

**2014-15**  
**Mathematics Pacing Guide**  
**Third Grade**

**Time Frame: 5 Weeks – September – Beginning of October**  
**Unit 1: Place Value**

Standards for Mathematical Practice	Literacy Standards
<ol style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them</li> <li>2. Reason abstractly and quantitatively</li> <li>3. Construct viable arguments and critique the reasoning of others</li> <li>4. Model with mathematics</li> <li>5. Use appropriate tools strategically</li> <li>6. Attend to precision</li> </ol>	<p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p><b>RI.3.4</b> Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</p> <p><b>RI.3.5</b> Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</p> <p><b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key event occur)</p> <p><b>SL.3.2</b> Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.3.3</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>SL.3.5</b> Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details</p> <p><b>L.3.4c</b> Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 2 reading and content, choosing flexibly from a range of strategies. C. Use a known root word as a clue to the meaning of an unknown word with the same root.</p> <p><b>L.3.5b.</b> Demonstrate understanding of word relationships and nuances in word meaning.  b. Identify real-life connections between words and their use.</p>

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
<p><b>Use place value understanding and properties of operations to perform multi-digit arithmetic.</b></p> <p><b>3. NBT.1</b> Use place value understanding to round whole numbers to the nearest 10 or 100.</p> <p><b>3. NBT.2</b> Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>	<p>How does rounding numbers assist in solving and estimating a solution to an addition or subtraction problem?</p> <p>How does understanding the properties of operations help us make sense of and solve multi-digit addition and subtraction?</p> <p>How does the placement of a number affect its value?</p> <p>What is the importance of regrouping in addition and subtraction?</p>	<p><b>Before</b> Concept Map</p> <p>Pretest</p> <p>Discuss when to round in real life</p> <p>Allow students to play with counters to subtract and add, and recognize regrouping on their own.</p> <p><b>During</b> Slate response- adding and subtracting numbers</p> <p>Mad Minutes</p> <p>Journal</p> <p>Mathematicians chair – discuss thinking</p> <p><b>After</b> Test – rounding numbers and adding and subtracting numbers</p> <p>My Math Assessments</p>	<p>2015-16: 10.9.15</p> <p>Sept 25: Place Value and Rounding</p>	<p>base ten blocks difference even numbers odd ordinal place value (ones, tens, hundreds, thousands) regrouping (with addition &amp; trading) rounding subtraction sum</p>	<p>My Math Curriculum Crafter</p> <p>Resources for adding and subtracting whole numbers: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#">http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#</a></p> <p>Resources for understanding and using number notation and place value: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#a">http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#a</a></p> <p>Resources for counting in steps, and understanding even and odd numbers: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#b">http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#b</a></p> <p>MAISA curriculum units and resources: <a href="http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013">http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013</a></p> <p><b>Rounding Rap:</b> <a href="https://www.youtube.com/watch?v=3afU6JQG15I">https://www.youtube.com/watch?v=3afU6JQG15I</a></p>

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					<p><b>Literacy Connection:</b>  Milbourne, Anna. <i>How Big is a Million?</i> Usborne Books. ISBN 0794519245. 2008.</p> <p>Murphy, Stuart. <i>Earth Day-Hooray!</i> Harper Collins. ISBN 0-06-000129-1. 2004.</p> <p>Neuschwander, Cindy. <i>Sir Cumference and the All the King's Tens.</i> Charlesbridge Publishing. ISBN 1570917280. 2009.</p> <p>Packard, Edward. <i>Big Numbers.</i> Millbrook Press. ISBN 0761309381. 2001.</p> <p>Packard, Edward. <i>Little Numbers.</i> Millbrook Press. ISBN 0761319042. 2001.</p> <p>Schwartz, David. <i>How Much is a Million?</i> Perfection Learning. ISBN 0812449215. 1997.</p> <p><b>Unit Manipulatives</b>  hundreds chart  ten frames  number grid  base-ten blocks</p> <p><b>Games:</b></p>

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					<p>The following game requires a set of number cards that include the digits 0 through 9, four of each.</p> <p>Place Value Compare It – Students use place value game boards representing the ones place through the thousands place. Students take turns drawing cards and determining the best spot to place each card as it is drawn to try to make the largest number possible. The student with largest number after all digits are placed wins the round. A variation of this game would allow students to rearrange their numbers after all eight cards are placed to try to create a larger number than they made when they did not</p> <p><b>Instructional Resources/Links:</b>  <a href="http://www.myteacherpages.com/webpages/MrsThonus/math.cfm?subpage=364980">http://www.myteacherpages.com/webpages/MrsThonus/math.cfm?subpage=364980</a>  This site has resources for teaching place value.</p> <p><a href="http://www.aaaknow.com/g31_plx1.htm">http://www.aaaknow.com/g31_plx1.htm</a>  This site has an explanation of place value up to one</p>



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					<p><a href="http://mustbethousands/default.htm#page2">mustbethousands/default.htm#page2</a>            “There Must Be Thousands”: Students are asked to identify the place value of the underlined digit.</p> <p><a href="http://www.sheppardsoftware.com/mathgames/placevalue/value.htm">http://www.sheppardsoftware.com/mathgames/placevalue/value.htm</a>            This site goes through an explanation of place value first, and then asks students to find the number with the correct given place value. It also shows a pictorial representation and asks the student to find the corresponding number.</p> <p><a href="http://www.youtube.com/watch?v=gmlc_vkuNR4">http://www.youtube.com/watch?v=gmlc_vkuNR4</a>            This site has a video that goes through an explanation of place value. It also gives an explanation of expanded notation.</p> <p><a href="http://en.wikipedia.org/wiki/List_of_municipalities_in_Michigan_%28by_population%29">http://en.wikipedia.org/wiki/List_of_municipalities_in_Michigan_%28by_population%29</a>            This site has a list of Michigan cities' populations from greatest to least.</p>

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					<p><a href="http://vimeo.com/6361130">http://vimeo.com/6361130</a> Video that explores what a million is.</p> <p><a href="http://apps.svsu.edu/mathsci-center/uploads/math/Elementary.html">http://apps.svsu.edu/mathsci-center/uploads/math/Elementary.html</a> This site has multiple resources of all types for teachers and students.</p>

**Mathematics Pacing Guide  
Third Grade**

**Time Frame: 6 weeks- Mid Oct- November  
Unit 2: Addition and Subtraction**

Standards for Mathematical Practice	Literacy Standards
<ol style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them</li> <li>2. Reason abstractly and quantitatively</li> <li>3. Construct viable arguments and critique the reasoning of others</li> <li>4. Model with mathematics</li> <li>6. Attend to precision</li> </ol>	<p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p><b>RI.3.4</b> Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</p> <p><b>RI.3.5</b> Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</p> <p><b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key event occur)</p> <p><b>SL.3.2</b> Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.3.3</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>L.3.4c</b> Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 2 reading and content, choosing flexibly from a range of strategies. C. Use a known root word as a clue to the meaning of an unknown word with the same root.</p> <p><b>L.3.5b.</b> Demonstrate understanding of word relationships and nuances in word meaning. b. Identify real-life connections between words and their use.</p>



