

**DOMAIN: Measurement and Data****CLUSTER: Measure lengths indirectly and by iterating length units. ^**

STANDARDS FOR MATHEMATICAL CONTENT	STANDARDS FOR MATHEMATICAL PRACTICE	RESOURCES	ASSESSMENTS
<p><b>1.MD.1</b> Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p>	<p><b>MP1 Make sense of problems and persevere in solving them.</b>  MP2 Reason abstractly and quantitatively.  MP3 Construct viable arguments and critique the reasoning of others.  MP4 Model with mathematics.  <b>MP5 Use appropriate tools strategically.</b>  <b>MP6 Attend to precision.</b>  MP7 Look for and make use of structure.  MP8 Look for and express regularity in repeated reasoning.</p>	<p><b>About Teaching Mathematics, 2nd Ed.</b> (Burns, 2000)</p> <ul style="list-style-type: none"> <li>• Measurement Introduction, pp. 46-48 (teacher resources)</li> <li>• Foot Cutout, p. 53</li> <li>• Foot Figuring, p. 53</li> </ul> <p><b>Developing Number Concepts, Book 3</b> (Richardson, 1999)</p> <ul style="list-style-type: none"> <li>• Add 'Em Up: Measuring Thing in the Room, p. 126</li> <li>• Add 'Em Up: Yarn, p. 127</li> <li>• Add 'Em Up: Yarn Shapes, p. 128</li> <li>• Add 'Em Up: Containers, p. 129</li> <li>• Add 'Em Up: Cover It Up, p. 130</li> </ul> <p><b>engage<sup>ny</sup></b>  <a href="https://www.engageny.org/ccls-math/1md1">https://www.engageny.org/ccls-math/1md1</a></p> <p><b>My Math</b></p> <ul style="list-style-type: none"> <li>• 8-1 Compare Lengths</li> <li>• 8-2 Compare and Order Lengths</li> </ul>	<p><b>engage<sup>ny</sup></b></p> <ul style="list-style-type: none"> <li>• End-of-Module Assessment  <a href="http://www.engageny.org/resource/grade-4-mathematics-module-2">http://www.engageny.org/resource/grade-4-mathematics-module-2</a></li> </ul> <p><b>My Math Assessment Masters</b></p> <ul style="list-style-type: none"> <li>• Ch. 8, pp. 185-205</li> </ul> <p><b>My Math Think Smart for the SBAC</b></p> <ul style="list-style-type: none"> <li>• Ch. 8 Test, pp. 95-100</li> <li>• Ch. 8 Performance Task, pp. 127-128</li> </ul> <p><b>My Math eAssessment</b></p>

STANDARDS FOR MATHEMATICAL CONTENT	STANDARDS FOR MATHEMATICAL PRACTICE	RESOURCES	ASSESSMENTS
<p><b>1.MD.2</b> Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to context where the object being measured is spanned by a whole number of length units with no gaps or overlaps.</p>	<p><b>MP1 Make sense of problems and persevere in solving them.</b>  <b>MP2 Reason abstractly and quantitatively.</b>  <b>MP3 Construct viable arguments and critique the reasoning of others.</b>  <b>MP4 Model with mathematics.</b>  <b>MP5 Use appropriate tools strategically.</b>  <b>MP6 Attend to precision.</b>  <b>MP7 Look for and make use of structure.</b>  <b>MP8 Look for and express regularity in repeated reasoning.</b></p>	<p><b>Developing Number Concepts, Book 1</b> (Richardson, 1999)</p> <ul style="list-style-type: none"> <li>Comparing Lengths, p. 164</li> <li>Comparing Line Puzzles, p. 167</li> </ul> <p><b>engage<sup>ny</sup></b>  <a href="https://www.engageny.org/ccls-math/1md2">https://www.engageny.org/ccls-math/1md2</a></p> <p><b>Illustrative Mathematics</b></p> <ul style="list-style-type: none"> <li>How Long  <a href="https://www.illustrativemathematics.org/illustrations/797">https://www.illustrativemathematics.org/illustrations/797</a></li> <li>Measure Me  <a href="https://www.illustrativemathematics.org/illustrations/688">https://www.illustrativemathematics.org/illustrations/688</a></li> </ul> <p><b>My Math</b></p> <ul style="list-style-type: none"> <li>8-3 Nonstandard Units of Length</li> <li>8-4 Problem Solving Strategy: Guess, Check and Revise</li> </ul>	<p><b>engage<sup>ny</sup></b></p> <ul style="list-style-type: none"> <li>End-of-Module Assessment  <a href="http://www.engageny.org/resource/grade-4-mathematics-module-2">http://www.engageny.org/resource/grade-4-mathematics-module-2</a></li> </ul> <p><b>My Math Assessment Masters</b></p> <ul style="list-style-type: none"> <li>Ch. 8, pp. 185-205</li> </ul> <p><b>My Math Think Smart for the SBAC</b></p> <ul style="list-style-type: none"> <li>Ch. 8 Test, pp. 95-100</li> <li>Ch. 8 Performance Task, pp. 127-128</li> </ul> <p><b>My Math eAssessment</b></p>

