

4th Grade Math Curriculum Bundle # 8

Title		Suggested Dates
Volume, Elapsed Time, Measurement Conversions		February 1- February 19 (13 days)

Big Idea/Enduring Understanding	Guiding Questions
Measurement requires an understanding of the relationship among units.	<p>What does volume measure and how do you find it?</p> <p>What information do you need to determine elapsed time, start time, or end time?</p> <p>How do you determine relationships that enable you to convert between units of length, weight/mass, capacity, and time?</p>

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above) Teachers will use Math Investigations as the main instructional resource. District resources are listed and categorized to indicate suggested uses. Any additional resources must be aligned with the TEKS.	
<p>4.11The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length, (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass.</p> <p>4.11C Use concrete models of standard cubic units to measure volume.</p>	<p>Including but not limited to:</p> <ul style="list-style-type: none"> • estimate the approximate volume before exploration • exploration of filling rectangular prisms and approximating volume by counting the total number of cubes (centimeter or inch) blocks, etc • connect concrete models to pictorial models and determine volume visually by counting and conceptualizing layers of cubes • appropriately label volume as cubic units • begin to connect the relationship $l = \text{length}$, $w = \text{width}$, and $h = \text{height}$ (3 dimensions so cubic units) 	<p><u>Math Investigations</u></p> <p><u>Moving Between Solids and Silhouettes</u> Unit 7</p> <p>Investigations 3 Sessions 1 - 4 pages 76 - 93</p>	<p><u>Whole Group Lessons</u></p> <p><u>Envisions</u> Topic 17 Lesson 1</p> <p><u>Small Group Lessons/Centers</u></p> <p><u>Kamico</u> Volume Vault Pages 361 – 374</p> <p><u>TEXTEAMS</u> The Incredible Cube Pages 68 – 73</p>

4th Grade Math Curriculum Bundle # 8

<p>4.11The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length, (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass.</p> <p>4.11D Estimate volume in cubic units.</p> <p>Teacher Note: Volume is taught concretely only and is a new concept for 3rd & 4th grade. Tested with pictorial model of counting cubes.</p>	<p>Including but not limited to:</p> <ul style="list-style-type: none"> • estimate the approximate volume before exploration • appropriately labels volume as cubic units • connect concrete models to pictorial models and determines volume visually by counting and conceptualizing layers of cubes 		<p><u>Whole Group Lessons</u></p> <p><u>Envisions</u> Topic 17 Lessons 2 – 3</p> <p><u>Small Group Lessons/Centers</u></p> <p><u>Kamico</u> Estimation Station Pages 375 – 377</p>
<p>4.12 The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius).</p> <p>4.12B Use tools, such as a clock with gears or a stopwatch, to solve problems involving elapsed time.</p>	<p>Including but not limited to:</p> <ul style="list-style-type: none"> • explores elapsed time using clock with gears or stopwatch • creates a linear clock to determine elapsed time, starting time, and ending time • determine the elapsed time after reading two given clocks or times • explains the solution process of finding an unknown elapsed time involving hours and minutes • recognizes that time is not a base 10 system • moves from concrete (clock) to pictorial (drawing of clocks and explain of process) to abstract (calculating of elapsed time) 		<p><u>Whole Group Lessons</u></p> <p><u>Envisions</u> Topic 19 Lessons 1 – 2</p> <p><u>Small Group Lessons/Centers</u></p> <p><u>AIRR</u> Time Has Elapsed #162 Just a Matter of Time #163</p> <p><u>Kamico</u> Tug of War Time Pages 415 – 441</p> <p><u>Region IV Prep</u> Time Lessons Pages 164 – 177</p> <p><u>TEXTEAMS</u> Tic TacTime Pages 20 – 27</p> <p>Note: Elapsed Time Activities on District web page.</p>

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<p>4.11 The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length, (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass.</p> <p>4.11A Estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units, SI (metric) and customary.</p> <p>Teacher Note: Emphasize capacity (metric and customary).</p> <p>*It is recommended that measurement be taught at least once a week.</p>	<p>Including but not limited to:</p> <ul style="list-style-type: none"> • understand measure means to decide "what" is to be measured and select the appropriate unit • estimate capacity prior to any measuring • identify tools and units needed to measure capacity • demonstrates measurement using a variety of different units and tools • measure using different starting point on measuring tools • identifies what concept (capacity) is being asked in a real life situations (ex: how much goes into a container) • know abbreviations for all metric and customary units 		<p><u>Whole Group Lessons</u></p> <p><u>Envisions</u> Topic 17 Lessons 4 and 5 * capacity</p> <p><u>Small Group Lessons/Centers</u></p> <p><u>AIRR</u> What's the Capacity #149 Capacity Match #150 Guess the capacity #147 Capacity Bingo #151</p> <p><u>Kamico</u> Measure Marathon (previously played)</p>
<p>4.11 The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length, (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass.</p> <p>4.11B Perform simple conversions between different units of length, between different units of capacity, and between different units of weight within the customary measurement system.</p>	<p>Including but not limited to:</p> <ul style="list-style-type: none"> • estimate the approximate capacity before exploration • appropriately label units of capacity • connect concrete models to pictorial models and determine capacity in both customary and metric • estimate the approximate unit of weight before exploration • label units of weight/mass • connect real life objects to units of weight 		<p><u>Whole Group Lessons</u></p> <p><u>Envisions</u> Topic 18 Lessons 1 – 3</p> <p><u>Small Group Lessons/Centers</u></p> <p><u>Kamico</u> Measurement Treasure Hoard Pages 333 – 360</p> <p><u>Region 4 Measurement Connections</u> Mass and Weight Pages 99 – 110 Capacity Pages 81 – 98</p>