></p> <p>7. Use common fractions for measuring and money (e.g., using fractions and decimals as representations of the same concept, such as half of a dollar = 50 cents).  <b>Introduction</b></p> <p><b>Baldrige:</b> Beginning of 2<sup>nd</sup> 9wks, students take baseline assessment for standard 2-3 digit subtraction with or without regrouping. Students take five minute 100 fact test. Students take post test for both assessments at the end of 2nd 9wks.</p>	<ul style="list-style-type: none"> <li>• The students will demonstrate their understanding of commonly used fractions by using various precut strips of construction paper, folding and labeling them into halves thirds, fourths, sixths, eighths, and tens. Through comparison and contrasting the strips, students will discover equivalent fractions. <b>(Comm.)</b></li> <li><b>Assessment:</b> Direct students to draw a picture and write the fraction that names the shaded part. (Refer to transparency 25.2)</li> <li>• Students will gently drop a handful of counters on their desk top and use results to discover fractional part of a set. (Out of 12 counters, 2/12 landed on the yellow side, 10/12 landed on red side) Students continue the same procedure using the same number of counters every time. <b>(Prob sol.; Comm.)</b></li> <li><b>Assessment:</b> Students will point out and record in their math journal, the fractional part of a set for vowels and consonants in a given words.</li> <li>• Students will relate fractions and money by listing ways that money amounts can be written. Students will record their answers on a chart. (Refer to Harcourt Math page 576B for chart. <b>(Comm.; Rep.)</b></li> <li>• Students will compare and measure the capacities of assorted containers by using pints, cups, quarts, half, gallons, and gallons. They will figure out how many cups it requires to fill a pint, quart, half, gallon, and gallon. <b>(Prob sol.; Con.)</b></li> <li>• Students measure teacher prepared line segments using inches Teacher prepares several <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, and <math>2\frac{1}{3}</math> inch line segments. <b>(Prob sol)</b></li> <li><b>Assessment:</b> Students will find equivalent fractions by using money. Teacher will direct students by telling them that a half a dollar in pennies will be 50 out of 100 or 50/100. Students will use their money to find: what fraction is represented by a half a dollar in dimes? In quarters, in nickels? Students will then use measuring cups to determine how many pennies it would take to fill a <math>\frac{1}{2}</math> cup, <math>\frac{1}{4}</math>, or <math>2\frac{1}{3}</math> cups.</li> <li>• In pairs, students will use place value to write whole numbers up to 10,000 in expanded form. The teacher will write the whole numbers on the board. (e.g., 876,539 =8 hundred thousands, 7 ten thousands, 6 thousands, 5 hundreds, 3 tens, 9 ones, or 8x 100,000 +7x 10,000 +6x1,000 +5x100 + 3x 10 + 9) <b>(Comm.; Rep.)</b></li> </ul>	<p>Precut 1"x12" construction strips</p> <p>two sided colored counters</p> <p>Harcourt Math New Mexico page# 576B</p> <p>Measuring cups, pint, quart, half gallon, and half gallon containers</p> <p>Teacher prepared line segments</p> <p>Coins, measuring cup  <a href="http://www.funbrain.com/fract/">http://www.funbrain.com/fract/</a>  <a href="http://www.sums.co.uk/playground/n6a/playground.htm">http://www.sums.co.uk/playground/n6a/playground.htm</a>  <a href="http://nlvm.usu.edu/en/nav/frames_asid_104_g_1_t_1.html">http://nlvm.usu.edu/en/nav/frames_asid_104_g_1_t_1.html</a>            (Interactive games for fractions)</p> <p><u>Hands-On Standards</u> – ETA Cuisenaire Numbers &amp; Operations Lessons 15, 16, 17</p> <p>Fraction circles            2 color counters</p> <p>Play money</p>

