

Portales Municipal Schools
CURRICULUM MAP

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| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
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| ESSENTIAL QUESTIONS: How does knowing place value help to read, write, and identify the value of whole numbers in different forms? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 1st Nine Weeks | <p>Strand 1: NUMBER AND OPERATIONS:</p> <p>Standard: Students will understand numerical concepts and mathematical operations.</p> <p>Benchmark A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</p> | <p>1. Exhibit an understanding of the place-value structure of the base-ten number system by reading, modeling, writing, and interpreting whole numbers up to 100,000; compare and order the numbers:</p> <p>Mastery</p> <ul style="list-style-type: none"> • recognize equivalent representations for the same number and generate them by decomposing and combining numbers (e.g., $853 = 8 \times 100 + 5 \times 10 + 3$; $853 = 85 \times 10 + 3$; $853 = 900 - 50 + 3$) <p>Mastery</p> | <p>Activity: What number am I? Students write clues that help answer the question. Each student describes a number by giving clues as to what digit is in each place value position.</p> <p>Assessment: Check student work by monitoring oral and written answers. (Prob Sol, Comm,)</p> <p>Activity: Students will construct a number using beans by grouping them in tens, one, and hundreds to make a number. A partner “reads” the number. Students read the numbers created by their classmates.</p> <p>Assessment: Check student work by assuring that bean representations match oral responses. (Comm, Rep)</p> <p>Activity: Students write a list of numbers and create numbers by placing the target numbers in the ones place, the tens place, the hundreds place and the thousands place. They share these with their classmates.</p> <p>Assessment: Have students write an explanation of place value to the thousands column. (Comm,)</p> <p>Activity: After discussing place value of numbers students will make a place value chart. Students write out large numbers into the place value chart.</p> <p>Students do a problem as a class such as: Marker Math: Julio has one set of ten markers and three sets of 100 markers. Serena has eight sets of ten markers and one set of 100 markers. Who has the most markers?</p> <p>Assessment: Students can provide an illustration of the problem and should reference his or her knowledge about place value in the explanation of the solution. (Prob Sol, R+P, Comm, Rep)</p> | <p>Harcourt TE p. 2B-11, 20B-29 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3</p> <p>beans</p> |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How do we use ordinal numbers in everyday life? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 1st Nine Weeks | <p>Strand 1: NUMBER AND OPERATIONS: Standard: Students will understand numerical concepts and mathematical operations.</p> <p>Benchmark A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p> | <ul style="list-style-type: none"> • identify the numbers less than 0 by extending the number line and using negative numbers through familiar applications (e.g., temperature, money) <p>Introduce</p> | <p>Read books about creating “big numbers” (e.g., Can You Count to a Googol by Robert E. Wells; <u>Big Numbers: And Pictures That Show Just How Big They Are</u> by Edward Packard. Discuss the way the big numbers are created and relate to place value.</p> <p>Activity: On blank flash cards, students write out numbers in word form (e.g., two thousand six hundred seventy-eight). Students shuffle the cards and split them into several stacks. Working in teams, students show each other the numbers in words and then race to represent the quantities correctly in numerical form. The first team with ten correct numbers wins.</p> <p>Assessment: Check numerical answers given by students for accuracy. (Comm, Rep)</p> <p>Activity: Students will construct a number line with positive and negative numbers and will apply mathematical concepts such as addition and subtraction using a number line.</p> <p>Assessment: Check for accuracy of sums and differences. (Rep)</p> | <p>Read books about creating “big numbers” (e.g., Can You Count to a Googol by Robert E. Wells; <u>Big Numbers: And Pictures That Show Just How Big They Are</u> by Edward Packard.</p> <p>Blank flashcards</p> <p>Harcourt TE: p. 420B-425 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 20.1, 20.2, 20.3</p> <p>http://www.mathplayground.com/ (This site includes several different sites that teach placement of negative numbers on a number line along with printable material.)</p> |

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How do we estimate the sums or differences of two-digit numbers? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 1st Nine Weeks | <p>Strand 1: NUMBER AND OPERATIONS:</p> <p>Standard: Students will understand numerical concepts and mathematical operations.</p> <p>Benchmark A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems</p> <p>Benchmark B. Understand the meaning of operations and how they relate to one another.</p> | <p>4. Recognize classes of numbers (e.g., odd, even, factors, multiples, square numbers) and apply these concepts in problem solving situations. Mastery</p> <p>1. Demonstrate an understanding of and the ability to use:</p> <ul style="list-style-type: none"> • standard algorithms for the addition and subtraction of multi-digit numbers Mastery | <p>Activity: After listening to <u>Even Steven and Odd Todd</u> by Kathryn Cristaldi students will dramatize the story.</p> <p>Activity: Students will read word problems to create and solve addition and subtraction problems using standard algorithms. Assessment: Check to assure that written problems are done correctly. (Prob Sol)</p> <p>Activity: After reviewing addition, students will use a pair of number cubes. After designating the first cube the “tens” and the other cube the “ones,” students roll the tens cube and record the digit, and then roll the ones cube to complete the two-digit number. Using this number as a “target,” students write as many addition number sentences as they can think of. For example, if a “1” and a “4” are rolled the target number is 14. Assessment: Give students target numbers to write number sentences to solve. Have students write number sentences for their classmates to solve. Have students place the number sentences in a math journal. Check journals for accuracy. (Prob Sol, Comm, Rep)</p> | <p><u>Even Steven and Odd Todd</u> by Kathryn Cristaldi</p> <p>http://illuminations.nctm.org/LessonDetail.aspx?id=L620 (This is a two person game to teach finding factors of numbers with printable resource.)</p> <p>http://www.mathplayground.com/wpindex.html (This site contains multidigit word problems for addition and subtraction.)</p> <p>Read with students <u>Domino Addition</u> by Lynette Long.</p> <p>Harcourt TE p.48B-55, p. 166B-167 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 3.1, 3.2, 3.3, 3.4, 3.5, 3.6</p> |

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CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
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|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How do we recognize what strategy to use for a specific problem? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 1st Nine Weeks | Strand 1: NUMBER AND OPERATIONS: Standard: Students will understand numerical concepts and mathematical operations. Benchmark B. Understand the meaning of operations and how they relate to one another. | 2. Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems. Mastery | Activity: Review the operations of addition, subtraction, multiplication and division. Students will plan a picnic. Their target number is the number of students in the class. Students will manipulate the picnic items to arrive at the target number. If there are twenty-five students in the class, for example, students will sort, classify, and count picnic items and select an operation to arrive at the target number for those items. For example, if there are 20 students who would like 2 hot dogs each and 5 who would like one hot dog each, the number sentence would read $(20 \times 2) + 5 = 45$ hotdogs Assessment: Have students write a paragraph explaining how they arrived at the target number. Check number sentences and paragraphs for accuracy. (Prob Sol, Comm, Rep) | Read aloud <u>One Hundred Hungry Ants</u> by Linor Pinczes. Harcourt TE p. 176B-177 Reteach, Practice, Challenge, Reading Strategy Workbooks Lesson 8.6 |

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

ESSENTIAL QUESTIONS: How does our knowledge about multiplication facts help us to solve problems?

| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
|----------------------------------|--|--|---|---|
| 1st Nine Weeks | <p>Strand 1: NUMBER AND OPERATIONS: Standard: Students will understand numerical concepts and mathematical operations.</p> <p>Benchmark C. Compute fluently and make reasonable estimates.</p> | <p>1. Demonstrate multiplication combinations through 12 x 12 and related division facts, and use them to solve problems mentally and compute related problems (e.g., 4 x 5 is related to 40 x 50, 400 x 5, and 40 x 500). Mastery</p> <p>2. Add, subtract, and multiply up to two double-digits accurately and efficiently. Introduce and Mastery</p> | <p>Activity: Students will discuss ways they might use multiplication and division operations in real life. Students will create cards with one multiplication fact or division fact. Students will be provided with one card each for either multiplication or division and then find the card with the related fact family. Example, the student with 3 x 4=12 would connect with the student who has 12 / 4=3.</p> <p>Assessment: Have students create a multiplication fact family book. Have them create a fact pages for the 0s, 1s, 2s etc. They could illustrate these and use for reference. The students could be paired and assigned specific fact families. Then the books could be placed in the classroom as references. Students could also make division fact books.</p> <p>(Comm, Con, Rep)</p> <p>Activity: Four to six students will write a two-digit addition, subtraction, or multiplication problem on the chalkboard as it is read aloud and race to solve the problem. (Prob Sol, Comm)</p> <p>Activity: Students are put into groups of five and tables are covered in one large piece of butcher paper. Students solve addition, subtraction, or multiplication problems that are given orally onto the butcher paper. The problems are checked and compared for accuracy within the group.</p> <p>Assessment: Each individual student is given similar addition or subtraction problems to work independently and checked for accuracy.</p> <p>(Prob Sol, Comm)</p> | <p><u>Math by all Means</u> by Marilyn Burns (multiplication); <u>Bats on Parade</u> by Kathi Appelt (division); <u>One Hundred Hungry Ants</u> and <u>A Remainder of One</u> by Elinor J. Pinczes (division)</p> <p><u>Amanda Bean's Amazing Dream</u> by Cindy Neuschwander.</p> <p>Harcourt TE p. 164B-165, 168B-169 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 8.1, 8.2, 8.3, 8.4</p> <p>Chalkboard and chalk, butcher paper</p> <p>Note: Focus for 1st nine weeks for multiplication is multiplying a 2-digit number by a 1-digit number.</p> <p>Harcourt TE p. 40B-41, 56B-57 Reteach Practice, Challenge, Problem Solving, Reading Strategy Workbooks Lesson 10.1, 10.2, 10.3, 10.5, 10.6</p> |

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Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
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|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How can understanding multiplication properties help us to solve problems? How can we estimate the answers for whole number computations? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 1st Nine Weeks | Strand 1: continue Benchmark B. Understand the meaning of operations and how they relate to one another. | 4. Demonstrate commutative, associative, identity, and zero properties of operations on whole numbers (e.g., $37 \times 46 = 46 \times 37$ and $(6 \times 2) \times 5 = 6 \times (2 \times 5)$). Introduce and Mastery | | Harcourt TE TE p. 68B-69, 174-175 Reteach, Practice, Challenge, Problem Solving Workbook Lesson, 4.2 8.5 http://www.rainforestmaths.com/ (game for learning properties) |
| | Benchmark C. Compute fluently and make reasonable estimates. | 3. Use a variety of strategies (e.g., rounding and regrouping) to estimate the results of whole number computations and judge the reasonableness of the answers. Mastery | Activity: Two students hold the ends of a long piece of string. One student is labeled 3,000 and the other is labeled 4,000. An index card labeled 3,500 is taped in the middle of the string. The remaining students hold an index card with a written number between 3,000 and 4,000. One at a time, students show where their number would appear on the number line. Students give their index card to the appropriate end student to show how the number would be rounded, and will explain why they chose that person. Assessment: Teacher will monitor students' choice of the person who represents the correct round number. (Prob Sol, Comm, Rep) Activity: Students find the middle of a ruler and balance it on a pencil to make a seesaw. Students are told that the middle of the ruler represents 25,000 units, that the left end of the ruler is 20,000, and that the right end is 30,000. Students estimate where on the ruler the number 27,500 would be, place a coin on that spot, and observe what happens to the ruler. Assessment: In written format, students will describe what happened with the ruler and tell which number 27,500 was closest to and why. Teacher will assess whether student demonstrates an understanding of what happened. (Comm, Rep) | Harcourt TE ESOL/ESL p. 30B p. 30B-31, 44B-45 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 2.4 Harcourt TE ATS p. 44B Harcourt TE AL p. 256B |

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Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How does understanding measurement of time help us in everyday life? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 1st Nine Weeks | <p>Strand 4 MEASUREMENT: Standard: Students will understand measurement systems and applications.</p> <p>Benchmark A. Understand measurable attributes of objects and the units, systems, and process of measurement.</p> <p>Benchmark B. Apply appropriate techniques, tools, and formulas to determine measurements.</p> <p>Strand 2: ALGEBRA Standard: Students will understand algebraic concepts and applications.</p> <p>Benchmark A. Understand patterns, relations, and functions.</p> | <p>6. Carry out simple conversions within a system of measurement (e.g., hours to minutes, meters to centimeters).</p> <p>5. Compute elapsed time and interpret schedules.</p> <p>4. Use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences:</p> <ul style="list-style-type: none"> • use letters, boxes, or other symbols to stand for any number in simple expressions or equations (e.g., demonstrate an understanding of the concept of a variable) <p>Mastery</p> <ul style="list-style-type: none"> • interpret and evaluate mathematical expressions using parentheses <p>Mastery</p> | <p>Activity: Students will work with a partner to choose a destination and select flights to travel to that destination. Students should also decide on their arrival time at the airport and determine the travel time from home to the airport. Students will display their plans on a poster, showing elapsed time for each part of the trip.</p> <p>Assessment: The teacher will check posters for accuracy of elapsed time intervals. (Prob Sol, Comm, Con, Rep)</p> <p>Activity: Students will visualize the use of variables. After hearing a word problem read aloud, (e.g., Mario had 10 marbles and he gave some to his friend. Then he had 4 marbles left.), students will use index cards to represent each number in the equation. They will use a box or letter on an index card to represent the missing variable and another for the equal sign. One group of students can stand in front of the class with each student holding up one of the index cards to create an equation with their cards.</p> <p>Assessment: After group practice, teacher will give a word problem with a variable orally, and individual students will write the matching equation on paper. Teacher will check individual equations for accuracy. (Rep)</p> | <p>Harcourt TE p. 96B-97 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 5.1</p> <p>Harcourt TE AL p. 98B Posterboards, airline schedules</p> <p>See also Harcourt TE pp. 98B-101, 102B-103, 104B-107 Reteach, Practice, Challenge Problem Solving Workbooks Lesson 5.2, 5.3, 5.4</p> <p>Blank index cards</p> <p>Harcourt TE p. 64B-65, 70B-71, 80B-81, 184B-187, 192B-193 Reteach, Practice, Challenge, Problem Solving, Reading Strategy Workbooks Lesson 4.1, 4.3, 4.6, 9.1, 9.2, 9.4</p> |

Portales Municipal Schools
CURRICULUM MAP

| | | | |
|-----------------------------|------------------|---------------------|--------------|
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|-----------------------------|------------------|---------------------|--------------|

| ESSENTIAL QUESTIONS: How can we write and solve equations that contain variables? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 1st Nine Weeks | Strand 2: ALGEBRA Standard: Students will understand algebraic concepts and applications. Benchmark B. Represent and analyze mathematical situations and structures using algebraic symbols | 1. Identify symbols and letters that represent the concept of a variable as an unknown quantity. 2. Explore the uses of properties (commutative, distributive, associative) in the computation of whole numbers. 3. Express mathematical relationships using equations. 4. Determine the value of variables in simple equations. (e.g., $80 \times 15 = 40 \times$). | | Harcourt TE TE p. 174,175, 188B-189 Reteach, Practice, Challenge Workbook Lesson 8.5, 9.3 http://www.rainforestmaths.com/ (game for learning properties) |

Portales Municipal Schools
CURRICULUM MAP

| | | | | |
|-----------------|-------------|------------------|---------------------|--------------|
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|-----------------|-------------|------------------|---------------------|--------------|

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| ESSENTIAL QUESTIONS: How can multiples be used to solve problems? How can the distributive property help you to solve multiplication problems? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 2nd Nine Weeks | <p>Strand 1: NUMBER AND OPERATIONS</p> <p>Standard: Students will understand numerical concepts and mathematical operations.</p> <p>Benchmark A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</p> <p>Benchmark B. Understand the meaning of operations and how they relate to one another.</p> | <p>4. Recognize classes of numbers (e.g., odd, even, factors, multiples, square numbers) and apply these concepts in problem solving situations. Mastery</p> <p>5. Demonstrate the concept of distributive of multiplication over addition and subtraction (e.g., 7×28 is equivalent to $(7 \times 20) + (7 \times 8)$ or $(7 \times 30) - (7 \times 2)$).</p> | <p>Activity: After being introduced to the concept of squaring numbers and finding square roots student will discuss the similarities between squares and square roots. Students will create a two column chart to illustrate basic square roots. The students will place the squared numbers in the first column and the square roots in the second column.</p> <p>Assessment: The teacher will check charts for accuracy. (Rep)</p> <p>Activity: Students will model 4×13 by making an array of 4 rows of 13 counters. They will show each row of 13 as $10 + 3$ by showing the first 10 counters as red and the last 3 counters in each row as yellow. Students will write multiplication expressions to represent the array of red counters and the yellow counters (e.g. red: 4×10, yellow: 4×3). The students will write the number of red counters, the number of yellow counters and total number of counters in the array.</p> <p>Assessment: Students' understanding will be assessed by being given additional problems to model with counters. The teacher will check written expressions of</p> | <p>http://www.funbrain.com/tictactoe/index.html (interactive game to practice square numbers).</p> <p>Harcourt TE p. 338B-341 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 16.2 (factors and multiples)</p> <p>Harcourt TE p. 236B-241 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 11.1, 11.2, 11.3</p> |

