

RSU 54/MSAD 54 Math Curriculum

Content Area: Math
Unit: Operations and Algebraic Thinking

Grade: Grade 4

Common Core State Standards Domain: **Operations and Algebraic Thinking**

Common Core State Standards	RSU 54/MSAD 54 Objectives	Instructional Resources/Activities
<p>Use the four operations with whole numbers to solve problems</p> <p>1. Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p>2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.¹</p>	<p>Use the four operations with whole numbers to solve problems</p> <p>1a. Interpret multiplication equations as comparisons.</p> <p>1b. Represent verbal statements of multiplicative comparisons as multiplication equations. <i>(Example: $5 \times 8 = 40$. Sally is five years old. Her mom is eight times older. How old is Sally's mom?)</i></p> <p>2a. Solve word problems involving multiplication and division using drawings, arrays, tables, or repeated addition.</p>	<p>1a. <u>Scott Foresman</u>, Lesson 3-1 1a. <u>Teaching Arithmetic: Introducing Multiplication</u>; Ch. 2: Circles and Stars, Ch. 3: Amanda Bean's Amazing Dream 1a. <i>Amanda Bean's Amazing Dream</i>, by Cindy Neushwander 1a. Problem Solving booklets (locally produced) 1a. http://www.helpingwithmath.com/by_subject/word_problems/wor_multiplication_division01_4oa2.htm</p> <p>1b. <u>Scott Foresman</u>, Lesson 3-10 1b. http://nzmaths.co.nz/resource/clever-clues</p> <p>2a. <u>Scott Foresman</u>, Lesson 3-1 2a. <u>Teaching Arithmetic: Introducing Multiplication</u>, Chap. 7: Candy Boxes 2a. <u>Teaching Arithmetic: Extending Multiplication</u>, Chap. 3: One Hundred Hungry Ants 2a. <i>One Hundred Hungry Ants</i>, by Elinor J. Pinczes 2a. <u>Teaching Arithmetic: Introduction to Division</u>, Ch. 3 2a. <i>The Doorbell Rang</i>, by Pat Hutchins 2a. <i>Spaghetti and Meatballs for All</i>, by Marilyn Burns</p>

<p>3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p>Gain familiarity with factors and multiples.</p> <p>4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given</p>	<p>2b. Translate comparative situations into equations with an unknown and solve.</p> <p>2c. Explain strategies and solutions for solving word problems.</p> <p>3a. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations.</p> <p>3b. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations including problems with remainders.</p> <p>3c. Interpret and explain the meaning of remainders</p> <p>3d. Evaluate expressions with a letter standing in for the unknown quantity.</p> <p>3e. Demonstrate the reasonableness of answers using estimation strategies, including using compatible numbers (numbers that sum to 10 or 100) or rounding.</p> <p>Gain familiarity with factors and multiples.</p> <p>4a. Determine if a single-digit number is a factor of a given whole number up to 100.</p>	<p>2b. <u>Scott Foresman</u>, Lesson 3-12 2b. <u>Teaching Arithmetic: Introducing Division</u>, Ch. 8: Classroom Groups</p> <p>2c. <u>Scott Foresman</u>, Lesson 3-6 2c. Problem Solving booklets (locally produced)</p> <p>3a. <u>Scott Foresman</u>, Lesson 3-11 3a-b. <u>Scott Foresman</u>, Problem of the Day 3a-b. NECAP/MEA released items 3a-b. <u>Zeroing in on Number and Operations</u>, “Problem Solving with All Operations,” “Posing Problems”</p> <p>3b. <u>Teaching Arithmetic: Introduction to Division</u>, Ch. 3, 5, 13 3b. <i>The Doorbell Rang</i>, by Pat Hutchins 3b. <i>A Remainder of One</i>, by Elinor Pinczes 3b. <i>Divide and Ride</i>, by Stuart Murphy</p> <p>3c. <u>Teaching Arithmetic: Introduction to Division</u>, Chapter 6 3c. <i>17 Kings and 42 Elephants</i>, by Margaret Mahy 3c. <u>Zeroing in on Number and Operations</u>, “Remainders.”</p> <p>3d. <u>Scott Foresman</u>, Lessons 2-12, 2-13 3d. <u>Navigations: Algebra 3-5</u>, The Variable Machine, Catch of the Day</p> <p>3e. <u>Scott Foresman</u>, Lessons 2-3, 2-4</p> <p>4a-c. Games: “Multiple Marker,” “Counting Tape Game,” “Figuring Factors” (resource packet)</p> <p>4a. <u>Scott Foresman</u>, Lesson 3-2 4a. <u>Teaching Arithmetic: Extending</u></p>
---	--	---