CLUSTER: Tell and write time. <sup>s/a</sup>

STANDARDS FOR MATHEMATICAL CONTENT	STANDARDS FOR MATHEMATICAL PRACTICE	RESOURCES	ASSESSMENTS
<p><b>1.MD.3</b> Tell and write time in hours and half-hours using analog and digital clocks.</p>	<p><b>MP1 Make sense of problems and persevere in solving them.</b>  <b>MP2</b> Reason abstractly and quantitatively.  <b>MP3</b> Construct viable arguments and critique the reasoning of others.  <b>MP4</b> Model with mathematics.  <b>MP5 Use appropriate tools strategically.</b>  <b>MP6 Attend to precision.</b>  <b>MP7 Look for and make use of structure.</b>  <b>MP8</b> Look for and express regularity in repeated reasoning.</p>	<p><b>engage<sup>ny</sup></b>  <a href="https://www.engageny.org/ccls-math/1md3">https://www.engageny.org/ccls-math/1md3</a></p> <p><b>Illustrative Mathematics</b></p> <ul style="list-style-type: none"> <li>Making a Clock  <a href="https://www.illustrativemathematics.org/illustrations/992">https://www.illustrativemathematics.org/illustrations/992</a></li> </ul> <p><b>My Math</b></p> <ul style="list-style-type: none"> <li>8-5 Time to the Hour: Analog</li> <li>8-6 Time to the Hour: Digital</li> <li>8-7 Time to the Half Hour: Analog</li> <li>8-8 Time to the Half Hour: Digital</li> <li>8-9 Time to the Hour and Half Hour</li> </ul>	<p><b>engage<sup>ny</sup></b></p> <ul style="list-style-type: none"> <li>End-of-Module Assessment  <a href="http://www.engageny.org/resource/grade-4-mathematics-module-2">http://www.engageny.org/resource/grade-4-mathematics-module-2</a></li> </ul> <p><b>My Math Assessment Masters</b></p> <ul style="list-style-type: none"> <li>Ch. 8, pp. 185-205</li> </ul> <p><b>My Math Think Smart for the SBAC</b></p> <ul style="list-style-type: none"> <li>Ch. 8 Test, pp. 95-100</li> <li>Ch. 8 Performance Task, pp. 127-128</li> </ul> <p><b>My Math eAssessment</b></p>

**CLUSTER: Represent and interpret data.** *s/a*

STANDARDS FOR MATHEMATICAL CONTENT	STANDARDS FOR MATHEMATICAL PRACTICE	RESOURCES	ASSESSMENTS
<p><b>1.MD.4</b> Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p>	<p><b>MP1 Make sense of problems and persevere in solving them.</b>  <b>MP2 Reason abstractly and quantitatively.</b>                      MP3 Construct viable arguments and critique the reasoning of others.                      MP4 Model with mathematics.                      MP5 Use appropriate tools strategically.  <b>MP6 Attend to precision.</b>  <b>MP7 Look for and make use of structure.</b>  <b>MP8 Look for and express regularity in repeated reasoning.</b></p>	<p><b>50 Problem-Solving Lessons (Burns, 1996)</b></p> <ul style="list-style-type: none"> <li>Counting Cats, pp. 13-14</li> <li>Planting Bulbs, pp. 19-20</li> <li>The Name Graph, pp. 69-72</li> </ul> <p><b>engage<sup>ny</sup></b>  <a href="https://www.engageny.org/ccls-math/1md4">https://www.engageny.org/ccls-math/1md4</a></p> <p><b>Illustrative Mathematics</b></p> <ul style="list-style-type: none"> <li>Favorite Ice Cream Flavor  <a href="https://www.illustrativemathematics.org/illustrations/506">https://www.illustrativemathematics.org/illustrations/506</a></li> </ul> <p><b>My Math</b></p> <ul style="list-style-type: none"> <li>7-1 Tally Charts</li> <li>7-2 Problem-Solving Strategy: Make a Table</li> <li>7-3 Make a Picture Graph</li> <li>7-4 Read Picture Graphs</li> <li>7-5 Make Bar Graphs</li> <li>7-6 Read Bar Graphs</li> </ul>	<p><b>engage<sup>ny</sup></b></p> <ul style="list-style-type: none"> <li>End-of-Module Assessment  <a href="http://www.engageny.org/resource/grade-4-mathematics-module-2">http://www.engageny.org/resource/grade-4-mathematics-module-2</a></li> </ul> <p><b>My Math Assessment Masters</b></p> <ul style="list-style-type: none"> <li>Ch. 7, pp.160-180</li> </ul> <p><b>My Math Think Smart for the SBAC</b></p> <ul style="list-style-type: none"> <li>Ch. 7 Test, pp. 101-112</li> <li>Ch. 7 Performance Task, pp. 125-126</li> </ul> <p><b>My Math eAssessment</b></p>