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Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
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|-----------------------------|------------------|----------------------------------|

| | | additional problems for accuracy. (Rep) | | |
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| ESSENTIAL QUESTIONS: What methods do we use to compute multiplication and division problems? How can we decide if an estimate is reasonable? | | | | |
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 2nd Nine Weeks | <p>Strand 1: NUMBER AND OPERATIONS: Standard: Students will understand numerical concepts and mathematical operations.</p> <p>Benchmark B. Understand the meaning of operations and how they relate to one another.</p> <p>Benchmark C. Compute fluently and make reasonable estimates.</p> | <p>1B1 continued</p> <ul style="list-style-type: none"> • standard algorithms for multiplying a multi-digit number by a two-digit number and for dividing a multi-digit number by a one-digit number <p>Mastery</p> <p>2. Add, subtract, and multiply up to two double-digits accurately and efficiently. Introduce and Mastery</p> <p>3. Use a variety of strategies (e.g., rounding and regrouping) to estimate the results of whole number computations and judge the reasonableness of the answers. Review and Introduce</p> | <p>Activity: In groups, students will each take two index cards. On one card each will write a two digit number. On the other card each will write a three digit number. They will place all two digit numbers in one bag and all 3 digit numbers in another. A student will draw one card from each bag and practice finding the product. (Same activity will also work for dividing a multi-digit by a one digit.) Assessment: Check students' written answers for accuracy. (Prob Sol, Comm)</p> <p>Activity: Students are placed in groups. Each group is given three number cubes. Students roll three number cubes to write a 3-digit number. Then the students roll two number cubes to write a 2-digit number. Students will round the numbers to their greatest place value and find the estimated product. Assessment: Teacher will check for accuracy of</p> | <p>Harcourt TE AL p. 256B</p> <p>2 index cards per student, 2 bags per group</p> <p>http://www.funbrain.com/math/index.html (fun interactive game to practice addition, subtraction, multiplication, and division at various levels of difficulty)</p> <p>Harcourt TE p. 250-265 Reteach, Practice, Challenge Workbook Lesson 12.1, 12.2, 12.3, 12.4, 12.5</p> <p>Harcourt TE p.278-285 p. 298-305 Reteach, Practice, Challenge, Workbook Lesson 13.1, 13.2, 13.3, 14.2, 14.3, 14.4</p> <p>Harcourt TE p. 242B-243, 296B-297 Reteach, Practice, Challenge Workbook Lesson 11.4 (estimating products), 14.1</p> |

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Portales Municipal Schools
CURRICULUM MAP

| | | | | |
|-----------------|-------------|------------------|---------------------|--------------|
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|-----------------|-------------|------------------|---------------------|--------------|

| | measurements. | | Teacher will assure that measurements are correct. (Prob Sol, Rep) | Lesson 17.2 |
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| ESSENTIAL QUESTIONS: What is symmetry? How can we identify and describe geometric solids? What is the difference between parallel and perpendicular lines? | | | | |
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 2nd Nine Weeks | Strand 3: GEOMETRY Standard: Students will understand geometric concepts and applications. Benchmark A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and development mathematical arguments about geometric relationships | 1. Identify, compare, and analyze attributes of two- and three-dimensional shapes and develop vocabulary to describe the attributes: <ul style="list-style-type: none"> • <i>build, draw, create,</i> and describe geometric objects Mastery • identify lines that are parallel or perpendicular Mastery • identify and compare congruent and similar figures. Mastery | Activity: The students discuss what a line is and understand that a line goes on forever in two directions. Students will review what parallel lines are. Using two licorice strips students will demonstrate what parallel lines look like. The students will discuss what perpendicular lines are. They will demonstrate with their candy. After being introduced to the concept of angles as two rays that join together at a vertex, they will use three pipe cleaners and manipulate them to make different angles after each type is introduced. Students can keep a class chart of the associated vocabulary terms and their definition, e.g. ray, line, line segments, acute angle, etc. Assessment: Have students choose a type of line or angle and write a riddle so that one of their classmates can guess which line or angle they are describing. Check written riddles and guesses do make sure that they match. (Comm, Con, Rep) Activity: Students will write the following names on index cards: triangle, quadrilateral, pentagon, hexagon, and octagon. The students will take turns selecting a card and use a geoboard to construct the polygon named on the card. Students will explain orally how they made the polygon named, and will tell whether it is regular or not regular. Assessment: The students will construct one of each type of polygon and will record and label them on geoboard dot paper telling if each is regular or not regular. Teacher will check labels on dot paper for accuracy. (Comm, Rep) Activity: After teacher discusses with students about the books they see in the school library that are the same size and shape, the students will think of other places in school or at home where they see the same sizes and shapes (e.g. a set of dinner plates, school cafeteria trays, | Harcourt TE p. 364B-365 p. 370B-371 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 17.1 and 17.3 Read <u>The Patch Work Quilt</u> by Valerie Flournoy. Bring pictures of various quilt patterns to class. Have students look at the lines and angles in the patterns. Have them identify them. Licorice sticks, pipe cleaners, index cards for vocabulary chart Harcourt TE ATS p. 380B geoboard, geoboard dot paper (p.TR54), index cards Harcourt TE p. 402B-403 Reteach, Practice, Challenge, Problem Solving Workbook Lesson 19.2 |

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Portales Municipal Schools
CURRICULUM MAP

| | | | |
|-----------------------------|--|------------------|----------------------------------|
| Subject: Mathematics | | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|--|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: What are the characteristics of geometry? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 2nd Nine Weeks | <p>Strand 3: GEOMETRY (cont.)</p> <p>Benchmark B. Specify locations and describe special relationships using coordinate geometry and other representational systems.</p> <p>Benchmark C. Apply transformations and use symmetry to analyze mathematical situations.</p> | <p>1. Describe location and movement using common language and geometric vocabulary. Mastery</p> <p>1. Create and describe rotational designs using language of transformational symmetry. Review and Introduce</p> <p>2. Describe a motion or set of motions that will show that two shapes are congruent. Review and Introduce</p> | <p>(cont.) etc.) The students will list objects that they can think of that are the same shape and size and learn that these objects are said to be congruent.</p> <p>After the teacher holds up two pieces of construction paper, each with a triangle (of the same exact size) outlined in black and cuts out one of the triangles and place on top of the other, demonstrating to the students that the triangles are congruent, the students restate in their own words, the meaning of “congruent”. The students are given several figures and choose which ones are congruent, which ones are not. They will share with each other how they tested for congruency.</p> <p>Assessment: Have students draw two congruent shapes and list the ways that they are congruent. (Comm, Prob Sol, Con, Rep)</p> <p>Activity: Students will write the following terms on three cards each: translation, reflection, rotation. Students will model these terms using a pattern block. One student will shuffle the cards and place them face down. Each player will choose a different pattern block. Players take turns drawing a card and then carrying out the action described on the card, while the other players watch and record the action.</p> <p>Assessment: Have students compare their papers once all of the cards have been used. Teacher will monitor and check the students’ papers for accuracy. (Comm, Con, Rep)</p> | <p>Harcourt TE ATS p. 406B Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 19.4</p> |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

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|-----------------------------|--|------------------|----------------------------------|
| Subject: Mathematics | | June 2007 | Grade Level: Fourth Grade |
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ESSENTIAL QUESTIONS: How do we locate points on a coordinate grid?

| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials | | | | | | | | | | |
|--|--|--|--|---------------------|-----|----|----|----|----|----|----|----|--|--|
| 3rd Nine Weeks | <p>Strand 3 GEOMETRY Standard: Students will understand geometric concepts and applications.</p> <p>Benchmark B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.</p> | <p>2. Use ordered pairs to graph, locate, identify points, and describe paths in the first quadrant of the coordinate plane. Mastery</p> <p>3. Use a variety of methods for measuring distances between locations on a grid. Mastery</p> | <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="padding: 2px;">In</td><td style="padding: 2px;">Out</td></tr> <tr><td style="padding: 2px;">19</td><td style="padding: 2px;">15</td></tr> <tr><td style="padding: 2px;">14</td><td style="padding: 2px;">10</td></tr> <tr><td style="padding: 2px;">38</td><td style="padding: 2px;">34</td></tr> <tr><td style="padding: 2px;">12</td><td style="padding: 2px;"></td></tr> </table> <p>Function= $n - 4$</p> <p>The students will write the function on a sentence strip and paste it on the function machine. Students take turns giving the next set of input and output numbers to illustrate another function. Assessment: Monitor whole group activity for understanding. (Prob Sol, Rep)</p> <p>Activity: Students will be given a list of coordinates to plot on graph paper. The coordinates will create a picture if plotted correctly. Assessment: Teacher will check graph papers for correctly plotted pictures. (Rep)</p> | In | Out | 19 | 15 | 14 | 10 | 38 | 34 | 12 | | <p>http://www.funbrain.com/co/index.html(What's the Point is an interactive game to teach coordinates on a plane.)</p> <p>graph paper, teacher created pictures with matching coordinates to plot</p> <p>Harcourt TE p. 430B-431 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 20.6</p> <p>Harcourt TE Lesson NM-3, Distance on a Coordinate Grid p. NM6-NM7</p> |
| In | Out | | | | | | | | | | | | | |
| 19 | 15 | | | | | | | | | | | | | |
| 14 | 10 | | | | | | | | | | | | | |
| 38 | 34 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How do we compare and order fractions? What are the steps in finding equivalent fractions? | | | | |
|--|---|--|--|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | Strand 1: NUMBER AND OPERATIONS Standard: Students will understand numerical concepts and mathematical operations Benchmark A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems. | 2. Identify fractions as parts of unit wholes, as parts of groups, and as locations on number lines; Review and Introduce <ul style="list-style-type: none"> • Use visual models and other strategies to compare and order commonly used fractions • Use models to show how whole numbers and decimals (to the hundredths place) relate to simple fractions (e.g., $\frac{1}{2}$, $\frac{5}{10}$, and 0.5) • Identify different interpretations of fractions: <ul style="list-style-type: none"> -Division of whole numbers by whole numbers -Ratio -Equivalence -Ordering of fractions -Parts of a whole or parts of a set | Activity: Students will draw a number line and mark 0 to 1 using the one-whole fraction bar to compare and order fractions. Students will use the $\frac{1}{3}$ fraction bars to mark $\frac{2}{3}$ on the number line. Students will use the $\frac{1}{5}$ fraction bars to mark $\frac{3}{5}$ on the same number line, and use the $\frac{1}{6}$ fraction bars to mark $\frac{3}{6}$. Students are told that for $\frac{3}{6}$, $\frac{3}{5}$, and $\frac{2}{3}$, the fractions become less as you move left on the number line and greater as you move right. Assessment: Students are given other fractions to model on the number line and will compare and order them. Teacher will check for accuracy. (Prob Sol, Rep) Activity: Using calculators, students will enter each fraction as a division problem to generate a decimal equivalent. Assessment: Students are given additional fractions to find the equivalent decimals and will write their answers. Teacher will check written answers for accuracy. (Comm, Con, Rep) Activity: Each student will have from the “Hershey Fraction Book” a copy of the page showing a complete candy bar in color and laminated cut out pieces of “chocolate”, placed in baggies. Students will remove all pieces from the baggie and place them on their desks. The students will manipulate the pieces to form the fraction that the teacher calls out. Fractions will range from $\frac{1}{8}$ to $\frac{8}{8}$. The class will discuss possibilities for reducing the fractions to lower terms. | Fraction bars Harcourt TE ATS p. 452B, p.TR 19(fraction bars) Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 21.4 Harcourt TE Technology p.560B p. 560B-563, p. 564B-565, p. 568B-571 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 26.1, 26.2,and 26.4 calculators <u>Math Curse</u> by John Scieszka. Discuss the various fractions in the story. <u>Hershey Fraction Book</u> Baggies Harcourt TE p. 446B-447, p.448B-455 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 21.1, 21.2, 21.3 |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How do numbers less than zero relate to everyday life? How do we use a number line to locate negative and positive numbers? | | | | |
|---|--|--|---|--|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | Strand 1: NUMBER AND OPERATIONS Standard: Students will understand numerical concepts and mathematical operations Benchmark C. Compute fluently and make reasonable estimates. | (Cont.) <ul style="list-style-type: none"> • Identify the numbers less than zero by extending the number line and using negative numbers through familiar applications (e.g., temperature, money) Introduce | <p>Activity: After a discussion about thermometers as a vertical number line, students will verbally describe the similarities between a vertical and horizontal number line. Students will practice finding differences between numbers on the horizontal number line including negative numbers. Then students will use the thermometer to do the same including negative numbers as well.</p> <p>Assessment: Students will be given both a vertical and horizontal number line and will be asked to find the difference between 3 pairs of numbers on each. Teacher will check written work for accuracy. (Prob Sol, Con, Rep)</p> | Fahrenheit thermometer Harcourt TE: p.420B-429 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 20.1-20.5 |
| | | 4. Use strategies to estimate computations involving fractions and decimals. Introduce | <p>Activity: After reviewing the concept of decimals, students will practice reading, writing and rounding decimals. The students will create a decimal matching game by writing the names of decimal numbers on one set of cards, decimal numerals on the second set of cards, and the rounded value of the decimal numbers on the third set of cards.</p> <p>For Example: name: seventy-nine hundredths, decimal number: 0.79, rounded number: 8After cards have been distributed to students, they will find the two other students who are holding “matching” cards. When all matches have been found, each group will read their decimal number and then give the rule for rounding the number to the value shown on the third card.</p> <p>Assessment: Each student will be given four sets of cards to match. Teacher will check matched cards for accuracy. (Con, Rep)</p> | Index cards Harcourt TE: p. 584B-595 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 27.1, 27.2 |