# Portales Municipal Schools CURRICULUM MAP

<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b>	Third Grade
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<p><b>Strand: I NUMBER AND OPERATIONS</b> <b>Standard:</b> Students will understand numerical concepts and mathematical operations. <b>Benchmark: A</b> Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</p> <p><b>Strand: I NUMBER AND OPERATIONS</b> <b>Standard:</b> Students will understand numerical concepts and mathematical operations. <b>Benchmark: B</b> Understand the meaning of operations and how they relate to one another.</p> <p><b>Strand: I NUMBER AND OPERATIONS</b> <b>Standard:</b> Students will understand numerical concepts and mathematical operations. <b>Benchmark: C</b> Compute fluently and make reasonable estimates.</p>	<p>Identify some representations for some numbers and generate them by decomposing and recombining numbers (e.g., <math>853 = 8 \times 100 + 5 \times 10 + 3</math>; <math>85 \times 10 + 3 = 853</math>; <math>853 = 900 - 50 + 3</math>). <b>Review and add multiplication</b></p> <p>3. Solve simple multiplication and division problems (e.g., <math>135 \div \dots</math>) <b>Introduce</b></p> <p>1. Choose computational methods based on understanding the base-ten number system, properties of multiplication and division, and number relationships. <b>Introduce</b></p>	<ul style="list-style-type: none"> <li>• Students will discover combinations of coins to use to produce 25¢, 50¢, and \$1.00. <b>(Prob. Sol; R &amp; P; Con.; Rep.)</b></li> <li>• Students will give change from a dollar. <b>(Prob. Sol; Rep.)</b></li> </ul> <p><b>Assessment:</b> Students independently decompose and recombine numbers in math journal (teacher will write numbers on board).</p> <ul style="list-style-type: none"> <li>• Students will use number lines and small object manipulatives (for grouping) to solve multiplication and division problems. <b>(Prob. Sol; Con.; Rep.)</b></li> <li>• Students will use base-ten blocks to multiply two digit numbers (Refer to Harcourt math Teacher edition) <b>(Prob. Sol; Con.; Rep.)</b></li> <li>• Students will use base-ten blocks to divide 2-digit numbers (refer to activity in Harcourt TE) <b>(Prob. Sol; Con.; Rep.)</b></li> <li>• Students will multiply 2 and 3 digit numbers by one digit the following methods: <b>(Prob. Sol; R &amp; P;</b></li> </ul> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Hundreds</th> <th style="padding: 5px;">tens</th> <th style="padding: 5px;">ones</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px; color: blue;">1</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="padding: 5px; color: blue;">9</td> <td style="padding: 5px; color: orange;">8</td> </tr> <tr> <td style="padding: 5px; color: black; font-weight: bold;">X</td> <td style="padding: 5px;"></td> <td style="padding: 5px; color: orange;">2</td> </tr> <tr> <td style="padding: 5px; color: green;">1</td> <td style="padding: 5px; color: blue;">9</td> <td style="padding: 5px; color: orange;">6</td> </tr> </tbody> </table> <p style="text-align: right; margin-right: 20px;">using  Rep.)</p> <p><b>36 x 27 = What?</b></p> <p>The traditional solution at left gives you the same result as a multiplication grid, an alternate way to solve math problems:</p>  <p>1. Set it up on a grid like this:</p>  <p>2. Since <math>6 \times 2 = 12</math>, insert the "12" in the triangles like this:</p>  <p>3. Fill out the rest. Use a zero if it's less than 10, as with <math>3 \times 2 = 6</math>:</p>  <p>4. Time to think diagonally. Add each column, like <math>1 + 6 + 2 = 9</math>:</p>  <p>5. Putting those together (0972) gives you the answer: <b>972</b>.</p>  <p>Source: Ivy Hill Elementary School Web site</p> <p style="text-align: right; font-size: small;">Chicago Tribune Chuck Burke</p>	Hundreds	tens	ones		1			9	8	X		2	1	9	6	<p>Number lines, small object manipulatives, division and multiplication problems</p> <p>Harcourt Math New Mexico, teacher's edition page #610 and base-ten blocks</p> <p>Harcourt Math New Mexico teacher's edition page # 620</p> <p>Graph paper and teacher prepared multiplication and division problems for activities using the grid, lattice method, and place value chart</p>
Hundreds	tens	ones																
	1																	
	9	8																
X		2																
1	9	6																

**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b> Third Grade
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<b>Essential Questions: How can I use fractions in real life?</b> <b>How can models be used to compute fractions with like and unlike denominators?</b>				
Calendar	Strand/Standard/ Benchmark	Performance Standard/ Essential Question	Suggested Student Activities/Assessments	Resources/Materials
<b>4<sup>th</sup> Nine Weeks</b>	<b>Strand I: NUMBER AND OPERATIONS</b> <b>Standard:</b> Students will understand numerical concepts and mathematical operations. <b>Benchmark: A</b> Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	6. Demonstrate an understanding of fractions as parts of unit wholes, parts of a collection or set, and as locations on a number line. <i>Review</i>	<ul style="list-style-type: none"> <li>• In small groups, students will rank teacher prepared fraction cards from greatest to least and least to greatest. <b>(Prob. Sol)</b>                Assessment: Students order fractions on a number line.</li> <li>• Students will recognize fractional part of a whole number when given a set of fractions. (e.g., <math>\frac{1}{2}</math> of 12 = 6; <math>\frac{1}{4}</math> of 12 = 3) Students may use counters to help solve problems. (Teacher writes fractions on the board) <b>(Prob. Sol.)</b>  <b>Assessment:</b> Students copy fractions from the board and compute answers in their math journal. Math journal work is evaluated by teacher.</li> </ul>	fraction cards  teacher prepared number line on student handout  counters  <u>Hands-on Standards</u> ETA Cuisenaire Numbers & Operations lessons 19, 20  Fraction towers Fraction circles