Common Core	Essential Questions	Assessments	Assessment Dates	Vocabulary	Resources
<p><b>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</b></p> <p><b>3. OA.8</b> Solve two-step word problems using the four operations. 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><b>3. NBT.2</b> Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>	<p>How can a word problem be represented with numbers and symbols?</p> <p>What are ways to discover the operation needed to solve a word problem?</p>	<p><b>Before</b> Daily word problem</p> <p>Discussion</p> <p><b>During</b> Daily word problem</p> <p>Think-pair-share</p> <p>Drawing (show and tell)</p> <p><b>After</b> Word problem for students to show (with a drawing or representation) and tell (in words) how they found the answer My Math Assessment</p>	<p>2015-16: 11.20.15</p> <p>Oct 21: Addition Nov 21: Subtraction</p>	<p>addends addition difference mathematical missing sentences subtraction (including both comparison and take away model) sum variable</p>	<p>Resources for problem solving with whole numbers: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#e">http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#e</a></p> <p>Resources for adding and subtracting whole numbers: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#c">http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#c</a></p> <p>MAISA curriculum units and resources: <a href="http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013">http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013</a></p> <p><b>Literacy Connection:</b> Hong, Lily Toy. <i>Two of Everything</i>. Albert Whitman and Company. ISBN 978-0-8075-8157-5.1993.</p> <p>Tang, Greg. <i>Math-terpieces the Art of Problem-Solving</i>. Scholastic Press. ISBN 0-439-44388-1. 2003.</p> <p>Leedy, Loreen. <i>Subtraction Action</i>. Holiday House, Inc. ISBN 0-8234-1454-X.2000.</p> <p>Tang, Greg. <i>The Grapes of Math: Mind Stretching Math</i></p>

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					<p><i>Riddles</i>. Scholastic. ISBN 0-439-21033-X. 2001.</p> <p>Murphy, Stuart. <i>Shark Swmathon</i>. Harper Collins. ISBN 0-06-446735-X. 2001.</p> <p><b>Unit Manipulatives :</b>  hundreds chart  ten frames  number grid  base-ten blocks  number line  fact triangles  number cubes</p> <p><b>Links:</b>  <a href="http://www.myteacherpages.com/webpages/MrsThonus/mat h.cfm?subpage=364980">http://www.myteacherpages.com/webpages/MrsThonus/mat h.cfm?subpage=364980</a>  Links to a variety of place value and addition and subtraction websites.</p> <p><a href="http://www.ictgames.com/100 huntplus10.html">http://www.ictgames.com/100 huntplus10.html</a>  Addition + 10</p> <p>My Math Curriculum Crafter</p>

**Mathematics Pacing Guide  
Third Grade**

**Time Frame: 1 Week – December  
Unit 3: Arithmetic Patterns**

Standards for Mathematical Practice	Literacy Standards
<p>1. Make sense of problems and persevere in solving them</p> <p>3. Construct viable arguments and critique the reasoning of others</p> <p>5. Use appropriate tools strategically</p> <p>6. Attend to precision</p> <p>7. Look for and make use of structure</p> <p>8. Look for and express regularity in repeated reasoning</p>	<p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p><b>RI.3.4</b> Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</p> <p><b>RI.3.5</b> Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</p> <p><b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key event occur)</p> <p><b>SL.3.2</b> Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.3.3</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>L.3.1g</b> Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. G. Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.</p> <p><b>L.3.4c</b> Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies. C. Use a known root word as a clue to the meaning of an unknown word with the same root.</p> <p><b>L.3.6</b> Acquire and use accurately grade-appropriate conversational, general academic and domain-specific words and phrases, including those that signal spatial and temporal relationships.</p>

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<p><b>CRITICAL AREA:</b>  <b>Developing understanding of multiplication and division and strategies for multiplication and division within 100</b></p> <p><b>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</b>  <b>3. OA.9</b> Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.</p>	<p><b><u>Essential Question</u></b>  Describe the pattern noticed on the addition table/multiplication table.</p> <p>Compare and contrast the addition/  Multiplication table.</p> <p><b><u>Scaffold</u></b>  How do we put numbers together?  How can we break numbers apart using a chart?  What are patterns?  What patterns can you use to help you remember multiplication and addition facts?</p>	<p><b><u>Before</u></b>  Fill in an empty Addition Table with a partner</p> <p>Class discussion on discovered patterns</p> <p><b><u>During</u></b>  Response cards</p> <p>Use table correctly with daily work</p> <p>Observe and discuss properties present in tables</p> <p>Compare Addition table to Multiplication table with partners.</p> <p>Formative Assessments</p> <p><b><u>After</u></b>  Mini quiz – arithmetic patterns, using tables correctly  My Math Assessment</p>	<p>2015-16:  12.4.15</p> <p>Dec 5</p>	<p>addends  missing multiples  patterns  product sum table</p>	<p><b>Literature Connection:</b></p> <p>Aboff, Marcie. <i>If You Were an Even Number</i>. Picture Window Books. ISBN 1404847979. 2008.</p> <p>Aboff, Marcie. <i>If You Were an Odd Number</i>. Picture Window Books. ISBN 1404847944. 2008.</p> <p>Fisher, Doris and Dani Sneed. <i>My Even Day</i>. Sylvan Dell Publishing. ISBN 193435922X. 2007.</p> <p>Fisher, Doris and Dani Sneed. <i>One Odd Day</i>. Sylvan Dell Publishing. ISBN 1934359335. 2007.</p> <p>Hall, Pamela. <i>The Odds Get Even: The Day the Odd Numbers Went on Strike</i>. Piggy Toes Press. ISBN 1581172168. 2003.</p> <p>Murphy, Stuart J. <i>Double the Ducks (MathStart 1)</i>. HarperCollins. ISBN 0064462498. 2002.</p> <p>Murphy, Stuart J. <i>Leaping Lizards (MathStart 1)</i>. HarperCollins. ISBN 0060001321. 2005.</p>

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					<p>Murphy, Stuart J. <i>Missing Mittens (MathStart 1)</i>. HarperCollins. ISBN 0064467333. 2000.</p> <p>Pallotta, Jerry. <i>Reese's Pieces Count by Fives</i>. Cartwheel. ISBN 0439135206. 2000.</p> <p>Pallotta, Jerry. <i>Reese's Pieces County by Tens</i>. Scholastic, Inc. ISBN 0439639905. 2004.</p> <p><b>Links:</b>  <a href="http://www.akidsmath.com">www.akidsmath.com</a>  <a href="http://www.mathisfun.com">www.mathisfun.com</a>  <a href="http://www.funbrain.com">www.funbrain.com</a>  <a href="http://www.xpmath.com">www.xpmath.com</a></p> <p>MAISA curriculum units and resources:  <a href="http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013">http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013</a></p> <p>Number line  Hundreds chart  Addition Table  Multiplication Table  My Math  Curriculum Crafter</p>

**Mathematics Pacing Guide  
Third Grade**

**Time Frame: 7 Weeks – December - January**  
**Unit 4: Understanding Multiplication and Division**

Standards for Mathematical Practice	Literacy Standards
<ol style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them</li> <li>2. Reason abstractly and quantitatively</li> <li>3. Construct viable arguments and critique the reasoning of others</li> <li>4. Model with mathematics</li> <li>5. Use appropriate tools strategically</li> <li>6. Attend to precision</li> <li>7. Look for and make use of structure</li> <li>8. Look for and express regularity in repeated reasoning</li> </ol>	<p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p><b>RI.3.3</b> Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect</p> <p><b>RI.3.4</b> Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</p> <p><b>RI.3.5</b> Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</p> <p><b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key event occur)</p> <p><b>SL.3.2</b> Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.3.3</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>L.3.4a and c</b> Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies. A. Use sentence-level context as a clue to the meaning of a word or phrase. C. Use a known root word as a clue to the meaning of an unknown word with the same root.</p> <p><b>L.3.5b.</b> Demonstrate understanding of word relationships and nuances in word meaning. b. Identify real-life connections between words and their use.</p>