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: What steps do we use to add and subtract decimal numbers? How is the probability of an event determined and described? | | | | |
|--|---|---|--|--|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | <p>Strand 1: NUMBER AND OPERATIONS</p> <p>Standard: Students will understand numerical concepts and mathematical operations.</p> <p>Benchmark B. Understand the meaning of operations and how they relate to one another.</p> <p>Strand 5: DATA ANALYSIS AND PROBABILITY</p> <p>Standard: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>Benchmark D. Understand and apply basic concepts of probability.</p> | <p>3. Extend the uses of whole numbers to the addition and subtraction of simple decimals (positive numbers to two places).</p> <p>1. Describe events as “likely,” “unlikely,” or “impossible” and quantify simple probability situations: Review and Master</p> | <p>Activity: Students will find the sum or difference of problems like $1.67 + 2.95$ using an index card for each digit and a button for each decimal point.</p> <p>Assessment: Students will be given five problems to add or subtract and teacher will check for accuracy of answers. (Prob Sol, Rep)</p> <p>Activity: To introduce the concept of probability, students are shown that you have 1 white marble, 1 red marble, and 2 blue marbles. The marbles are put into a small paper bag and the students predict which color a person would most likely draw. The bag is passed around the room and each student draws a marble and then replaces the marble back in the bag each time. On the board, a tally is kept of each color that is drawn. The students are helped to understand that while it was possible to draw a white or red marble it wasn't probable.</p> | <p>Index cards</p> <p>Harcourt TE p. 588B-595 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 27.3, 27.4, 27.5</p> <p>White marble, red marble, 2 blue marbles, paper bag Harcourt TE p. 490B-501 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 23.1, 23.2, 23.3, 23.4</p> <p><u>Probably Pistachio</u> (Mathstart: Probability, Level 2) by Stuart J.</p> |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| | | After being introduced the concept of a | Murphy | |
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| ESSENTIAL QUESTIONS: How can we collect, organize, and display data? | | | | |
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | <p>Strand 5: DATA ANALYSIS AND PROBABILITY</p> <p>Standard: Students will understand how to formulate questions, analyze data, and determine probabilities.</p> <p>Benchmark D. Understand and apply basic concepts of probability.</p> | <p>Cont.</p> <ul style="list-style-type: none"> • represent all possible outcomes for a simple probability situation in an organized way (e.g., tables, grids, tree diagrams) <p>Introduce</p> <ul style="list-style-type: none"> • express outcomes of experimental probability situations <i>verbally</i> and numerically (e.g., three out of four, $\frac{3}{4}$) <p>Review</p> <p>2. List all the possible combinations of objects from three sets (e.g., spinners, numbers of outfits from three different shirts, two skirts, and two hats).</p> <p>Introduce</p> | <p>frequency table, the students chart probability outcomes on a frequency table.</p> <p>Assessment: Students are told they have a bag containing 1 red marble, 1 blue marble, and 1 green marble and then asked if it would be equally likely, more likely, or less likely that a green marble would be drawn? The students will each write an explanation of their answer choice and the teacher checks for reasonable answers.</p> <p>(Prob Sol, R+P, Comm, Rep)</p> <p>Activity: Students will use index cards to make a tree diagram and find the possible choices of the frozen yogurt and topping choices given on p. 500 of Harcourt SE. Students will write each yogurt flavor on an index card. They will place these cards on their desks in a row and then write the name of each topping on the index cards making sure that each yogurt flavor is matched with each topping flavor. The students will write out each combination on separate index cards to complete the tree</p> | <p>Index cards, markers</p> <p>Harcourt TE p. 500B-503 Reteach, Practice, Challenge, Reading Strategy, Problem Solving Workbooks Lesson 23.5 and 23.6</p> |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: What are the customary and metric units of measurement? How can we convert customary and metric units? | | | | |
|--|---|--|--|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | <p>Strand 4 MEASUREMENT: Standard: Students will understand measurement systems and applications.</p> <p>Benchmark A. Understand measurable attributes of objects and the units, systems, and process of measurement.</p> | <p>6. Carry out simple conversions within a system of measurement (e.g., hours to minutes, meters to centimeters). Introduce</p> <p>2. Understand the need for measuring with standard units and become familiar with the standard units in customary and metric system. Master and Introduce</p> | <p>Cont. Assessment: Teacher will check tree diagrams for accuracy. (Comm, Rep)</p> <p>Activity: Students are shown household objects and estimate the length of the object in standard measurement. Students will check their estimations by measuring the actual objects. Students will convert the actual standard measurement to a metric measurement. Students will put the pictures of the objects in order from least to greatest. Assessment: Students will measure in standard form three different objects in the classroom and convert the measurements to metric. Teacher will check converted measurements for accuracy. (Prob Sol, Rep)</p> <p>Activity: Students will have a discussion about different professions that involve using standard measurements. They will make a list of these professions and will share lists and examples with one another. After sharing orally, students will create a “gallon guy” as referred to in teachnet.com. Assessment: Teacher will check for accurate assembly of “gallon guy.” (Comm, Con, Rep)</p> | <p>Household objects, ruler with standard and metric measurement</p> <p>www.teachnet.com/lesson/math/units052499.html (a resource to help remember measurement of liquids)</p> <p>Harcourt TE p. 526B-533 Reteach, Practice, Challenge, Problem Solving, Reading Strategy Workbooks Lesson 24.3, 24.4, 24.5. 24.6 p. 544B-545 Lesson 25.2</p> <p>Harcourt TE p. 540B-541, 546B-549 Reteach, Practice, Challenge, Problem Solving Lesson 25.1, 25.3, 25.4 www.teachnet.com/lesson/math/units052499.html (a resource to help remember measurement of liquids by assembling a “gallon guy”).</p> |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How can we estimate and measure objects using customary units of measurement? | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|--|---------------------|--------|------|------------|--|--|--------|--|--|---------------|--|--|------|--|--|----------------|--|--|--|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials | | | | | | | | | | | | | | | | | | |
| 3rd Nine Weeks | <p>Strand 4 MEASUREMENT: Standard: Students will understand measurement systems and applications.</p> <p>Benchmark A. Understand measurable attributes of objects and the units, systems, and process of measurement.</p> | <p>3. Identify the inverse relationship between the size of the units and the number of units.</p> | <p>Activity: Students will fill in a chart as they measure items of different lengths from their list, e.g., paper clip, pencil, student’s arm, student’s body, classroom door. The chart will provide a place for the name of each object and separate columns for writing in the length of the object using different units of measurement.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 40%;">Object name</th> <th style="width: 20%;">inches</th> <th style="width: 20%;">feet</th> </tr> </thead> <tbody> <tr> <td>Paper clip</td> <td></td> <td></td> </tr> <tr> <td>pencil</td> <td></td> <td></td> </tr> <tr> <td>Student’s arm</td> <td></td> <td></td> </tr> <tr> <td>body</td> <td></td> <td></td> </tr> <tr> <td>Classroom door</td> <td></td> <td></td> </tr> </tbody> </table> <p>Assessment: After filling in the chart, students will observe and analyze their measurements and will write an explanation of the relationship between the size of the object and the number of each unit needed. Teacher will check written work for reasonable explanations. (Prob Sol, Comm, Rep)</p> | Object name | inches | feet | Paper clip | | | pencil | | | Student’s arm | | | body | | | Classroom door | | | <p>Objects of various lengths, ruler</p> |
| | Object name | inches | feet | | | | | | | | | | | | | | | | | | | |
| Paper clip | | | | | | | | | | | | | | | | | | | | | | |
| pencil | | | | | | | | | | | | | | | | | | | | | | |
| Student’s arm | | | | | | | | | | | | | | | | | | | | | | |
| body | | | | | | | | | | | | | | | | | | | | | | |
| Classroom door | | | | | | | | | | | | | | | | | | | | | | |
| <p>Benchmark B. Apply appropriate techniques, tools, and formulas to determine measurements.</p> | <p>3. Estimate, measure, and solve problems involving length, area, mass, time, and temperature using appropriate standard units and <i>tools</i>.</p> | <p>Activity: The students will estimate and measure the distance from their desk to the classroom door using their foot as the unit of measure. They will record their estimate and the actual distance. Students will compare results with one another. Students will estimate and measure the same distance in feet using a tape measure or yardstick. They will record their estimate and the actual distance and compare once again with classmates.</p> | <p>tape measure , yardstick</p> <p>Harcourt TE p. 518B-525, 550B-551, 628B-629 Reteach, Practice, Challenge, Problem Solving, Reading Strategy Workbooks Lesson 24.1, 24.2, 25.5, 29.1</p> | | | | | | | | | | | | | | | | | | | |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How do we find area? | | | | |
|--|---|---|--|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | <p>Strand 4 MEASUREMENT: Standard: Students will understand measurement systems and applications.</p> <p>Benchmark B. Apply appropriate techniques, tools, and formulas to determine measurements.</p> <p>Benchmark A. Understand measurable attributes of objects and the units, systems, and process of measurement.</p> | <p>1. Estimate perimeters, areas of rectangles, triangles, and irregular shapes. Introduce</p> <p>2. Find the area of rectangles, related triangles, and parallelograms. Review and Introduce</p> <p>5. Develop, understand, and use formulas to find the area of rectangles and related triangles and parallelograms. Introduce</p> | <p>Cont. Assessment: Students will explain in writing how their estimate compared to the distance they found by using a tape measure or yardstick. The teacher will check written explanations for reasonableness. (Prob Sol, Comm, Rep)</p> <p>Activity: In pairs, students will find one flat rectangular shaped object and one flat squared shaped object in the classroom. They will measure and use a formula to find the perimeter of one face of each object. Measurements are recorded. Student pairs will exchange objects and then estimate the perimeter of the face the other pair measured. The other pair then tells the actual measurement. Assessment: Teacher will monitor and check estimates and actual measurements for accuracy. (Prob Sol, Rep)</p> | <p>Classroom objects</p> <p>Harcourt TE p. 612B-617, 628B-635 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 28.1, 28.2, 28.4, 29.1, 29.2, 29.3</p> <p>Harcourt TE Lesson NM-5, Find Area of Related Shapes p. NM10-11 p. 620B-621 Reteach, Practice, Challenge, Reading Strategy Workbooks Lesson 28.4</p> |

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: What is the relationship between area and perimeter? | | | | |
|--|--|--|---|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | Strand 3: GEOMETRY Standard: Students will understand geometric concepts and applications. Benchmark D. Use visualization, spatial reasoning, and geometric modeling to solve problems. | 3. Explore relationships involving perimeter and area: Review and Introduce <ul style="list-style-type: none"> • measure area of rectangular shapes and use appropriate units • recognize that area can have the same perimeter but different areas and vice versa • use models and formulas to solve problems involving perimeter and area of rectangles and squares (e.g., arrays) | Activity: In pairs, students will make two rectangular figures on a geoboard that have the same area but different perimeters. They will record the figures on dot paper and label the length, width, area, and perimeter of each figure. Students will model two rectangular figures that have the same perimeter but different areas. They will record the figures on dot paper and label the length, width, area, and perimeter of each figure. Assessment: Students will explain in writing how they decided that the perimeters would be the same while the areas would be different. Teacher will assess written work. (Prob Sol, R+P, Comm, Con, Rep) | Geoboards for each pair, rubber bands, dot paper (p. TR40) Harcourt TE p. 612B-613, 630B-635 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 28.1, 29.2, 29.3 |