**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b> Third Grade
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<b>Essential Questions: How are multiplication and division related?</b> <b>How can I use what I know about repeated subtraction, equal sharing, and forming equal groups to solve division problems?</b>																
Calendar	Strand/Standard/ Benchmark	Performance Standards	Suggested Student Activities/Assessments	Resources/Materials												
<b>4<sup>th</sup> Nine Weeks</b>	<p><b>Strand: I NUMBER AND OPERATIONS</b>  <b>Standard:</b> Students will understand numerical concepts and mathematical operations.  <b>Benchmark: B</b> Understand the meaning of operations and how they relate to one another.</p> <p><b>Strand: I NUMBER AND OPERATIONS</b>  <b>Standard:</b> Students will understand numerical concepts and mathematical operations.  <b>Benchmark: B</b> Understand the meaning of operations and how they relate to one another.</p>	<p>6. Identify and use relationship between multiplication and division (e.g., division is the inverse of multiplication) to solve problems. <i>Introduce</i></p> <p>7. Select and use operations (e.g., addition, multiplication, subtraction, division) to solve problems. <i>Review addition, subtraction, and Multiplication/ Introduce division</i></p> <p>5. Demonstrate the effects of multiplying and dividing on whole numbers (e.g., to find the total number of legs on 12 cats, 4 represents the number of each [cat] unit, so <math>12 \times 4 = 48</math> [leg] units). <i>Introduce</i></p>	<table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 0 10px;">20</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">30</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">4</td> <td style="padding: 0 10px;">680</td> </tr> <tr> <td style="padding: 0 10px;">3</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">600</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">80</td> <td></td> </tr> <tr> <td></td> <td style="border: 1px solid black; padding: 5px; text-align: center;">90</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">12</td> <td style="padding: 0 10px;"><math>\frac{102}{782}</math></td> </tr> </table> <p>Grid multiplication  <b>Assessment:</b> Students will select a computational method for solving simple division and multiplication problems.</p> <ul style="list-style-type: none"> <li>• In groups of two students will use items (e.g., counters, play money, cubes, and colored tiles) to model multiplication and division sentences. One student models the sentence and the other student checks the model. Then they reverse roles. (Refer to Teacher's edition for sentence examples) <b>(Prob. Sol; Comm.; Rep.)</b></li> <li>• Students will select the appropriate operation to solve multiplication and division word problems. (Refer to student Reteach, Practice, and Challenge workbooks) <b>(Prob. Sol.)</b>  <b>Assessment:</b> Students will write four word problems in their math journal; each requiring different operations (+, -) to solve.</li> <li>• Students will play <i>Pairing people from Two Groups</i> to demonstrate the effects of multiplication. Five students will come to the front of room. Three students will have green construction paper and two students will have blue construction paper. Each student holding a green paper will shake hands with each student holding blue paper. Students predict and record total number of handshakes on a table drawn on the board by the teacher. (Refer to Think Math Teacher's Resource) <b>(R &amp; P; Comm.)</b>  <b>Assessment:</b> Students determine the outcomes when multiplying and dividing. (Refer to Transparency 13.5, Harcourt Math)</li> </ul>	20	30	4	680	3	600	80			90	12	$\frac{102}{782}$	<p>Graph paper, Harcourt Math New Mexico chapter 30 review/Test page #631</p> <p>Harcourt Math New Mexico teacher's edition page #242B</p> <p>Harcourt Math New Mexico; Reteach page # RW153, Practice page # PW153, and Challenge page #CW153</p> <p>Think Math Teacher's Resource Guide page# 50            Several sheets of construction paper in two different colors.</p> <p>Harcourt Math New Mexico, Transparency 13.5</p>
20	30	4	680													
3	600	80														
	90	12	$\frac{102}{782}$													