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<p>when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as <math>56 \div 8</math>.</p> <p><b>3. OA.3</b> Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</p> <p><b>3. OA.4</b> Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations <math>8 \times ? = 48</math>, <math>5 = \_ \div 3</math>, <math>6 \times 6 = ?</math></p> <p><b>3. OA.8</b> Solve two-step word problems using the four operations. 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><b>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</b></p> <p><b>3. OA.9</b> Identify arithmetic</p>					<p><a href="http://www.primaryresources.co.uk/maths/maths.htm">com</a></p> <p>Instructional Resources:  <a href="http://www.primaryresources.co.uk/maths/maths.htm#numbers">http://www.primaryresources.co.uk/maths/maths.htm#numbers</a>  This site provides an opportunity to practice math facts with challenges like Timed Math Challenges, Multiplication Jeopardy, Bingo, etc.</p> <p><a href="http://www.aplusmath.com/Games/HiddenPicture/HiddenPicture.php?gametype=Multiplication%20A0">http://www.aplusmath.com/Games/HiddenPicture/HiddenPicture.php?gametype=Multiplication%20A0</a>  This site gives multiplication fact practice.</p> <p><a href="http://www.aplusmath.com/Games/Concentration/Multiplication_Concentration.html">http://www.aplusmath.com/Games/Concentration/Multiplication_Concentration.html</a>  "Multiplication Concentration" Students match multiplication problem with the correct solution.</p> <p><a href="http://www.aplusmath.com/Games/PlanetBlasterBasics/index.html">http://www.aplusmath.com/Games/PlanetBlasterBasics/index.html</a>  "Planet Blaster" Students protect the planet by answering the multiplication fact correctly.</p> <p><a href="http://www.primaryresources.co.uk/maths/maths.htm">http://www.primaryresources.co.uk/maths/maths.htm</a></p>



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<p>patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.</p>					<p>This site links you to activities on multiplication and division with whole numbers. There are timed math challenges. Check out Multiplication Jeopardy and Bingo among worthwhile activities.</p> <p><a href="http://softschools.com/math/">http://softschools.com/math/</a></p> <p>This site provides links to online games and resources for multiplication and division.</p>
<p><b>Understand properties of multiplication and the relationship between multiplication and division.</b>  <b>3. OA.5</b> Apply properties<sup>1</sup> of operations as strategies to multiply and divide. Examples: If <math>6 \times 4 = 24</math> is known, then <math>4 \times 6 = 24</math> is also known. (Commutative property of multiplication.) <math>3 \times 5 \times 2</math> can be found by <math>3 \times 5 = 15</math> then <math>15 \times 2 = 30</math>, or by <math>5 \times 2 = 10</math> then <math>3 \times 10 = 30</math>. (Associative property of multiplication.) Knowing that <math>8 \times 5 = 40</math> and <math>8 \times 2 = 16</math>, one can find <math>8 \times 7</math> as <math>8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56</math>. (Distributive property.)</p> <p><b>3. OA.6</b> Understand division as an unknown-factor problem. For example, divide <math>32 \div 8</math> by finding the number that makes 32 when</p>	<p>When is division used in the real world?</p> <p>How do we break numbers apart?</p>	<p><b>Before</b>  Timed Tests  multiplication and division problems</p> <p>Pretest</p> <p><b>During</b>  Slate Response– quick check on multiplication/ division facts</p> <p>Multiplication Bingo</p> <p>Timed Tests  multiplication and division problems</p> <p>Around the world</p> <p><b>After</b>  Fact families</p>	<p>Jan 30</p>	<p>commutative  distributive  divide  equal groups  equation  factor  groups  multiply  part of a whole  partial product  product  sum  whole</p>	<p>This site provides links to online games and resources for multiplication and division.</p> <p><a href="http://www.mathplayground.com/games.html">http://www.mathplayground.com/games.html</a></p> <p>This site provides links to online games and resources for multiplication and division.</p> <p><a href="http://www.multiplication.com/games/play/farm-freak-out">http://www.multiplication.com/games/play/farm-freak-out</a></p> <p>Students gather the sheep by answering math facts correctly. Level of difficulty can be adjusted.</p> <p><a href="http://www.multiplication.com/games/play/cone-crazy">http://www.multiplication.com/games/play/cone-crazy</a></p> <p>"Cone Crazy" Students answer the math facts on the ice cream scoops. Level of difficulty can be adjusted.</p>

<sup>1</sup> Students need not use formal terms for these properties.

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
<p>multiplied by 8.</p> <p><b>3. OA.7</b> Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that <math>8 \times 5 = 40</math>, one knows <math>40 \div 5 = 8</math>) or properties of operations. By the end of Grade 3, know from memory all products of one-digit numbers.</p>		<p>Game</p> <p>Around the world</p> <p>Timed Tests multiplication and division problems</p> <p>Mini quiz – multiplication/ division facts</p>			<p><a href="http://www.multiplication.com/games/play/fish-shop">http://www.multiplication.com/games/play/fish-shop</a>            "Fish Shop" Students scoop the fish by correctly answering the math facts. Level of difficulty can be adjusted.</p> <p><a href="http://www.multiplication.com/games/play/penguin-jump">http://www.multiplication.com/games/play/penguin-jump</a>            "Penguin Jump" Up to four students attempt to hop across the icebergs by answering the math facts the fastest.</p> <p>My Math Curriculum Crafter</p> <p><b>Videos:</b>            Youtube.com:            Cyberchase Episode 119- Send in the Clones (multiplication basics)</p> <p>Youtube.com:            Cyberchase Episode 501- Halloween Howl (division basics)</p> <p><b>Literature Connections</b>            Murphy, Stuart. <i>Divide and Ride</i>. Harper Trophy. ISBN-13: 978-0060267773. 1997.            Murphy, Stuart. <i>Too Many Kangaroo Things to Do</i>. Harper Collins. ISBN-0-06-025884-5. 1996.</p> <p>Froman, Robert. <i>The Greatest</i></p>

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
					<p><i>Guessing Game: A Book About Division.</i> Thomas Y. Crowell. ISBN 0690013764. 1978.</p> <p>Giganti, Paul. <i>Each Orange Has Eight Slices.</i> Mulberry Books. ISBN 0-688-13985-x. 1992.</p> <p>Hulme, Jay. <i>Sea Squares.</i> Hyperion. ISBN 1-56282-520-8. 1991.</p> <p>Pinczes, Elinor. <i>A Remainder of One.</i> Houghton Mifflin. ISBN 0-618-25077-8. 1995.</p> <p>Pinczes, Elinor. <i>One Hundred Hungry Ants.</i> Houghton Mifflin. ISBN 0-395-97123-3. 1993.</p> <p>Burns, Marilyn. <i>Amanda Bean's Amazing Dream.</i> Scholastic. ISBN 0-590-30012. 1998.</p> <p>Hutchins, Pat. <i>The Doorbell Rang.</i> Green Willow Books. ISBN 0-688-05252-5. 1986.</p> <p>Flash cards Multiplication games Counters</p> <p>Math Games: <a href="http://www.arcademicskillbuilders.c">www.arcademicskillbuilders.c</a></p>

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
					<a href="#">om</a>

**Mathematics Pacing Guide  
Third Grade**

**Time Frame: 2 Weeks – February  
Unit 5: Solving Problems with Multiplication and Division**

Standards for Mathematical Practice	Literacy Standards
<ul style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them</li> <li>2. Reason abstractly and quantitatively</li> <li>3. Construct viable arguments and critique the reasoning of others</li> <li>4. Model with mathematics</li> <li>6. Attend to precision</li> </ul>	<p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p><b>RI.3.3</b> Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect</p> <p><b>RI.3.4</b> Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</p> <p><b>RI.3.5</b> Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</p> <p><b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key event occur)</p> <p><b>SL.3.2</b> Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.3.3</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>L.3.4a and c</b> Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies. A. Use sentence-level context as a clue to the meaning of a word or phrase. C. Use a known root word as a clue to the meaning of an unknown word with the same root.</p>