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

ESSENTIAL QUESTIONS: What is the formula to find the area of a given plane figure?

| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
|-------------------------------|--|--|--|---|
| 3rd Nine Weeks | <p>Strand 2: ALGEBRA</p> <p>Standard: Students will understand algebraic concepts and applications.</p> <p>Benchmark C. Use mathematical models to represent and understand quantitative relationships.</p> <p>Benchmark B. Represent and analyze mathematical situations and structures using algebraic symbols.</p> | <p>3. Use and interpret formulas (e.g., Area = Length x Width or $A = L \times W$) to answer questions about quantities and their relationships. Introduce</p> <p>5. Develop simple formulas in exploring quantities and their relationships (e.g., $A = L \times W$). Introduce</p> | <p>Activity: In pairs students will use dot paper to find a pattern in the changing area of a figure. Students will make a table with columns for width, length, and area. They will model a 2 by 2 unit square on dot paper and write the width and length for this figure in the table. They will use the formula $A = L \times W$ to find the area of the figure and will record it in the table as well. Students will increase the length of one side of the figure by 1 unit on dot paper and record the width, length, and area in the table. Students will continue to increase the length of one side by 1 unit and record the dimensions five more times.</p> <p>Assessment: Students will visualize and describe a pattern noticed as the lengths of the sides increased by 1. Teacher will review written descriptions and check for reasonableness. (Prob Sol, Comm, Rep)</p> | <p>Dot paper</p> <p>Harcourt TE p. 630B-633, p. 636B-637 Reteach, Practice, Challenge, Reading Strategy, Problem Solving Workbooks Lesson 29.2, 29.4</p> |

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Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: What are ways we can identify solid figures? | | | | |
|--|--|---|--|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | <p>Strand 3: GEOMETRY</p> <p>Standard: Students will understand geometric concepts and applications.</p> <p>Benchmark A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.</p> | <p>2. Classify two- and three-dimensional shapes according to their properties and develop definitions of classes like triangles and pyramids: Review and Introduce</p> <ul style="list-style-type: none"> • visualize, describe, and make models of geometric solids in terms of the number of faces, edges, and vertices • interpret two-dimensional representations of three-dimensional objects <p>3. Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions.</p> | <p>Activity: Students will brainstorm the names of various two- and three-dimensional figures and will provide real-life examples of each. Students will discuss how the figures are similar and different. Students will visit the playground, computer lab and/or library, and on index cards, draw objects they see that are two- and three-dimensional. After the cards are collected, students will answer either “two-dimensional” or three-dimensional” in response to the card that is held up for them. Students will explain their reasoning.</p> <p>Assessment: Have students choose a cube and a square or a circle and a sphere or a pyramid and a triangle and describe the difference. (R+P, Comm, Con, Rep)</p> | <p>index cards, geometric solids</p> <p><u>Explore Cubes, Cones, Cylinders, & Spheres</u> by Tana Hoban. Have students identify other objects that have these three dimensional shapes.</p> <p>Harcourt TE p. 644B-649 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 30.1, 30.2</p> |

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Portales Municipal Schools
CURRICULUM MAP

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| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
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| ESSENTIAL QUESTIONS: How can we identify and describe solid figures by describing the faces, edges, and sides? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | <p>Strand 3: GEOMETRY</p> <p>Standard: Students will understand geometric concepts and applications.</p> <p>Benchmark D. Use visualization, special reasoning, and geometric modeling to solve problems.</p> | <p>1. Develop and use mental images of geometric shapes to solve problems (e.g., represent three-dimensional shapes in two-dimensions). Mastery</p> <p>2. Use geometric models such as number lines, arrays, and <i>computer simulations</i> to investigate number relationships (e.g., patterns). Mastery</p> | <p>Activity: In pairs, students will review the vocabulary in the chapter: two-dimensional, three-dimensional, triangular prism, triangular pyramid, face, edge, and vertex. In pairs, students will make two sets of flash cards. Each flashcard should have an illustration of a term on one side and the term itself written on the other side. Students will spread out one set of cards with the words face up and the other set with the illustrations face up. Students will take turns matching a word to an illustration saying the word when they make a match. Assessment: Teacher will monitor and check to make sure cards are matched correctly. (Rep)</p> <p>Activity: Students will draw and label arrays to show square numbers and the square roots of numbers. Students will draw square arrays and identify the number of equal rows and columns in their arrays. Students will then label their drawings to show what square number they formed, and what square root their array shows. Assessment: Teacher will check arrays and labels to see if they match correctly. (Rep)</p> | <p>Index cards (14 each pair)</p> <p>Harcourt TE p. 644B-647 Reteach, Practice, Challenge, Problem Solving Lesson 30.1</p> <p>Sheets of paper, markers (for each group)</p> <p>Harcourt TE p. 348B-349, 424B-425 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 16.5, 20.3</p> |

Portales Municipal Schools
CURRICULUM MAP

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|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How can we make, read, and interpret graphs? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | <p>Strand 5: DATA ANALYSIS AND PROBABILTIY</p> <p>Standard: Students will understand how to formulate questions, analyze data and determine probabilities.</p> <p>Benchmark A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.</p> | <p>1. Organize, represent, and interpret numerical and categorical data and clearly communicate findings: Review</p> <ul style="list-style-type: none"> • choose and construct representations that are appropriate for the data set • recognize the differences in representing categorical and numerical data <p>Introduce</p> <p>2. Design investigations and represent data using table and graphs (e.g., line plots, bar graphs, and line graphs). Review and Introduce</p> | <p>Cont. Assessment: Teacher monitors the development of student constructed graph and will assess the graph for accuracy. (Con, Rep)</p> <p>Activity: After explaining to students that companies often use graphs to track profits and sales for their business, students will plan a presentation based on the following information: They are the managers of a toy company who must make a presentation to the board of directors. They need to discuss the change in sales during the past year and also show which toys sold the most and least over the past year. Students will write about their presentation, tell which graphs they would use, and also draw their graphs based on their made-up data. Assessment: Teacher will review written work. (Prob Sol, Comm, Con, Rep) Activity: In pairs, students will use blank grid paper to make a line graph about temperature in degrees Celsius. Students will use rulers to draw and label the left side and bottom of the graph. They will use a scale of 0-100, with an interval of 10. Students will determine where the graph should be placed so that it fits on the page. They will choose a title and labels for the graph and then complete the graph. (Prob Sol, Rep) Assessment: Teacher will check graphs for accuracy.</p> | <p>Harcourt TE p. 114B-117, 144B-147 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 6.1, 7.5</p> <p>Blank grid paper, p. TR63</p> <p>Harcourt TE p. 122B-123, p. 136B-137, p. 140B-141 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 6.3, 7.1, 7.3</p> |

Portales Municipal Schools
CURRICULUM MAP

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|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
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ESSENTIAL QUESTIONS: How is the mean, median, and mode found when given a set of data?

| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
|-------------------------------|---|--|--|--|
| 3rd Nine Weeks | <p>Strand 5: DATA ANALYSIS AND PROBABILTY</p> <p>Standard: Students will understand how to formulate questions, analyze data and determine probabilities.</p> <p>Benchmark B. Select and use appropriate statistical methods to analyze data.</p> | <ol style="list-style-type: none"> 1. Compare and describe related data sets. 2. Use the concepts of median, mode, maximum, minimum, and range and draw conclusions about a data set. Introduce 3. Use data analysis to make reasonable inferences/predictions and to develop convincing arguments from data described in a variety of formats (e.g., bar graphs, Venn diagrams, charts, tables, line graphs, and pictographs). Introduce | <p>Activity: Introduce the concepts of mean, median, range, and mode. Write on the chalkboard 10-20 numbers, between 1 and 30, repeating several numbers. Students will find the mean, median, range, and mode of the numbers and explain the process he or she used. Students will make lists of numbers and exchange with a partner and find the mean, median, mode and range.</p> <p>Assessment: Have students find a list of statistics (e.g., temperatures, batting averages, completed passes in football, etc.) Have them list the data and find the mean, median, mode and range. Have them explain in writing the process they used. Teacher will assess written pieces for accuracy. (Prob Sol, Comm, Con, Rep)</p> <p>Activity: Students will practice drawing a diagram to solve a problem. The following problem is presented: There are 5 polygons: a square, a rhombus, a scalene triangle, an equilateral triangle, and a trapezoid. Students will sort these polygons into 2 groups: those with all sides equal and those with sides that are not equal. Students will draw a Venn diagram to solve, label it, and exchange diagrams with another student to discuss what each diagram shows.</p> | <p>Read <u>In All Probability: Investigations in Probability and Statistics by Celia Cuomo: Exploring Probability</u> by Claire Newman, or some other books focusing on the concepts of probability. Give students statistical charts and graphs and have them practice reading the charts.</p> <p>Harcourt TE p. 118B-121, p. 126B-127 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 6.2, 6.5</p> <p>http://illuminations.nctm.org/LessonDetail.aspx?id=L297 (activities to teach mean, median, and mode)</p> <p>Harcourt TE p. 138B-139, p. 388B-389 Reteach, Practice, Challenge, Problem Solving, Reading Strategy Lesson 7.2, 18.4</p> |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

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| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
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| ESSENTIAL QUESTIONS: How can we interpret the data you have collected? | | | | |
|---|--|--|---|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 3rd Nine Weeks | <p>Strand 5: DATA ANALYSIS AND PROBABILTIY</p> <p>Standard: Students will understand how to formulate questions, analyze data and determine probabilities.</p> <p>Benchmark C. Develop and evaluate inferences and predictions that are based on data.</p> | <p>1. Propose and justify conclusions and predictions based on data. Introduce</p> <p>2. Develop convincing arguments from data displayed in a variety of formats. Introduce</p> | <p>Cont. Assessment: Teacher will check Venn diagrams to make sure that the polygons are organized and labeled correctly. (Prob Sol, Comm, Rep)</p> <p>Activity: Students will draw conclusions using the “Monthly Rainfall” graph and the information about Bangladesh on p. 148. Students will determine if each of the following conclusions can be drawn based on the information:</p> <ul style="list-style-type: none"> • The months with the most rain in Bangladesh are June and July. • In June and July, most people use waterways instead of roads. • It rains everyday in Bangladesh. <p>Assessment: Teacher will check written answers for accuracy. (Prob Sol, Comm, Rep)</p> | <p>Harcourt TE p. 148B-149 Reteach, Practice, Challenge, Reading Strategy Workbooks Lesson 7.6</p> |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

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|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
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| ESSENTIAL QUESTIONS: How can objects be represented and compared using geometric attributes? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 4th Nine Weeks | <p>Strand 3: GEOMETRY Standard: Students will understand geometric concepts and applications.</p> <p>Benchmark A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and development mathematical arguments about geometric relationships</p> | <p>1. Identify, compare, and analyze attributes of two- and three-dimensional shapes and develop vocabulary to describe the attributes:</p> <ul style="list-style-type: none"> • <i>build, draw, create,</i> and describe geometric objects Mastery • identify lines that are parallel or perpendicular Mastery • identify and compare congruent and similar figures. Mastery | <p>Activity: The students discuss what a line is and understand that a line goes on forever in two directions. Students will review what parallel lines are. Using two licorice strips students will demonstrate what parallel lines look like. The students will discuss what perpendicular lines are. They will demonstrate with their candy. After being introduced to the concept of angles as two rays that join together at a vertex, they will use three pipe cleaners and manipulate them to make different angles after each type is introduced. Students can keep a class chart of the associated vocabulary terms and their definition, e.g. ray, line, line segments, acute angle, etc. Assessment: Have students choose a type of line or angle and write a riddle so that one of their classmates can guess which line or angle they are describing. Check written riddles and guesses do make sure that they match.</p> <p>(Comm, Con, Rep) Activity: Students will write the following names on index cards: triangle, quadrilateral, pentagon, hexagon, and octagon. The students will take turns selecting a card and use a geoboard to construct the polygon named on the card. Students will explain orally how they made the polygon named, and will tell whether it is regular or not regular. Assessment: The students will construct one of each type of polygon and will record and label them on geoboard dot paper telling if each is regular or not regular. Teacher will check labels on dot paper for accuracy. (Comm, Rep)</p> <p>Activity: After teacher discusses with students about the books they see in the school library that are the same size and shape, the students will think of other places in school or at home where they see the same sizes and shapes (e.g. a set of dinner plates, school cafeteria trays, etc.) The students will list objects that they can think of that are the same shape and size and learn that these</p> | <p>Harcourt TE p. 364B-365 p. 370B-371 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 17.1 and 17.3</p> <p>Read <u>The Patch Work Quilt</u> by Valerie Flournoy. Bring pictures of various quilt patterns to class. Have students look at the lines and angles in the patterns. Have them identify them.</p> <p>Licorice sticks, pipe cleaners, index cards for vocabulary chart</p> <p>Harcourt TE ATS p. 380B geoboard, geoboard dot paper (p.TR54), index cards</p> <p>Harcourt TE p. 402B-403 Reteach, Practice, Challenge, Problem Solving Workbook Lesson 19.2</p> |

Portales Municipal Schools
CURRICULUM MAP

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|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
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| ESSENTIAL QUESTIONS: How can we identify geometric shapes? | | | | |
|---|---|--|--|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 4th Nine Weeks | Cont. Strand 3: GEOMETRY Benchmark A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and development mathematical arguments about geometric relationships | 2. Classify two- and three-dimensional shapes according to their properties and develop definitions of classes like triangles and pyramids: Review and Introduce <ul style="list-style-type: none"> • visualize, describe, and make models of geometric solids in terms of the number of faces, edges, and vertices • interpret two-dimensional representations of three-dimensional objects 3. Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions | (cont.) objects are said to be congruent. After the teacher holds up two pieces of construction paper, each with a triangle (of the same exact size) outlined in black and cuts out one of the triangles and place on top of the other, demonstrating to the students that the triangles are congruent, the students restate in their own words, the meaning of “congruent”. The students are given several figures and choose which ones are congruent, which ones are not. They will share with each other how they tested for congruency. Assessment: Have students draw two congruent shapes and list the ways that they are congruent. (Comm, Prob Sol, Con, Rep) Activity: Students will brainstorm the names of various two- and three-dimensional figures and will provide real-life examples of each. Students will discuss how the figures are similar and different. Students will visit the playground, computer lab and/or library, and on index cards, draw objects they see that are two- and three-dimensional. After the cards are collected, students will answer either “two-dimensional” or three-dimensional” in response to the card that is held up for them. Students will explain their reasoning. Assessment: Have students choose a cube and a square or a circle and a sphere or a pyramid and a triangle and describe the difference. (R+P, Comm, Con, Rep) | index cards, geometric solids <u>Explore Cubes, Cones, Cylinders, & Spheres</u> by Tana Hoban. Have students identify other objects that have these three dimensional shapes. Harcourt TE p. 644B-649 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 30.1, 30.2 |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How can we use points to identify locations on a grid? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 4th Nine Weeks | Strand 3: GEOMETRY (cont.) Benchmark B. Specify locations and describe special relationships using coordinate geometry and other representational systems. | 1. Describe location and movement using common language and geometric vocabulary. Mastery 2. Use ordered pairs to graph, locate, identify points, and describe paths in the first quadrant of the coordinate plane. Mastery 3. Use a variety of methods for measuring distances between locations on a grid. Mastery | Activity: Students will write the following terms on three cards each: translation, reflection, rotation. Students will model these terms using a pattern block. One student will shuffle the cards and place them face down. Each player will choose a different pattern block. Players take turns drawing a card and then carrying out the action described on the card, while the other players watch and record the action. Assessment: Have students compare their papers once all of the cards have been used. Teacher will monitor and check the students' papers for accuracy. (Comm, Con, Rep) Activity: Students will be given a list of coordinates to plot on graph paper. The coordinates will create a picture if plotted correctly. Assessment: Teacher will check graph papers for correctly plotted pictures. (Rep) | Harcourt TE ATS p. 406B Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 19.4 http://www.funbrain.com/co/index.html (What's the Point is an interactive game to teach coordinates on a plane.) graph paper, teacher created pictures with matching coordinates to plot Harcourt TE p. 430B-431 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 20.6 Harcourt TE Lesson NM-3, Distance on a Coordinate Grid p. NM6-NM7 |