<p>whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.</p> <p>Generate and Analyze Patterns.</p> <p>5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. <i>For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</i></p>	<p>4b. Determine if a whole number up to 100 is a multiple of a given single digit number.</p> <p>4c. Recognize that a whole number is a multiple of each of its factors.</p> <p>4d. List the factor pairs of a given whole number up to 100.</p> <p>4e. Determine whether a given number 1-100 is prime or composite (Prime numbers are numbers with exactly 2 factors: 1 and the number itself.)</p> <p>Generate and Analyze Patterns.</p> <p>5a. Describe features of an arithmetic number pattern or shape pattern by identifying the rule, and features that are not explicit to the rule. A t-chart is a tool to help students see number patterns.</p> <p>6. Know from memory all addition and subtraction facts. <i>(Review of 3rd grade objective.)</i></p> <p>7. Know from memory all multiplication and division facts. <i>(Review of 3rd grade objective.)</i></p>	<p><u>Multiplication</u>, Ch. 2, 4, 5, 9 4a. <u>Scott Foresman</u>, Lesson 3-2</p> <p>4c. <u>Teaching Arithmetic: Extending Multiplication</u>, Ch. 2, 4, 5 4c. Activities – “Finding Multiples,” “Find the Factor” (resource packet)</p> <p>4d. <u>Teaching Arithmetic: Introducing Multiplication</u>, Ch. 10 4d. Games: “Factor Search,” “Divisibility Search” (resource packet)</p> <p>4e. <u>Scott Foresman</u>, page 134 4e. Activity – “Prime Number Hunt” (Resource Packet) 4e. Game: “Prime or Not” (resource packet)</p> <p>5a. <u>Scott Foresman</u>, Lesson 2-9, 3-5, 6-9 5a. <u>Navigations: Algebra 3-5</u>, Tiling a Patio, Triangle Rule, The Ups and Downs of Patterns 5a. Math Academy Lessons – Fish Tails, Picnic Tables, (resource packet)</p> <p>6. Fastt Math 6. Paper and pencil resources such as Mad Minutes and Rocket Math 6. <u>Zeroing in on Number and Operations</u>, “Addition and Subtraction Fact Practice” 6. Games: “Doubles & Doubles Plus One,” “Teen Take Away,” “Fast Ten—Yes or No?” (resource packet)</p> <p>7. <u>Mastering the Basic Math Facts in Multiplication and Division</u> 7. Fastt Math 7. Paper and pencil resources such as Mad Minutes and Rocket Math 7. <u>Zeroing in on Number and</u></p>
---	---	--

		<p>Operations, “Helping Facts” 7. Activity: “Teaching the 9’s Facts” (resource packet) 7. Games: “Keep the Leftovers,” “Multiplication Fill In,” “Fishy Multiplication,” “Array Game,” “Product Comparing,” “Side by Side” (resource packet)</p> <p>Additional Resource: Calendar Math</p>
--	--	--

RSU 54/MSAD 54 Math Curriculum

Content Area: Math

Grade: Grade 4

Unit: Number and Operations in Base 10

Common Core State Standards Domain: **Number and Operations in Base 10**

Common Core State Standards	RSU 54/MSAD 54 Objectives	Instructional Resources/Activities
<p>Generalize place value understanding for multi-digit whole numbers. <i>(Grade 4 expectation in this domain are limited to numbers less than or equal to 1,000,000)</i></p> <p>1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. <i>For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.</i></p> <p>2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each</p>	<p>Generalize place value understanding for multi-digit whole numbers. <i>(Grade 4 expectation in this domain are limited to numbers less than or equal to 1,000,000)</i></p> <p>1a. Understand place value related to multiplying and dividing by multiples of 10.</p> <p>1b. Reason about the magnitude of digits in a number.</p> <p>2a. Read and write whole numbers in various ways including word form, expanded form, and standard form.</p>	<p>1a. <u>Scott Foresman</u>, Lessons 1-1, 1-3, 5-1, 6-1 1a-b. <u>Zeroing in on Number and Operations</u>, “Patterns in the Count”</p> <p>1b. <u>Scott Foresman</u>, Lesson 1-2, 1-3, 1-7 1b. Activities: “How Much is 1,000?” “Math Number Sense” (resource packet) 1b. Games: “Try for \$5,000,” “Try for \$1,000,000” “Empty the Bank,” “Number Maker,” “Target 300” (res. pkt)</p> <p>2a. <u>Scott Foresman</u>, Lessons 1-1, 1-2 2a. <u>Zeroing in on Number and Operations</u>, “Connecting Representations of Numbers”</p>