**Domain Legend**

▲ **Major Cluster:** Areas of intensive focus, where students need fluent understanding and application of the core concepts (approximately 75%)

*s/a* **Supporting Cluster:** Rethinking & linking; some material is being covered, but in a way that applies core understandings (*s/a* approximately 25%)

**Additional Cluster:** Expose students to other subjects, may not connect explicitly to the major work of the grade

## ADDITIONAL SUPPORT

LANGUAGE OBJECTIVES	ENDURING UNDERSTANDINGS	ESSENTIAL QUESTIONS	KEY VOCABULARY
<ul style="list-style-type: none"> <li>The student will use academic language appropriately.</li> <li>When comparing objects, the student will use comparative and superlative adjectives correctly, such as shorter and shortest.</li> <li>Using concrete materials as necessary, the student will explain in complete sentences how an object was measured.</li> <li>The student will ask and answer questions with complete sentences about the data shown on a picture or bar graph.</li> <li>The student will make observations about the data shown on a picture or bar graph such as, "The most people chose blue as their favorite color."</li> <li>Student will relate time to events using prepositional phrases. Example: Math is after lunch.</li> <li>Student will critique a peer's explanation using learned phrases of "I agree because..." or "I disagree because..."</li> </ul>	<ul style="list-style-type: none"> <li>Objects can be compared and ordered by size.</li> <li>The smaller the units used the more units are needed to equal a given length.</li> <li>Measurement is a process of comparing a unit to the object being measured. The length of an object can be used a measurement for length.</li> <li>The lengths of two or more objects can be directly compared if the end points are aligned.</li> <li>When comparing the lengths of three or more objects, they can be ordered from longest to shortest.</li> <li>When it is not possible to place two objects together to directly compare their lengths, a third object, such as a length of string, may be used to make the comparison (transitivity).</li> <li>Multiple units of the same size may be placed end to end without gaps or overlaps to measure the length of objects.</li> <li>Measurement includes the number of units and the type of unit used.</li> <li>The duration of an event, from its beginning to end, is measured by time.</li> <li>Time is measured by hours and minutes, and can be written two</li> </ul>	<ul style="list-style-type: none"> <li>How can you compare and then order concrete objects according to length?</li> <li>How can you estimate and measure length with non-standard units?</li> <li>How does the length of the unit of measure affect the measurement of the object's length?</li> <li>How do you choose the right tool to measure an object?</li> <li>How do the hours on a clock show time?</li> <li>How do you tell or write time to the half hour?</li> <li>What are the different ways you can write and see time on clocks?</li> <li>What does data say about me? Children are interested in data about themselves. Begin data collection and sorting by asking children for personal information such as, "What is your favorite season of the year?" or "What sorts of pets do you have at home?"</li> <li>Every graph tells a story, what story does this graph tell?</li> </ul>	<ul style="list-style-type: none"> <li>analog clock</li> <li>bar graph</li> <li>clock</li> <li>clock face</li> <li>data</li> <li>digital clock</li> <li>fewer than</li> <li>graph</li> <li>great than</li> <li>half hour</li> <li>horizontal graph</li> <li>hour(s)</li> <li>hour hand</li> <li>least</li> <li>length</li> <li>long</li> <li>longer</li> <li>longest</li> <li>measure</li> <li>minute hand</li> <li>minute(s)</li> <li>most</li> <li>o'clock</li> <li>picture graph</li> <li>picture</li> <li>short</li> <li>shorter</li> <li>shortest</li> <li>tally chart</li> <li>tally marks</li> <li>T-chart</li> <li>survey</li> <li>time</li> <li>unit</li> <li>vertical graph</li> </ul>