Standards for Mathematical Practice	Literacy Standards
	<p><b>L.3.5b.</b> Demonstrate understanding of word relationships and nuances in word meaning.</p> <p>b. Identify real-life connections between words and their use.</p> <p><b>W.3.2a and b</b> Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.</p> <p>b. Develop the topic with facts, definitions, and details.</p> <p><b>W.3.5</b> With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.</p>

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
<p><b>CRITICAL AREA:</b></p> <p><b>3. NBT.2</b> Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.</p> <p><b>Use place value understanding and properties of operations to perform multi-digit arithmetic.</b></p> <p><b>3.NBT.3</b> Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., <math>9 \times 80</math>, <math>5 \times 60</math>) using strategies based on place value and properties of operations<sup>2</sup>.</p> <p><b>Developing understanding of multiplication and division and strategies for multiplication and</b></p>	<p><b>Essential Question</b> How can a word problem be represented with numbers and symbols?</p> <p>What are ways to discover the operation needed to solve a word problem?</p> <p><b>Scaffold</b> What can you use to represent an unknown in a number sentence?</p> <p>How can knowing mathematics fact help to solve two-step word problems?</p>	<p><b>Before</b> Daily word problem</p> <p>Discussion</p> <p><b>During</b> Timed Multiplication/division on test</p> <p>Daily word problem</p> <p>Think-pair-share</p> <p>Drawing (show and tell)</p> <p><b>After</b></p>	<p>2015-16: 2.19.16</p> <p>Feb - 16</p>	<p>divide equal groups equation factor groups multiply part of a whole partial product product sum whole</p>	<p>Resources for multiplying and dividing whole numbers: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#d">http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#d</a></p> <p>Resources for problem solving with whole numbers: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#e">http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#e</a></p> <p>MAISA curriculum units and resources: <a href="http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013">http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013</a></p>

<sup>2</sup> A range of algorithms may be used

<p><b>division within 100</b></p> <p><b>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</b></p> <p><b>3. OA.8</b> Solve two-step word problems using the four operations. 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<sup>3</sup>.</p>		<p>Word problem for students to show (with a drawing or representation) and tell (in words) how they found the answer</p>		<p>Daily word problems</p> <p>Story problem of the month  <a href="http://www.mathedleadership.org">www.mathedleadership.org</a></p> <p><b>Manipulatives:</b>  Counters  Multiplication table  Fact triangles  Graph paper  Flash cards  Number lines</p> <p><b>Math Worksheets:</b>  <a href="http://www.superteacherworksheets.com">www.superteacherworksheets.com</a></p> <p><b>Instructional Resources:</b>  <a href="http://www.primaryresources.co.uk/maths/maths.htm#numbers">http://www.primaryresources.co.uk/maths/maths.htm#numbers</a>  This site provides an opportunity to practice math facts with challenges like Timed Math Challenges, Multiplication Jeopardy, Bingo, etc.</p> <p><a href="http://www.aplusmath.com/Games/HiddenPicture/HiddenPicture.php?gametype=Multiplication%C2%A0">http://www.aplusmath.com/Games/HiddenPicture/HiddenPicture.php?gametype=Multiplication%C2%A0</a>  This site gives multiplication fact practice.</p> <p><a href="http://www.aplusmath.com/G">http://www.aplusmath.com/G</a></p>
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<sup>3</sup> This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations)

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				<p><a href="http://www.multiplication.com/games/play/farm-freak-out">m/games/play/farm-freak-out</a> Students gather the sheep by answering math facts correctly. Level of difficulty can be adjusted.</p> <p><a href="http://www.multiplication.com/games">http://www.multiplication.com/games</a> "Cone Crazy" Students answer the math facts on the ice cream scoops. Level of difficulty can be adjusted.</p> <p><a href="http://www.multiplication.com/games/play/fish-shop">http://www.multiplication.com/games/play/fish-shop</a> "Fish Shop" Students scoop the fish by correctly answering the math facts. Level of difficulty can be adjusted.</p> <p><a href="http://www.multiplication.com/games/play/penguin-jump">http://www.multiplication.com/games/play/penguin-jump</a> "Penguin Jump" Up to four students attempt to hop across the icebergs by answering the math facts the fastest.</p> <p>My Math Curriculum Crafter</p> <p><b>Videos:</b> Youtube.com: Cyberchase Episode 119- Send in the Clones (multiplication basics)</p> <p>Youtube.com: Cyberchase Episode 501- Halloween Howl (division</p>
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					<p>basics)</p> <p><b>Literature Connections:</b>  Murphy, Stuart. <i>Divide and Ride</i>. Harper Trophy. ISBN-13: 978-0060267773. 1997.</p> <p>Murphy, Stuart. <i>Too Many Kangaroo Things to Do</i>. Harper Collins. ISBN-0-06-025884-5. 1996.</p> <p>Froman, Robert. <i>The Greatest Guessing Game A Book About Division</i>. Thomas Y. Crowell. ISBN 0690013764. 1978.</p> <p>Giganti, Paul. <i>Each Orange Has Eight Slices</i>. Mulberry Books. ISBN 0-688-13985-x. 1992.</p> <p>Hulme, Jay. <i>Sea Squares</i>. Hyperion. ISBN 1-56282-520-8. 1991.</p> <p>Pinczes, Elinor. <i>A Remainder of One</i>. Houghton Mifflin. ISBN 0-618-25077-8. 1995.</p> <p>Pinczes, Elinor. <i>One Hundred Hungry Ants</i>. Houghton Mifflin. ISBN 0-395-97123-3. 1993.</p> <p>Burns, Marilyn. <i>Amanda Bean's Amazing Dream</i>. Scholastic. ISBN 0-590-</p>
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					30012. 1998.  Hutchins, Pat. <i>The Doorbell Rang</i> . Green Willow Books. ISBN 0-688-05252-5. 1986.
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**Mathematics Pacing Guide  
Third Grade**

**Time Frame: 6 Weeks – mid- February - March  
Unit 6: Fractions**

Standards for Mathematical Practice	Literacy Standards
<ol style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them</li> <li>2. Reason abstractly and quantitatively</li> <li>3. Construct viable arguments and critique the reasoning of others</li> <li>4. Model with mathematics</li> <li>5. Use appropriate tools strategically</li> <li>6. Attend to precision</li> <li>7. Look for and make use of structure</li> </ol>	<p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p><b>RI.3.3</b> Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect</p> <p><b>RI.3.4</b> Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</p> <p><b>RI.3.5</b> Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</p> <p><b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key event occur)</p> <p><b>SL.3.2</b> Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.3.3</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>L.3.4a and c</b> Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.</p> <ol style="list-style-type: none"> <li>a. Use sentence-level context as a clue to the meaning of a word or phrase.</li> <li>c. Use a known root word as a clue to the meaning of an unknown word with the same root.</li> </ol> <p><b>L.3.5b.</b> Demonstrate understanding of word relationships and nuances in word meaning.</p> <ol style="list-style-type: none"> <li>b. Identify real-life connections between words and their use.</li> </ol>

Standards for Mathematical Practice	Literacy Standards
	<p><b>W.3.2a and b</b> Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.</p> <p>b. Develop the topic with facts, definitions, and details.</p> <p><b>W.3.5</b> With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.</p>