<p>place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p> <p>3. Use place value understanding to round multi-digit whole numbers to any place.</p> <p>Use place value understanding and properties of operations to perform multi-digit arithmetic. <i>(Grade 4 expectation in this domain are limited to numbers less than or equal to 1,000,000)</i></p> <p>4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.</p> <p>5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p>2b. Compare two multi-digit whole numbers using appropriate symbols.</p> <p>3. Round numbers up to 1,000,000.</p> <p>Use place value understanding and properties of operations to perform multi-digit arithmetic. <i>(Grade 4 expectation in this domain are limited to numbers less than or equal to 1,000,000)</i></p> <p>4a. Fluently* add and subtract multi-digit whole numbers, including using the standard algorithm.</p> <p>*Fluency means accuracy, efficiency, and flexibility (using a variety of strategies).</p> <p>5a. Multiply a whole number up to four digits by a one-digit number using a variety of strategies.</p> <p>5b. Multiply two two-digit</p>	<p>2b. <u>Scott Foresman</u>, Lesson 1-5 2b. <u>Zeroing in on Number and Operations</u>, “In Order” 2b. Game: “Target Amounts,” “From Here to There” (resource packet)</p> <p>3. <u>Scott Foresman</u>, Lesson 1-6 3. Games: “Rounding Game,” “Roll Them Round and Round” (resource packet)</p> <p>4a. <u>Scott Foresman</u>, Lessons 2-5, 2-6, 2-7 4a. <u>Zeroing in on Number and Operations</u>, “Open Number Line,” “Mental Computation,” “Adding Numbers in the Thousands,” “Column Addition,” “Subtracting Numbers in the Thousands” 4a. Games: “Big Double Trouble,” “Target Subtraction,” “Go For Broke!” “Close to 100,” “The \$1,000 Club,” “Double Trouble,” (resource packet)</p> <p>5a. <u>Scott Foresman</u>, Lessons 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-8 5a. www.personal-math-online-help.com/multiplicationworksheets-4d-1d.html 5a. <u>Teaching Arithmetic: Extending Multiplication</u>, Ch. 1, 8 5a. <u>Zeroing in on Number and Operations</u>, “Multiples of 10, 100, 1,000,” “Partial Products” 5a. Games: “Target Products,” “Groups Galore,” “Product Comparing” (resource packet)</p> <p>5b. <u>Scott Foresman</u>, Lessons 6-3, 6-5 5b. <u>Teaching Arithmetic: Extending Multiplication</u>, Ch. 10, 12.</p>
--	--	---

<p>6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>	<p>whole numbers using a variety of strategies.</p> <p>6a. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors.</p> <p>6b. Illustrate and explain calculations by using equations, rectangular arrays, and/or area models.</p>	<p>5b. <u>Zeroing in on Number and Operations</u>, “Two-digit Multipliers” 5b. Game: “Keep the Leftovers” (resource packet)</p> <p>6a-b. <u>Teaching Arithmetic: Introducing Division</u>, Ch. 4-8 6a. <u>Scott Foresman</u>, Lessons 7-1 to 7-8 6a. “Fourth Grade Division” (resource packet) 6a. <u>Zeroing in on Number and Operations</u>, “Division with a Multiplication Menu,” “Division Algorithms” 6a. Games: “Target Quotients,” “Quotient Comparing” (resource packet)</p> <p>6b. <u>Zeroing in on Number and Operations</u>, “Properties of Multiplication” 6b. Game: “Multiplication Arrays” (resource packet)</p> <p>Additional Resource: Calendar Math</p>
---	--	--

RSU 54/MSAD 54 Math Curriculum

Content Area: Math

Grade: Grade 4

Unit: Number and Operations - Fractions

Common Core State Standards Domain: **Number and Operations – Fractions**

Common Core State Standards	RSU 54/MSAD 54 Objectives	Instructional Resources/Activities
<p>Extend Understanding of fraction equivalence and ordering. <i>(Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, 100.)</i></p> <p>1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves</p>	<p>Extend Understanding of fraction equivalence and ordering. <i>(Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, 100.)</i></p> <p>1a. Explain how fractions are equivalent using a visual model, including area models, number line, or a collection/set model.</p> <p>1b. Recognize and generate</p>	<p>1a. <u>Scott Foresman</u>, Lessons 9-1, 9-2, 9-3 1a-b. <u>Marilyn Burns Fraction Kit</u> activities: Cover Up, Uncover, What’s Missing?, Comparing Pairs.</p> <p>1b. <u>Scott Foresman</u>, Lesson 9-6</p>