LANGUAGE OBJECTIVES	ENDURING UNDERSTANDINGS	ESSENTIAL QUESTIONS	KEY VOCABULARY
	<p>ways: ___ o'clock or ___:00.</p> <ul style="list-style-type: none"> <li>• The hour hand tells the hour and the minute hand tells the number after the hour.</li> <li>• The numbers to 12 on a clock face equate to a number line to 12.</li> <li>• Fractional wholes and halves apply to telling time to the hour and to the half hour.</li> <li>• Data can be collected and sorted into categories according to shared attributes.</li> <li>• Graphs are a way to represent data after it is sorted so it can be interpreted in meaningful ways.</li> <li>• Graphs have a title, scale labels, and category labels. They may also have a legend.</li> </ul>		

### DAILY ROUTINES

- Quick-Graph: Students enter classroom and respond to a posted question/data collection in one of several ways. For example: "How did you get to school today?" and students put a post-it above the listed options (walk, car, bus). A posted equation:  $10 = 6 + 5$ , and students transfer their name card in a pocket chart under "True" or "False." For "What's your favorite color?" students can pick a cube from a tub and attach it to a train. Teacher guides discussion on results. Examples with pocket chart at: <http://www.illustrativemathematics.org/standards/k8>.
- Problem Solving Notebook

## LITERATURE CONNECTIONS

- *10 for Dinner* by Jo Ellen Bogart
- *Inch by Inch* by Leo Lionni
- *How Big is a Foot?* by Rolf Myller
- *Actual Size* by Steve Jenkins
- *Super Sand Castle Saturday* by Stuart Murphy
- *Leo the Late Bloomer* by Robert Kraus
- *It's About Time* by Stuart J. Murphy
- *Time to ...* by Bruce McMillan
- *Measuring Penny* by Loreen Leedy
- *Mouse Paint* by Ellen Stoll Walsh
- *Tally O'Malley* by Stuart J. Murphy
- *Telling Time with Big Mama Cat* by Dan Harper
- *Ten Toads and Eleven Lizards* by Cass Hollander
- *Chrysanthemum* by Kevin Henkes
- *Lemonade for Sale* by Stuart J. Murphy
- *The Long and the Short of It* by Cheryl Nathan and Lisa McCourt
- *What Time is It? A Book of Math Riddles* by Sheila Keenan

DIFFERENTIATION 

FRONT LOADING <sup>1</sup>	ENRICHMENT <sup>2</sup>	INTERVENTION <sup>3</sup>
<p><b>My Math</b>  <b>Each chapter includes:</b> (at beginning of chapter)</p> <ul style="list-style-type: none"> <li>• My Math Words</li> <li>• My Vocabulary Cards</li> <li>• My Foldables</li> </ul> <p><b>Each lesson includes:</b> (at beginning of lesson)</p> <ul style="list-style-type: none"> <li>• ELL Instructional Strategy</li> </ul>	<p><b>My Math</b>  <b>Each lesson includes:</b></p> <ul style="list-style-type: none"> <li>• A beyond level hands-on activity under differentiated instruction (found after practice and apply)</li> </ul>	<p><b>My Math</b>  <b>Each lesson includes:</b></p> <ul style="list-style-type: none"> <li>• An approaching level Tier 2: strategic intervention hands-on activity (found after Practice &amp; Apply)</li> </ul> <p><b>Each formative assessment includes</b></p> <ul style="list-style-type: none"> <li>• Tier 2 Strategic Intervention, Ch. 7, p. 534A</li> <li>• Tier 2 Strategic Intervention, Ch. 8, p. 588A</li> </ul>

Key:

<sup>1</sup>: Front Loading refers to materials that can be used before the lesson begins to prepare students for success, which may be helpful for English learners, students with disabilities or low achieving students.

<sup>2</sup>: Enrichment refers to materials that can be used with students who are ready to have their thinking extended, which may be helpful for gifted and talented and high achieving students, or any students who are ready for more depth and complexity.

<sup>3</sup>: Intervention refers to materials that can be used after the lessons with students who are needing additional positive experiences with the mathematics, low achieving students who would benefit from another approach, or students who have gaps in their knowledge.

For more information on Differentiation, please refer to: The California Framework, Universal Access section:

<http://www.cde.ca.gov/ci/ma/cf/documents/mathfwuniversalaccess.pdf#search=Universal%20Access&view=FitH&pagemode=none>