Common Core	Essential Questions	Assessments	Assessment Dates	Vocabulary	Resources
<p><b>CRITICAL AREA:</b> <b>Developing understanding of fractions, especially unit fractions (fractions with numerator 1)<sup>4</sup></b></p> <p><b>Develop understanding of fractions as numbers</b></p> <p><b>3. NF.1</b> Understand a fraction <math>1/b</math> as the quantity formed by 1 part when a whole is partitioned into <math>b</math> equal parts; understand a fraction <math>a/b</math> as the quantity formed by <math>a</math> parts of size <math>1/b</math>.</p> <p><b>3. NF.2</b> Understand a fraction as a number on the number line; represent fractions on a number line diagram.</p> <p>a. Represent a fraction <math>1/b</math> on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into <math>b</math></p>	<p><b>Essential Question</b> What does a fraction represent?</p> <p>How do the numerator and denominator affect the size of the fraction?</p> <p><b>Scaffold</b> How are fractions like and unlike whole numbers?</p> <p>How do we break a number into parts?</p> <p>How can fractions be represented visually and symbolically?</p>	<p><b>Before</b> Discover fractions of tangible items (candy bar, pizza, fraction rods, classmates)</p> <p>Pretest</p> <p><b>During</b> Fraction bingo</p> <p>Shading shapes</p> <p>Sketch/ partition shapes into fraction</p> <p>Finding equivalent fractions</p> <p>Finding unit fraction and</p>	<p>2015-16: 4.1.16</p> <p>March 31</p>	<p>denominator equal parts equivalence fraction number line numerator part whole</p>	<p>Resources for understanding simple fractions, relation to the whole, and addition and subtraction of fractions: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#f">http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#f</a></p> <p>Resources for understanding simple decimal fractions in relation to money: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#g">http://apps.svsu.edu/mathsci-center/uploads/math/E03N.htm#g</a></p> <p>MAISA curriculum units and resources: <a href="http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?Sou">http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?Sou</a></p>

<sup>4</sup> Grade 3 expectations are limited to fractions with denominators 2, 3, 4, 6, and 8.

Common Core	Essential Questions	Assessments	Assessment Dates	Vocabulary	Resources
<p>equal parts. Recognize that each part has size <math>1/b</math> and that the endpoint of the part based at 0 locates the number <math>1/b</math> on the number line.</p> <p>b. Represent a fraction <math>a/b</math> on a number line diagram by marking off a lengths <math>1/b</math> from 0. Recognize that the resulting interval has size <math>a/b</math> and that its endpoint locates the number <math>a/b</math> on the number line.</p> <p><b>3. NF.3</b> Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</p> <p>b. Recognize and generate simple equivalent fractions (e.g., <math>1/2 = 2/4</math>, <math>4/6 = 2/3</math>), Explain why the fractions are equivalent, e.g., by using a visual fraction model.</p> <p>c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form <math>3 = 3/1</math>; recognize that <math>6/1 = 6</math>; locate <math>4/4</math> and 1 at the same point of a number line diagram.</p> <p>d. Compare two fractions with the same numerator or the same denominator, by reasoning about their size, Recognize that valid</p>	<p>How can understanding unit fractions help us make sense of, build, and use other fractions?</p> <p>How can understanding equivalent fractions help us solve problems?</p> <p>Are there fractions equal to and/or greater than one? If yes, why? If no, why not?</p>	<p>discussing what it means</p> <p><b>After</b> Test - Fractions</p>			<p><a href="#">rceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013</a></p> <p>Sentence strips Chart paper Fraction chart Graph paper Fraction rods Fraction disks</p> <p>Using food to show a fraction of a whole Hershey’s candy bar Pizza Cooking books</p> <p>Have students describe what they learned in writing after experiencing fractions with food, then have them think of their own examples to show fractions and write about it.</p> <p>My Math Curriculum Crafter</p> <p><b>Math Lessons:</b> <a href="http://www.aaastudy.com">www.aaastudy.com</a></p> <p><b>Math Games:</b> <a href="http://www.gamequarium.com">www.gamequarium.com</a> <a href="http://www.mathisfun.com">www.mathisfun.com</a> <a href="http://www.funbrain.com">www.funbrain.com</a></p> <p><b>Games and Worksheets:</b> <a href="http://www.aplusmath.com">www.aplusmath.com</a></p> <p><b>Instructional Resources:</b></p>

Common Core	Essential Questions	Assessments	Assessment Dates	Vocabulary	Resources
<p>comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual fraction model.</p> <p><b>Represent and interpret data</b>  <b>3. MD.4</b> Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.</p> <p><b>Reason with shapes and their attributes</b>  <b>3. G.2</b> Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area and describe the area of each part is <math>\frac{1}{4}</math> of the area of the shape.</p>					<p><a href="http://www.visualfractions.com/compare.htm">http://www.visualfractions.com/compare.htm</a>  This website gives practice in comparing fractions.</p> <p><a href="http://www.mathgoodies.com/lessons/fractions/order.html">http://www.mathgoodies.com/lessons/fractions/order.html</a>  Ordering fractions with like denominators.</p> <p><a href="http://webmath.com/k8cf.html">http://webmath.com/k8cf.html</a>  Students type in two fractions and a pictorial representation of the two fractions helps to show visually which is larger.</p> <p><a href="http://www.mathplayground.com/fractions_compare.html">www.mathplayground.com/fractions_compare.html</a>  Students use <math>&lt;</math>, <math>&gt;</math>, or <math>=</math> to compare fractions.</p> <p><a href="http://www.aaamath.com/B/fra16_x2.htm#section2">http://www.aaamath.com/B/fra16_x2.htm#section2</a>  Students have to click on the correct fraction to identify the shaded fraction.</p> <p><a href="http://www.oswego.org/ocsd-web/games/fractionflags/ffthir ds.html">http://www.oswego.org/ocsd-web/games/fractionflags/ffthir ds.html</a>  This website gives students practice identifying fractions of halves, thirds, and fourths.</p> <p><a href="http://www.learn-with-math-games.com/fractions-for-kids.html">http://www.learn-with-math-games.com/fractions-for-kids.html</a></p>

Common Core	Essential Questions	Assessments	Assessment Dates	Vocabulary	Resources
					<p>This site has the directions to a game that the class can play related to fractions.</p> <p><a href="http://www.sheppardsoftware.com/mathgames/fractions/Balloons_fractions1.htm">http://www.sheppardsoftware.com/mathgames/fractions/Balloons_fractions1.htm</a></p> <p>Ordering fractions from least to greatest.</p> <p>Cyberchase Videos: Episode 106. Zeus on the Loose- Fractions: When you need to divide things up into parts and share them, fractions are the numbers to use.</p> <p>Episode 203. Harriet the Hippo and the Mean Green- Equivalent Fractions: Fractions that look different can represent the same portion of a whole.</p> <p>Episode 510. A Fraction of a Chase-Fractions 101: When you share parts of a whole, it takes two numbers to tell the story- the top and bottom numbers of a fraction.</p> <p><b>Literature Connections:</b> Adler, David. <i>Fraction Fun</i>. Holiday House. ISBN 10:0823413411.</p>

Common Core	Essential Questions	Assessments	Assessment Dates	Vocabulary	Resources
					<p>1997.</p> <p>Murphy, Stuart J. <i>Jump, Kangaroo, Jump!</i> HarperCollins Publishers. ISBN 006446721X. 1999.</p> <p>Pallotta, Jerry. <i>Apple Fractions</i>. Cartwheel Books. 13: 9780439389013 Scholastic. 2002.</p> <p>Pallotta, Jerry and Robert C. Bolster. <i>Pizza Fractions</i>. Scholastic. ISBN 0545006872. 2007.</p> <p>Palotta, Jerry. <i>The Hershey's Milk Chocolate Book</i>. Cartwheel Books. ISBN 0439135192. 1999.</p> <p>Comber, Barbara. <i>Dad's Diet</i>. Scholastic. ISBN 13:9780590437714. 1992.</p> <p>McMillan, Bruce. <i>Eating Fractions</i>. Scholastic. ISBN 13:9780590437714. 1992.</p> <p>Hutchins, Pat. <i>The Doorbell Rang</i>. Mulberry Books. ISBN 0688092349. 1986.</p>