**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b> Third Grade
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Essential Questions: What are the different ways to represent the patterns or relationships in algebraic equations?														
Calendar	Strand/Standard/ Benchmark	Performance Standard	Suggested Student Activities/Assessments	Resources/Materials										
<b>4<sup>th</sup> Weeks</b>	<p><b>Strand: II ALGEBRA</b> <b>Standard:</b> Students will understand algebraic concepts and applications. <b>Benchmark:C</b> Use mathematical models to represent and understand quantitative relationships.</p> <p><b>Strand: ALGEBRA</b> <b>Standard:</b> Students will understand algebraic concepts and applications. <b>Benchmark:D</b> Analyze changes in various contexts.</p> <p><b>FOUNDATION FOR 4<sup>TH</sup> GRADE: Introduce fractions &amp; decimals: tenths, hundredths, and decimals greater than one</b></p>	<p>2. Solve problems involving proportional relationships including unit pricing (e.g., four apples cost 80 cents; therefore, one apple costs 20 cents). <b>Review and introduce unit pricing</b></p> <p>3. Describe relationships of quantities in the form of mathematical expressions, equations, or inequalities. <b>Review and introduce number equations using x, ÷</b></p> <p>1. Demonstrate how change in one variable can relate to a change in a second variable (e.g., input-output machines, data tables). <b>Introduce</b></p> <p>5. Identify properties (e.g., length, area, weight, volume) and select the appropriate type of unit for measuring each property. <b>Mastery of pounds and ounces/Introduce volume</b></p> <p>Compare &amp; order fractions &amp; decimals</p>	<ul style="list-style-type: none"> <li>As a whole group, students will use classroom store items to generate multiplication and division word problems that include unit pricing. (e.g., Paul purchased 10 pencils for \$1.00, what was the cost of one pencil?) Students will then write and solve their expressions. <math>100 \div 10 = 10</math> Shelly purchased 5 erasers for 5¢ each, How much did she spend? <math>5 \times 5 \text{¢} = 25 \text{¢}</math> (<b>Prob. Sol; Comm.; Con.</b>)</li> <li>Students will use classroom store to generate 2 division and multiplication word problems they will select and use the appropriate operation to solve each word problem in their math journal</li> <li>Students will determine the appropriate function rule (+, -, X, ÷) for the input and out machine exercises displayed on the board.</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px;">A</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">8</td> <td style="padding: 2px;">A</td> </tr> <tr> <td style="padding: 2px;">B</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">8</td> <td style="padding: 2px;">16</td> <td style="padding: 2px;">2A</td> </tr> </table> <p><b>(Prob. Sol; Rep.)</b> <b>Assessment:</b> Students will demonstrate their understanding of input and output machines by choosing the rule or set of rules for the rule cards. (Refer to chapter test on Think Math Resource Collection)</p> <ul style="list-style-type: none"> <li>Students cooperatively work together to measure a variety of objects to determine mass using a balance scale. They will measure with ounces and pounds. On a table, they will record their prediction and the object's actual weight after weighing it on a balance scale. (<b>R &amp; P; Comm.; Con.; Rep.</b>)</li> </ul> <p><b>Assessment:</b> Student findings will be recorded on a teacher prepared table and turned in for evaluation.</p> <p>See resource list</p>	A	2	4	8	A	B	4	8	16	2A	<p>Math journal</p> <p>Input and out put exercises</p> <p>Think Math Resource Collection Page # AG1 and AG2</p> <p>Balance scale and classroom objects for weighing, math journal</p> <p><u>Hands-on Standards</u> ETA Cuisenaire Numbers &amp; Operations Lessons 21, 22, 23</p> <p>Fraction towers Base ten blocks</p>
A	2	4	8	A										
B	4	8	16	2A										

**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b> Mathematics	<b>May 2009</b>	<b>Grade Level:</b>	Third Grade
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<b>Essential Questions: When are algebraic and numeric expressions used?</b>				
Calendar	Strand/Standard/ Benchmark	Performance Standard	Suggested Student Activities/Assessments	Resources/Materials
<b>4<sup>th</sup> Nine Weeks</b>	<p><b>Strand: II ALGEBRA Standard:</b> Students will understand algebraic concepts and applications. <b>Benchmark: C</b> Use mathematical models to represent and understand quantitative relationships.</p> <p><b>Strand: II ALGEBRA Standard:</b> Students will understand algebraic concepts and applications. <b>Benchmark: An</b> Understand patterns, relations, and functions.</p>	<p>3. Describe relationships of quantities in the form of mathematical expressions, equations, or inequalities. <i>Review and extend to multiplication and division</i></p> <p>1. Represent relationships of quantities in the form of mathematical expressions, equations, or inequalities. <i>Review and extend to multiplication and division</i></p>	<ul style="list-style-type: none"> <li>• Students will create their own addition, subtraction, multiplication, division, or mixed expressions by rolling two or three dice. (e.g., <math>3 \times 4</math> ___ <math>5 \times 5</math>) (Prob. Sol; Rep.)</li> </ul> <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> <li>• Students must solve their equations and determine what comparison symbol they should use. They will record their expressions in their math journal. (Prob. Sol; Comm.)</li> </ul> <p><b>Assessment:</b> Students submit equations from journals. Along with their equations students must describe and explain using words, numbers, or pictures the steps they took to solve the equations.</p>	Dice and math journal

**Portales Municipal Schools**  
**CURRICULUM MAP**

<b>Subject:</b>	Mathematics	<b>May 2009</b>	<b>Grade Level:</b>	Third Grade
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