<p>are the same size. Use this principle to recognize and generate equivalent fractions.</p> <p>2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.</p> <p>Build fractions from unit fractions by applying and extending previous understandings of operations on whole</p>	<p>equivalent fractions.</p> <p>2a. Compare fractions by creating visual models.</p> <p>2b. Compare fractions by finding common denominators and common numerators.</p> <p>2c. Compare fractions through the use of a benchmark fraction, such as $\frac{1}{2}$.</p> <p>2d. Understand that the size of the whole is important when comparing fractions. (ie, $\frac{1}{2}$ of a medium pizza is very different from $\frac{1}{2}$ of a large pizza)</p> <p>Build fractions from unit fractions by applying and extending previous understandings of operations</p>	<p>1b. <u>Teaching Arithmetic: Introducing Fractions</u>, Fractions in Context pg. 30, Exploring Fractions with Pattern Blocks pg. 39, When is a Fraction Worth $\frac{1}{2}$ pg. 62</p> <p>1b. <u>Zeroing in on Number and Operations</u>, “Parts of a Group”</p> <p>1b. Games: “Make One with Fractions,” “Ready, Set, Fraction!” “Make a Pound” (resource packet)</p> <p>2a. <u>Scott Foresman</u>, Lesson 9-8</p> <p>2a. <u>Teaching Arithmetic: Introducing Fractions</u>, Nicholas’ Game, pg. 116</p> <p>2a. <u>Different Shapes, Equal Pieces</u> (Investigations), pg. 49-57</p> <p>2a. <i>Full House</i> by Dayle Dodds</p> <p>2a. Games: “From Here to There Fractions,” “Get Them in Order Fractions,” “From Here to There Fractions” (Resource Packet)</p> <p>2a-b. Marilyn Burns Fraction Kit activity, Comparing Pairs</p> <p>2b. <u>Scott Foresman</u>, Lessons 9-7, 9-9</p> <p>2c. <u>Scott Foresman</u>, Lesson 9-4</p> <p>2c. <u>Different Shapes, Equal Pieces</u> (Investigations), pg. 46-48</p> <p>2c. <u>Teaching Arithmetic: Introducing Fractions</u>, Ch. 6, 7, 8</p> <p>2c. <u>Zeroing in on Number and Operations</u>, “Number Lines and Benchmark Fractions”</p> <p>2d. <i>Lion’s Share</i> by Matthew McElligot</p> <p>2d. <u>Different Shapes, Equal Pieces</u> (Investigations), pg. 2-32 (resource packet)</p>
---	---	--

<p>numbers. <i>(Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, 100.)</i></p> <p>3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. -Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p>-Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: $3/8 = 1/8 + 1/8 + 1/8$; $3/8 = 1/8 + 2/8$; $2\ 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$.</p> <p>-Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.</p> <p>-Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p> <p>4. Apply and extend previous</p>	<p>on whole numbers. <i>(Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, 100.)</i></p> <p>3a. Compose unit fractions by separating fractions of the same whole (example: $4/5 = 1/5 + 1/5 + 1/5 + 1/5$)</p> <p>3b. Justify the breaking apart of fractions using a visual fraction model.</p> <p>3c. Understand the relationship between improper fractions and mixed numbers.</p> <p>3d. Add and subtract mixed numbers, with like denominators, using equivalent fractions.</p> <p>3e. Solve word problems by adding and subtracting fractions, with like denominators, using visual fraction models.</p>	<p>3a-b. <u>Marilyn Burns Fraction Kit</u> Activities: Pick Three, Roll Five, Make a Whole</p> <p>3b. <u>Teaching Arithmetic: Introducing Division</u>, Ch. 7</p> <p>3c. <u>Scott Foresman</u>, Lesson 9-10, 9-11 3c. <u>Teaching Arithmetic: Introducing Fractions</u>, Ch. 11. 3c. <u>Zeroing in on Number and Operations</u>, “Renaming Fractions”</p> <p>3d. www.aaamath.com/fra.htm 3d. www.math-drills.com/fractions.shtml 3d. Game: “Make a Pound” (resource packet)</p> <p>3e. <u>Teaching Arithmetic: Introducing Division</u>, Ch. 4</p>
--	--	--