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
|-----------------------------|------------------|----------------------------------|

| ESSENTIAL QUESTIONS: How are position words useful? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 4th Nine Weeks | Strand 3: GEOMETRY (cont.) Benchmark C. Apply transformations and use symmetry to analyze mathematical situations. | 1. Create and describe rotational designs using language of transformational symmetry. Review and Introduce 2. Describe a motion or set of motions that will show that two shapes are congruent. Review and Introduce | Activity: Students will write the following terms on three cards each: translation, reflection, rotation. Students will model these terms using a pattern block. One student will shuffle the cards and place them face down. Each player will choose a different pattern block. Players take turns drawing a card and then carrying out the action described on the card, while the other players watch and record the action. Assessment: Have students compare their papers once all of the cards have been used. Teacher will monitor and check the students' papers for accuracy. (Comm, Con, Rep) | Harcourt TE ATS p. 406B Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 19.4 |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

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|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
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| ESSENTIAL QUESTIONS: How can we collect, read, and organize data? | | | | |
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| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 4th Nine Weeks | <p>Strand 5: DATA ANALYSIS AND PROBABILTIY</p> <p>Standard: Students will understand how to formulate questions, analyze data and determine probabilities.</p> <p>Benchmark A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.</p> | <p>1. Organize, represent, and interpret numerical and categorical data and clearly communicate findings: Review</p> <ul style="list-style-type: none"> • choose and construct representations that are appropriate for the data set Review • recognize the differences in representing categorical and numerical data Introduce <p>2. Design investigations and represent data using table and graphs (e.g., line plots, bar graphs, and line graphs). Review and Inroduce</p> | <p>Activity: After explaining to students that companies often use graphs to track profits and sales for their business, students will plan a presentation based on the following information: They are the managers of a toy company who must make a presentation to the board of directors. They need to discuss the change in sales during the past year and also show which toys sold the most and least over the past year. Students will write about their presentation, tell which graphs they would use, and also draw their graphs based on their made-up data. Assessment: Teacher will review written work. (Prob Sol, Comm, Con, Rep)</p> <p>Activity: In pairs, students will use blank grid paper to make a line graph about temperature in degrees Celsius. Students will use rulers to draw and label the left side and bottom of the graph. They will use a scale of 0-100, with an interval of 10. Students will determine where the graph should be placed so that it fits on the page. They will choose a title and labels for the graph and then complete the graph. (Prob Sol, Rep)</p> <p>Assessment: Teacher will check graphs for accuracy.</p> | <p>Harcourt TE p. 114B-117, 144B-147 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 6.1, 7.5</p> <p>Blank grid paper, p. TR63</p> <p>Harcourt TE p. 122B-123, p. 136B-137, p. 140B-141 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 6.3, 7.1, 7.3</p> |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

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| Subject: Mathematics | June 2007 | Grade Level: | Fourth Grade |
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| ESSENTIAL QUESTIONS: How is the mean, median, mode, and range found when given a set of data? | | | | |
|--|--|--|--|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 4th Nine Weeks | <p>Strand 5: DATA ANALYSIS AND PROBABILITY</p> <p>Standard: Students will understand how to formulate questions, analyze data and determine probabilities.</p> <p>Benchmark B. Select and use appropriate statistical methods to analyze data.</p> | <ol style="list-style-type: none"> 1. Compare and describe related data sets. 2. Use the concepts of median, mode, maximum, minimum, and range and draw conclusions about a data set. Introduce 3. Use data analysis to make reasonable inferences/predictions and to develop convincing arguments from data described in a variety of formats (e.g., bar graphs, Venn diagrams, charts, tables, line graphs, and pictographs). Introduce | <p>Activity: Introduce the concepts of mean, median, range, and mode. Write on the chalkboard 10-20 numbers, between 1 and 30, repeating several numbers. Students will find the mean, median, range, and mode of the numbers and explain the process he or she used. Students will make lists of numbers and exchange with a partner and find the mean, median, mode and range.</p> <p>Assessment: Have students find a list of statistics (e.g., temperatures, batting averages, completed passes in football, etc.) Have them list the data and find the mean, median, mode and range. Have them explain in writing the process they used. Teacher will assess written pieces for accuracy. (Prob Sol, Comm, Con, Rep)</p> <p>Activity: Students will practice drawing a diagram to solve a problem. The following problem is presented: There are 5 polygons: a square, a rhombus, a scalene triangle, an equilateral triangle, and a trapezoid. Students will sort these polygons into 2 groups: those with all sides equal and those with sides that are not equal. Students will draw a Venn diagram to solve, label it, and exchange diagrams with another student to discuss what each diagram shows.</p> | <p>Read <u>In All Probability: Investigations in Probability and Statistics by Celia Cuomo</u>; <u>Exploring Probability</u> by Claire Newman, or some other books focusing on the concepts of probability. Give students statistical charts and graphs and have them practice reading the charts.</p> <p>Harcourt TE p. 118B-121, p. 126B-127 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 6.2, 6.5</p> <p>http://illuminations.nctm.org/LessonDetail.aspx?id=L297 (activities to teach mean, median, and mode)</p> <p>Harcourt TE p. 138B-139, p. 388B-389 Reteach, Practice, Challenge, Problem Solving, Reading Strategy Lesson 7.2, 18.4</p> |

Process Standards: Prob Sol=Problem Solving, R+P= Reasoning and Proof, Comm=Communication, Con=Connections, Rep=Representation

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
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| ESSENTIAL QUESTIONS: How can we interpret the data collected? | | | | |
|--|--|--|---|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 4th Nine Weeks | <p>Strand 5: DATA ANALYSIS AND PROBABILTIY</p> <p>Standard: Students will understand how to formulate questions, analyze data and determine probabilities.</p> <p>Benchmark C. Develop and evaluate inferences and predictions that are based on data.</p> | <p>1. Propose and justify conclusions and predictions based on data. Introduce</p> <p>2. Develop convincing arguments from data displayed in a variety of formats. Introduce</p> | <p>Cont. Assessment: Teacher will check Venn diagrams to make sure that the polygons are organized and labeled correctly. (Prob Sol, Comm, Rep)</p> <p>Activity: Students will draw conclusions using the “Monthly Rainfall” graph and the information about Bangladesh on p. 148. Students will determine if each of the following conclusions can be drawn based on the information:</p> <ul style="list-style-type: none"> • The months with the most rain in Bangladesh are June and July. • In June and July, most people use waterways instead of roads. • It rains everyday in Bangladesh. <p>Assessment: Teacher will check written answers for accuracy. (Prob Sol, Comm, Rep)</p> | <p>Harcourt TE p. 148B-149 Reteach, Practice, Challenge, Reading Strategy Workbooks Lesson 7.6</p> |

Portales Municipal Schools
CURRICULUM MAP

| | | |
|-----------------------------|------------------|----------------------------------|
| Subject: Mathematics | June 2007 | Grade Level: Fourth Grade |
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| ESSENTIAL QUESTIONS: How do we find area? | | | | |
|--|--|--|---|---|
| Calendar | Strand/Standard/ Benchmark | Performance Standard | Suggested Student Activities/Assessments | Resources/Materials |
| 4th Nine Weeks | Strand 3: GEOMETRY Standard: Students will understand geometric concepts and applications. Benchmark D. Use visualization, spatial reasoning, and geometric modeling to solve problems. | 3. Explore relationships involving perimeter and area: Review and Introduce <ul style="list-style-type: none"> • measure area of rectangular shapes and use appropriate units • recognize that area can have the same perimeter but different areas and vice versa • use models and formulas to solve problems involving perimeter and area of rectangles and squares (e.g., arrays) | Activity: In pairs, students will make two rectangular figures on a geoboard that have the same area but different perimeters. They will record the figures on dot paper and label the length, width, area, and perimeter of each figure. Students will model two rectangular figures that have the same perimeter but different areas. They will record the figures on dot paper and label the length, width, area, and perimeter of each figure. Assessment: Students will explain in writing how they decided that the perimeters would be the same while the areas would be different. Teacher will assess written work. (Prob Sol, R+P, Comm, Con, Rep) | Geoboards for each pair, rubber bands, dot paper (p. TR40) Harcourt TE p. 612B-613, 630B-635 Reteach, Practice, Challenge, Problem Solving Workbooks Lesson 28.1, 29.2, 29.3 |