Common Core	Essential Questions	Assessments	Assessment Dates	Vocabulary	Resources
					<p>Van Cleve, J. <i>Math For Every Kid</i>. John Wily &amp; Sons, Inc.. ISBN 0471542652. 1991</p> <p>Burns, Marilyn. <i>Math for Smarty Pants</i>. Little, Brown, &amp; Co. ISBN 978-0316117395. 1982.</p> <p>Bauer Stamper, Judith. <i>Go, Fractions!</i>. Gossett and Dunlap. ISBN 9780448431130.2003.</p>

**Mathematics Pacing Guide  
Third Grade**

**Time Frame: 2 Weeks – April  
Unit 7: Measurement**

Standards for Mathematical Practice	Literacy Standards
<ul style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them</li> <li>2. Reason abstractly and quantitatively</li> <li>3. Construct viable arguments and critique the reasoning of others</li> <li>5. Use appropriate tools strategically</li> <li>6. Attend to precision</li> </ul>	<p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p><b>RI.3.4</b> Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</p> <p><b>RI.3.5</b> Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</p> <p><b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key event occur)</p> <p><b>SL.3.2</b> Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.3.3</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>L.3.4a and c</b> Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.</p> <ul style="list-style-type: none"> <li>a. Use sentence-level context as a clue to the meaning of a word or phrase.</li> <li>c. Use a known root word as a clue to the meaning of an unknown word with the same root.</li> </ul> <p><b>L.3.5b.</b> Demonstrate understanding of word relationships and nuances in word meaning.</p> <ul style="list-style-type: none"> <li>b. Identify real-life connections between words and their use.</li> </ul>

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
<p><b>3.OA.3.</b> Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.</p> <p><b>3.OA.8.</b> Solve two-step word problems using the four operations. 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><b>3.NF.2.</b> Understand a fraction as a number on the number line; represent fractions on a number line diagram.</p> <p><b>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</b></p> <p><b>3. MD.1</b> Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.</p> <p><b>3. MD.2</b> Measure and estimate liquid volumes and masses of objects using standard units of</p>	<p><b><u>Essential Questions</u></b> Why and how do we use tools to collect and record data?</p> <p>What is time and how do we measure it?</p> <p><b><u>Scaffold</u></b> How do we know which tool is most appropriate to use to measure?</p> <p>How can understanding a number line help you to measure accurately?</p> <p>How are precision and estimation related to measuring?</p>	<p><b><u>Before</u></b> Practical experience/ Observation time/volume and masses</p> <p>Give real world experiences for students to think about with a partner as they begin to understand time and measurement</p> <p><b><u>During</u></b> Verbal response – reciting time to the nearest minute, using a clock</p> <p>Journal – why do we need to be precise when telling time? Why is it important to be precise in measurement?</p> <p>Slate response – write the time using a clock</p> <p>Give students a time to draw. Have students explain what each hand looks like at 3:47</p> <p><b><u>After</u></b> Quiz- Telling time and measuring volumes and masses</p>	<p>2015-16: 4.22.16</p> <p>April- 20</p>	<p>addition difference equation gram (g) kilogram (kg) liter (L) mass mathematical sentences multiplication subtraction (including both comparison and take away model) sum variable</p>	<p>Resources for measuring and using units for length, weight, temperature, and time: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03M.htm#a">http://apps.svsu.edu/mathsci-center/uploads/math/E03M.htm#a</a></p> <p>Resources for solving measurement problems: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03M.htm#d">http://apps.svsu.edu/mathsci-center/uploads/math/E03M.htm#d</a></p> <p>MAISA curriculum units and resources: <a href="http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013">http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013</a></p> <p>Teacher clock Individual student clocks Different size jars/containers</p> <p>My Math Curriculum Crafter <b>Math Games:</b> <a href="http://www.mathisfun.com">www.mathisfun.com</a></p> <p><b>Instructional Resources:</b></p>

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
<p>grams (g), kilograms (kg), and liters (l)<sup>5</sup>. Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem<sup>6</sup>.</p>					<p><a href="http://illuminations.nctm.org/LessonDetail.aspx?ID=L651">http://illuminations.nctm.org/LessonDetail.aspx?ID=L651</a></p> <p><a href="http://www.netrover.com/~kingskid/season/seasonmain.htm">http://www.netrover.com/~kingskid/season/seasonmain.htm</a> The Season Transporter will take you into full interactive screen movies with animation and sound but you must first enter a season and a proper temperature for that season.</p> <p><a href="http://www.acs.ac/staffdev/curricu/lp_3_mv_mwmsuic.htm">http://www.acs.ac/staffdev/curricu/lp_3_mv_mwmsuic.htm</a> This is a whole class activity that deals with measuring with non-standard units in cylinders and rectangular prisms.</p> <p><a href="http://www.teachervision.fen.com/measuring-space/video/57054.html?detoured=1">http://www.teachervision.fen.com/measuring-space/video/57054.html?detoured=1</a> Video showing students ordering containers from least to greatest.</p>

<sup>5</sup> Excludes compound units such as  $\text{cm}^3$  and finding the geometric volume of a container.

<sup>6</sup> Excludes multiplicative comparison problems (problems involving notions of “times as much.”)

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
					<p><a href="http://www.aaamath.com/g316_ax1.htm#section2">http://www.aaamath.com/g316_ax1.htm#section2</a> Students convert hours into minutes.</p> <p><a href="http://illuminations.nctm.org/LessonDetail.aspx?id=L863">http://illuminations.nctm.org/LessonDetail.aspx?id=L863</a> In this lesson, students will create memorable benchmarks for ounces and pounds by playing a classroom scavenger hunt game in which they gain points for finding objects that weigh approximately an ounce or pound. Students will practice weighing objects and will discuss why it is important to know the difference between ounces and pounds. (a kitchen scale is needed)</p> <p><a href="http://www.oswego.org/ocsd-web/games/StopTheClock/sthec3.html">http://www.oswego.org/ocsd-web/games/StopTheClock/sthec3.html</a> Students need to match the digital time with the correct analog clock. Times shown are to the nearest five minutes.</p> <p><a href="http://www.education.com/worksheet/article/measuring-volume/">http://www.education.com/worksheet/article/measuring-volume/</a></p>

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
					<p>In this activity the student looks at the objects pictured, estimates how much liquid they can hold, and then measures the volume and writes the findings on the page.</p> <p><a href="http://illuminations.nctm.org/LessonDetail.aspx?ID=L193">http://illuminations.nctm.org/LessonDetail.aspx?ID=L193</a></p> <p>Students use a nonstandard cup or plastic drinking container, the minimum amount of fruit drink needed to serve class members (Students need to do research at a grocery store unless lesson is adapted.).</p> <p><a href="http://www.acs.ac/staffdev/curricu/lp_3_mv_mwmsuic.htm">http://www.acs.ac/staffdev/curricu/lp_3_mv_mwmsuic.htm</a></p> <p>Measure with non-standard units in cylinders and rectangular prisms.</p> <p><a href="http://mrnuessbaum.com/soda/">http://mrnuessbaum.com/soda/</a></p> <p>"Artie Ounces Soda Jerk"  Student operates a "soda fountain" by choosing the correct volume measures to fill customer orders. They need to make correct conversions for amounts that are not equivalent to</p>