<p>understandings of multiplication to multiply a fraction by a whole number.</p> <p>-Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.</p> <p>-Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)</p> <p>-Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</p> <p>Understand decimal notation for fractions, and compare decimal fractions. <i>(Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, 100.)</i></p>	<p>4a. Understand that multiplying fractions is the same as repeated addition of a unit fraction.</p> <p>4b. Use and create visual fraction models to multiply fractions by a whole number, and whole numbers by a fraction.</p> <p>4c. Solve word problems involving multiplying a whole number by a fraction.</p> <p>Understand decimal notation for fractions, and compare decimal fractions. <i>(Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6,</i></p>	<p>4a-b. <u>Teaching Arithmetic: Multiplying and Dividing Fractions</u>, Ch. 1, 2 (resource packet)</p> <p>4b. Lesson: “Introducing Multiplication of Fractions,” Marilyn Burns (resource packet)</p>
--	---	---

<p>5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. <i>For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.</i></p> <p>Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.</p> <p>6. Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i></p> <p>7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.</p>	<p>8, 10, 12, 100.)</p> <p>5a. Change fractions with denominators of 10 into equivalent fractions with 100 as the denominator. Student experiences should include the use of grids.</p> <p>5b. Add fractions with 10 and 100 as denominators.</p> <p>6a. Understand that a number can be represented as both a fraction and a decimal.</p> <p>7. Compare two decimals to hundredths using $>$, $<$, or $=$, and justify the results of the comparison.</p>	<p>5a. <u>Teaching Arithmetic: Lessons for Decimals and Percents</u>, Ch. 1-4 (resource packet)</p> <p>5a. <u>Scott Foresman</u>, Lesson 1-12, 11-1, 11-2, 11-6 (see resource packet for additional practice activities)</p> <p>5a. <u>Zeroing in on Number and Operations</u>, “Decimals and Their Connections to Fractions”</p> <p>5a. Games: “Try for \$5.00,” “Roll for a Whole” (resource packet)</p> <p>5b. <u>Activity</u>: “Decimal Riddles” (resource packet)</p> <p>6a. <u>Teaching Arithmetic: Decimals and Percents</u>, Ch. 3 (resource packet)</p> <p>6a. Game: “Fraction/Decimal Concentration” (resource packet)</p> <p>7. <u>Scott Foresman</u>, Lesson 11-3</p> <p>7. <u>Teaching Arithmetic: Decimals and Percents</u>, Ch. 1, 2, 4 (resource packet)</p> <p>7. <u>Zeroing in on Number and Operations</u>, “Ordering Decimals”</p> <p>7. Games: “Make One with Decimals,” “Get them in Order Decimals,” “Decimal Sum Comparing,” “From Here to There Decimals,” “Making Cents of Decimals” (resource packet)</p> <p>Additional Resource: Calendar Math</p>
--	--	---

RSU 54/MSAD 54 Math Curriculum

Content Area: Math
Unit: Measurement and Data

Grade: Grade 4

Common Core State Standards Domain: **Measurement and Data**

Common Core State Standards	RSU 54/MSAD 54 Objectives	Instructional Resources/Activities
<p>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</p> <p>1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. <i>For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</i></p> <p>2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line</p>	<p>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</p> <p>1a. Understand relative sizes of measurement units and choose appropriate units based on what is being measured.</p> <p>1b. Convert larger units to smaller units within a system of measurement.</p> <p>2a. Solve multi-step word problems using four operations relating to measurements from a larger unit in terms of a smaller unit.</p> <p>2b. Make change for amounts up to \$20.00.</p> <p>2c. Solve problems</p>	<p>1a. <u>Scott Foresman</u>, Lessons 4-2, 10-7, 10-9, 10-10, 11-9, 11-10, 11-11</p> <p>1b. <u>Scott Foresman</u>, Lessons 4-2, 10-11, 11-12 (note: lessons also include changing smaller units to larger units, which is a grade 5 objective) 1b. <i>Millions to Measure</i> by David Schwartz 1b. Problems:</p> <p>2a. <u>Scott Foresman</u>, Lesson 10-13 2a. <i>How Tall, How Short, How Far Away</i> by David Adler</p> <p>2b. <u>Scott Foresman</u>, Lessons 1-10, 1-11 2b. Game: "Pocket Money" (resource packet) 2b. Activity: "35-Cent Problems" (resource packet) 2c. <u>Scott Foresman</u>, Lesson 4-3</p>