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
					<p>the cup sizes offered.</p> <p><b>Literature Connections:</b>  Clement, Rod. <i>Counting on Frank</i>. Harper Collins. ISBN 13: 978-0395703939. 1991.</p> <p>Jenkins, Steve. <i>Big and Little</i>. Houghton Mifflin. ISBN 0-395-72664-6. 1996.</p> <p>Jenkins, Steve. <i>Biggest, Strongest, Fastest</i>. Houghton Mifflin. ISBN 0-395-86136-5. 1996.</p> <p><b>Professional Resources:</b>  Bray, W., Sanchez,L. (2010, Sept.). 17 (2). 90.</p> <p>Burns, Marilyn. <i>Math and Literature (K-3)</i>.Book 1. 1992.</p> <p>Bresser, Rusty. <i>Cuisenaire</i>. ISBN 0-941355-14-4. 1995.</p> <p>Van de Walle, John A. <i>Elementary and Middle School Mathematics</i>. Pearson Inc. ISBN- 13: 978-0-205-57352-3. 2010.</p>

**Mathematics Pacing Guide  
Third Grade**

**Time Frame: 2 Weeks – mid- April- May  
Unit 8: Graphing**

Standards for Mathematical Practice	Literacy Standards
<ol style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them</li> <li>2. Reason abstractly and quantitatively</li> <li>3. Construct viable arguments and critique the reasoning of others</li> <li>4. Model with mathematics</li> <li>6. Attend to precision</li> </ol>	<p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p><b>RI.3.3</b> Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect</p> <p><b>RI.3.4</b> Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</p> <p><b>RI.3.5</b> Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</p> <p><b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key event occur)</p> <p><b>SL.3.2</b> Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.3.3</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>L.3.4a and c</b> Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.</p> <ol style="list-style-type: none"> <li>a. Use sentence-level context as a clue to the meaning of a word or phrase.</li> <li>c. Use a known root word as a clue to the meaning of an unknown word with the same root.</li> </ol> <p><b>L.3.5b.</b> Demonstrate understanding of word relationships and nuances in word meaning.</p> <ol style="list-style-type: none"> <li>b. Identify real-life connections between words and their use.</li> </ol>



Standards for Mathematical Practice	Literacy Standards
	<p><b>W.3.2a and b</b> Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.</p> <p>b. Develop the topic with facts, definitions, and details.</p> <p><b>W.3.5</b> With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.</p>

Common Core	Essential Questions	Assessments	Assessment Dates	Vocabulary	Resources
<p><b>Represent and interpret data</b></p> <p><b>3. MD.3</b> Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</p>	<p><b>Essential Questions:</b> What are the different ways to represent data?</p> <p>How does representing data help us solve real-world and mathematical problems?</p> <p><b>Scaffold:</b> How does a key help us understand the data?</p>	<p><b>Before</b> Present a graph and have students make observation about data</p> <p>KWL</p> <p><b>During</b> Slate response- draw pictograph and bar graph</p> <p>Response cards</p> <p>Create graph to go along with student data.</p> <p><b>After</b> Test- draw/respond to pictograph and bar graphs</p>	<p>2015-16: 5.6.16</p> <p>May 29</p>	<p>bar graph chart data graph</p>	<p>Resources for using bar graphs: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03D.htm#a">http://apps.svsu.edu/mathsci-center/uploads/math/E03D.htm#a</a></p> <p>MAISA curriculum units and resources: <a href="http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013">http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013</a></p> <p>Interactive Bar Graph: <a href="http://www.amblesideprimary.com/ambleweb/mentalmaths/grapher.html">http://www.amblesideprimary.com/ambleweb/mentalmaths/grapher.html</a></p> <p>Graph Paper</p> <p><a href="http://illuminations.nctm.org/LessonDetail.aspx?ID=L651">http://illuminations.nctm.org/LessonDetail.aspx?ID=L651</a></p>

				<p><a href="http://www.acs.ac/staffdev/curricu/lp_3_mv_mwnsuic.htm">http://www.acs.ac/staffdev/curricu/lp_3_mv_mwnsuic.htm</a> This is a whole class activity that deals with measuring with non-standard units in cylinders and rectangular prisms.</p> <p><a href="http://www.teachervision.fen.com/measuring-space/video/57054.html?detoured=1">http://www.teachervision.fen.com/measuring-space/video/57054.html?detoured=1</a> Video showing students ordering containers from least to greatest.</p> <p><a href="http://www.aaamath.com/g316_ax1.htm#section2">http://www.aaamath.com/g316_ax1.htm#section2</a> Students convert hours into minutes.</p> <p><a href="http://illuminations.nctm.org/LessonDetail.aspx?id=L863">http://illuminations.nctm.org/LessonDetail.aspx?id=L863</a> In this lesson, students will create memorable benchmarks for ounces and pounds by playing a classroom scavenger hunt game in which they gain points for finding objects that weigh approximately an ounce or pound. Students will practice weighing objects and will discuss why it is important to know the difference between ounces and pounds. (a kitchen scale is needed)</p> <p><a href="http://www.oswego.org/ocsd-">http://www.oswego.org/ocsd-</a></p>
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				<p><a href="http://www.games/StopTheClock/sthec3.html">web/games/StopTheClock/sthec3.html</a>  Students need to match the digital time with the correct analog clock. Times shown are to the nearest five minutes.</p> <p><a href="http://www.education.com/worksheets/article/measuring-volume/">http://www.education.com/worksheets/article/measuring-volume/</a>  In this activity the student looks at the objects pictured, estimates how much liquid they can hold, and then measures the volume and writes the findings on the page.</p> <p><a href="http://illuminations.nctm.org/LessonDetail.aspx?ID=L193">http://illuminations.nctm.org/LessonDetail.aspx?ID=L193</a>  Students use a nonstandard cup or plastic drinking container, the minimum amount of fruit drink needed to serve class members (Students need to do research at a grocery store unless lesson is adapted.).</p> <p><a href="http://www.acs.ac/staffdev/curricu/lp_3_mv_mwnsuic.htm">http://www.acs.ac/staffdev/curricu/lp_3_mv_mwnsuic.htm</a>  Measure with non-standard units in cylinders and rectangular prisms.</p> <p><a href="http://www.mrnussbaum.com/soda/index.html">http://www.mrnussbaum.com/soda/index.html</a>  "Artie Ounces Soda Jerk"  Student operates a "soda</p>
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				<p>fountain" by choosing the correct volume measures to fill customer orders. They need to make correct conversions for amounts that are not equivalent to the cup sizes offered.</p> <p>My Math Curriculum Crafter</p> <p><b>Literature Connections</b> Clement, Rod. <i>Counting on Frank</i>. Harper Collins. ISBN 13: 978-0395703939. 1991.</p> <p>Jenkins, Steve. <i>Big and Little</i>. Houghton Mifflin. ISBN 0-395-72664-6. 1996.</p> <p>Jenkins, Steve. <i>Biggest, Strongest, Fastest</i>. Houghton Mifflin. ISBN 0-395-86136-5. 1996.</p>
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**Mathematics Pacing Guide  
Third Grade**

**Time Frame: 5 Weeks – mid-May - June**  
**Unit 9: Geometry**

Standards for Mathematical Practice	Literacy Standards
<ol style="list-style-type: none"> <li>1. Make sense of problems and persevere in solving them</li> <li>2. Reason abstractly and quantitatively</li> <li>3. Construct viable arguments and critique the reasoning of others</li> <li>4. Model with mathematics</li> <li>5. Use appropriate tools strategically</li> <li>6. Attend to precision</li> </ol>	<p><b>RI.3.1</b> Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.</p> <p><b>RI.3.3</b> Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect</p> <p><b>RI.3.4</b> Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.</p> <p><b>RI.3.5</b> Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.</p> <p><b>RI.3.7</b> Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key event occur)</p> <p><b>SL.3.2</b> Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</p> <p><b>SL.3.3</b> Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.</p> <p><b>L.3.4a and c</b> Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.</p> <ol style="list-style-type: none"> <li>a. Use sentence-level context as a clue to the meaning of a word or phrase.</li> <li>c. Use a known root word as a clue to the meaning of an unknown word with the same root.</li> </ol> <p><b>L.3.5b.</b> Demonstrate understanding of word relationships and nuances in word meaning.</p> <ol style="list-style-type: none"> <li>b. Identify real-life connections between words and their use.</li> </ol>