<p>diagrams that feature a measurement scale.</p> <p>3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. <i>For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</i></p> <p>Represent and interpret data.</p> <p>4. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. <i>For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</i></p> <p>Geometric measurement: understand concepts of angle and measure angles.</p> <p>5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:</p> <p>-An angle is measured with reference to a circle with its center at the common endpoint of the rays, by</p>	<p>involving elapsed time.</p> <p>3. Understand and apply formulas for area and perimeter.</p> <p>Represent and interpret data.</p> <p>4a. Measure objects using fractions to an eighth of an inch.</p> <p>4b. Create and use line plots with data from measuring objects to the nearest $\frac{1}{8}$, $\frac{1}{4}$, and $\frac{1}{2}$ inch.</p> <p>4c. Solve addition and subtraction problems including fractions with the use of a line plot.</p> <p>Geometric measurement: understand concepts of angle and measure angles.</p> <p>5a. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement. An angle is measured with reference to a circle (a circle being 360°) with its center at the common endpoint of the rays.</p>	<p>2c. see resource packet for problems and number lines for elapsed time.</p> <p>3. <u>Scott Foresman</u>, Lesson 8-11 3. Game: "Multiplication Arrays" (resource packet) 3. Activities: "Exploring Area," "Measuring Perimeter," "Designing a Flower Bed," "Designing a Rabbit Enclosure" (resource packet)</p> <p>4a. <u>Scott Foresman</u>, Lesson 10-8</p> <p>4b. Activities: Lengths of Ants Line Plot," "Objects in My Desk Line Plot"(resource packet)</p> <p>4c. http://www.uen.org/3-6interactives/math.shtml#fractions 4c. Activities: "Fractions on a Line Plot," "Sacks of Flour," "Measuring Strips Line Plot"(resource packet)</p> <p>5a. <u>Scott Foresman</u>, Lesson 8-3 Enrichment, pg. 443</p>
---	---	--

<p>considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.</p> <p>-An angle that turns through n one-degree angles is said to have an angle measure of n degrees.</p> <p>6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.</p> <p>7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.</p>	<p>5b. Explore an angle as a series of “one-degree turns.”</p> <p>6a. Measure the degree of an angle using whole numbers.</p> <p>6b. Sketch the correct angle with the use of a protractor when given a specific measure.</p> <p>7. Use addition and subtraction related to angles in real world and mathematical problems.</p>	<p>5b. Activity: “Angles in Names” (resource packet)</p> <p>6a. Activities: “How Many Degrees?” “Predicting and Measuring Angles” (resource packet)</p> <p>6b. Activity: “Angle Barrier Game” (resource packet)</p> <p>7. Activity: “Unknown Angle Word Problems” (resource packet)</p> <p>7. <i>Sir Cumference and the Isle of Immeter</i> by Cindy Neuschwander</p> <p>Additional Resource: Calendar Math</p>
---	---	--

Common Core State Standards Domain: **Geometry**

Common Core State Standards	RSU 54/MSAD 54 Objectives	Instructional Resources/Activities
<p>Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</p> <p>1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.</p> <p>2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.</p> <p>3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry</p>	<p>Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</p> <p>1a. Identify two-dimensional objects, including points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.</p> <p>1b. Draw two-dimensional objects, including points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.</p> <p>2a. Sort and classify objects based on the characteristics of parallelism, perpendicularity and angle types.</p> <p>2b. Identify right triangles.</p> <p>3a. Recognize a line of symmetry for a two-dimensional figure, and identify figures that have line symmetry.</p> <p>3b. Draw lines of symmetry within two-dimensional object.</p>	<p>1a. <u>Scott Foresman</u>, Lessons 8-3, 8-4, 8-10</p> <p>1b. <u>Scott Foresman</u>, Lessons 8-4, 8-10</p> <p>2a. <u>Scott Foresman</u>, Lessons 8-3, 8-4, 8-10</p> <p>2b. <u>Scott Foresman</u>, Lesson 8-2, 8-4</p> <p>3a. <u>Scott Foresman</u>, Lessons 8-7, 8-14 3a. <u>Navigations</u>, Geometry 3-5, Alphabet Symmetry</p> <p>3b. Activity: “Quilt Pattern Symmetry” (resource packet)</p> <p>Additional Resource: Calendar Math</p>