Standards for Mathematical Practice	Literacy Standards
	<p><b>W.3.2a and b</b> Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.</p> <p>b. Develop the topic with facts, definitions, and details.</p> <p><b>W.3.5</b> With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.</p>

Common Core	Essential Questions	Assessments	Assessment Date	Vocabulary	Resources
<p><b>3.OA.1.</b> Interpret products of whole numbers, e.g., interpret <math>5 \times 7</math> as the total number of objects in 5 groups of 7 objects each.</p> <p><b>3.OA.3.</b> Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.</p> <p><b>Describing and analyzing two-dimensional shapes</b></p> <p><b>Reason with shapes and their attributes</b></p> <p><b>3. G.1</b> Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g.,</p>	<p><b>Essential Question</b> How are area and perimeter similar? How are they different?</p> <p><b>Scaffold</b> What does it mean to measure with precision?</p> <p>How can I figure out which tool is most appropriate to use to measure in a given situation?</p> <p>How is a square unit similar to and different from a linear unit?</p> <p>How can you find the area of a composite figure?</p>	<p><b>Before</b> Walk perimeter of school and ask students to discuss what was done.</p> <p>Fill in a tray using unit squares to discuss area.</p> <p>Pretest</p> <p><b>During</b> Count the tiles in the classroom</p> <p>Draw shapes with same perimeter, but different area.</p> <p>Draw shapes with same area, but different perimeter</p> <p>Slate board response – relate area to</p>	<p>2015-16: 6.10.16</p> <p>June 4</p>	<p>area array addition additive length multiplication one square unit perimeter polygon rectangle side square square units width</p>	<p>Resources for understanding meaning of area, perimeter, and applying it in problems: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03M.htm#b">http://apps.svsu.edu/mathsci-center/uploads/math/E03M.htm#b</a></p> <p>Resources for estimating perimeter and area: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03M.htm#c">http://apps.svsu.edu/mathsci-center/uploads/math/E03M.htm#c</a></p> <p>Resources for recognizing the basic elements of geometric objects: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03G.htm#a">http://apps.svsu.edu/mathsci-center/uploads/math/E03G.htm#a</a></p> <p>Resources for naming and exploring properties of shapes: <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E03G.htm#b">http://apps.svsu.edu/mathsci-center/uploads/math/E03G.htm#b</a></p>

<p>quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.</p> <p><b>Geometric measurement: understand concepts of area and relate area to multiplication and to addition</b></p> <p><b>3. MD.5</b> Recognize area as an attribute of plane figures and understand concepts of area measurement.</p> <p>a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.</p> <p>b. A plane figure which can be covered without gaps or overlaps by <math>n</math> unit squares is said to have an area of <math>n</math> square units.</p> <p><b>3.MD.6</b> Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).</p> <p><b>3. MD.7</b> Relate area to the operations of multiplication and addition.</p> <p>a. Find the area of a rectangle with whole-</p>		<p>multiplication and to addition</p> <p>Journal- Square units/ comparing area to perimeter</p> <p><b>After</b></p> <p>Test over perimeter and area, using addition and multiplication strategies.</p>			<p>Resources for recognizing symmetry and transformations:  <a href="http://apps.svsu.edu/mathsci-center/uploads/math/E04G.htm#c">http://apps.svsu.edu/mathsci-center/uploads/math/E04G.htm#c</a></p> <p>MAISA curriculum units and resources:  <a href="http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013">http://gomaisa-public.rubiconatlas.org/Atlas/Browse/View/UnitCalendar?SourceSiteID=&amp;CurriculumMapID=825&amp;YearID=2013</a></p> <p>Geoboards</p> <p>Graph paper</p> <p>Tiling pieces</p> <p><b>Instructional Resources:</b>  <a href="http://www.mathplayground.com">http://www.mathplayground.com</a></p> <p>Lesson is provided and after lesson students can measure the length and width of a variety of rectangles and calculate the area and perimeter of each shape</p> <p><a href="http://www.k12station.com">http://www.k12station.com</a>  Library of links for teachers, students, and parents</p> <p><a href="http://mathgoodies.com">http://mathgoodies.com</a>  Opportunities for students to learn at their own pace</p> <p><a href="http://www.pbs.org/parents/earlymath/grades_games_timetomo">http://www.pbs.org/parents/earlymath/grades_games_timetomo</a></p>
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<p>number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.</p> <p>b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.</p> <p>c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths <math>a</math> and <math>b + c</math> is the sum of <math>a \times b</math> and <math>a \times c</math>. Use area models to represent the distributive property in mathematical reasoning.</p> <p>d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.</p> <p><b>CRITICAL AREA: Developing understanding of the structure of rectangular arrays and of</b></p>					<p><a href="#">ve.html</a> Students determine which tank the fish go in by measuring their unit length.</p> <p><a href="http://www.ehow.com/list_6391389_third-grade-activities-linear-measurements.html">http://www.ehow.com/list_6391389_third-grade-activities-linear-measurements.html</a> This site has various activities that provides students with measurement experiences.</p> <p><a href="http://www.teachervision.fen.com/measurement/video/57057.html?detoured=1">http://www.teachervision.fen.com/measurement/video/57057.html?detoured=1</a> In this interview, John Van de Walle discusses student-centered approaches to teaching children what it means to measure.</p> <p><a href="http://www.acs.ac/staffdev/curricu/lp_3_mlwm_misamu.htm">http://www.acs.ac/staffdev/curricu/lp_3_mlwm_misamu.htm</a> Students work in pairs to trace each other. Next, the Pair will use a measuring tape to record the metric and Standard length of each child. The children can then compare their measurements to find shorter and taller.</p> <p><a href="http://www.apples4theteacher.com/square.html">http://www.apples4theteacher.com/square.html</a> Students manipulate shapes to form a square.</p> <p><a href="http://www.compasslearningodyssey.com/sample_act/math_k/grade/subject/mak_04_03_03.ht">http://www.compasslearningodyssey.com/sample_act/math_k/grade/subject/mak_04_03_03.ht</a></p>
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<p><b>area</b></p> <p><b>Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.</b></p> <p><b>3. MD.8</b> Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different area or with the same area and different perimeter.</p>					<p><a href="#">ml</a></p> <p>Students estimate the number of units that can fit into different sized baking pans and then check their estimate.</p> <p>My Math Curriculum Crafter</p> <p><b>Literature Connections</b> Clement, Rod. <i>Counting on Frank</i>. Harper Collins. ISBN 13: 978-0395703939. 1991.</p> <p>Jenkins, Steve. <i>Big and Little</i>. Houghton Mifflin. ISBN 0-395-72664-6. 1996.</p> <p>Jenkins, Steve. <i>Biggest, Strongest, Fastest</i>. Houghton Mifflin. ISBN 0-395-86136-5. 1996.</p> <p>Wells, Robert. <i>Is a Blue Whale the Biggest Thing There Is?</i>. Turtleback Books. ISBN 0785719970. 1993.</p> <p>Wells, Robert. <i>What's Smaller Than a Pygmy Shrew?</i>. Turtleback Books. ISBN 978-0807588383. 1993.</p>
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