

**Amanda Madden – 2<sup>nd</sup> Grade**  
**Dates: January 26 – February 20**  
**Unit EQ: How can we use mathematical processes to measure?**

**Math/Measurement**  
**Time: 8:20-9:05**

	Key Standard/ Indicators Addressed:	Activating Strategy	Teaching Strategies	Summarizing Strategy
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**Homework:** [Dealing with Math Homework Card Games](#) & Optional Workbook Pages

**Enrichment:** Students needing enrichment will visit “[Habitat Builders](#)” measurement math centers throughout this unit. An optional at-home project, [My Magnificent Measurement Project](#) (based on the book *Measuring Penny*) will also be provided for students.

Students will begin math with [SuperSpeed Math](#) and [solving a word problem](#) in math journals. Then students will participate in Everyday Math Counts Calendar meeting to review and enforce math concepts.

**Give Unit Pretest**

<b>Lesson #1</b> (1 day) EQ: How is measurement used in everyday life?	2.MD.1	Read <a href="#">Jim and the Beanstalk</a>	Discuss how measurement is used. Create a measurement anchor chart with students.  Optional: Read <i>How Do We Use Measurement?</i> Reader together	Students will write down at least 3 ways they have used measurement in the past.
<b>Lesson #2</b> (1 day) EQ: What attributes help me determine how objects can be measured?	2.MD.1	Show students several objects and have them describe the objects using words.	Introduce the word “attribute” (color, shape, size, etc). Discuss the adjectives students used to describe the objects. Introduce <b>measurement attributes</b> – length, weight, and capacity – Take another look at the objects and choose their attributes of measurement. They should notice that most objects can be measured by length and weight but not all objects can be measured with capacity. Set up stations around the classroom for students to explore these concepts.	Complete “ <b>Measuring Attributes</b> ” worksheet. (70, 72)
<b>Lesson #3</b> (1 day) EQ: How can I measure length, width, and height with non-standard units?	2.MD.1	Read <a href="#">Measuring Penny</a>  Introduce the terms length, width, and height	Students will complete a Measuring Penny craft activity. Demonstrate how to measure with non-standard units (placing them end to end). Have table groups work together to measure the height of their desks using unifix cubes. Share results and reteach if needed. Students will then complete the “Exploring Non-Standard Units” activity. Come together after the activity and share results – discuss dissimilarities (lengths of pencils, crayons, etc). This should lead to the conclusion that we need a standard unit for measuring.	Assign Magnificent Measurement Project  Optional: Measuring Penny craftivity

<p><b>Lesson #4</b> (1 day) EQ: How can I measure length, width, and height with non-standard units?</p>	<p>2.MD.1 2.MD.3</p>	<p>Review how to measure with non-standard units accurately (lining up, repeating, and measuring)</p>	<p>Students will work with a partner to complete a "Non-Standards Units Scavenger Hunt." (89)</p>	<p>Share results from scavenger hunt.</p>
<p><b>Lesson #5</b> (1 day) EQ: Why are standard units of measurement important?</p>	<p>2.MD.1</p>	<p>Read <u>How Big is a Foot?</u> Ask students what this book is teaching us?</p>	<p>Introduce the ruler as a standard form of measurement. Introduce (district) red, blue, and yellow rulers. Give a set to small groups and let them examine them. Would this help solve our problem? Why or why not? Give students the opportunity to measure objects with these rulers. Review the importance of lining them up correctly and introduce rounding to the nearest unit. Share results. Are they the same? Why or why not?</p>	<p>Have students summarize the importance of standard units.</p>
<p><b>Lesson #6</b> (1 day) EQ: How can I show "non-exact" measurements?</p>	<p>2.MD.1 2.MD.9</p>	<p>Review measuring to the nearest unit. Introduce vocab – about, a little less than, a little more than, longer, shorter</p>	<p>Students will practice "non-exact measurements" with pictures of objects today. Rotate objects through groups, letting them measure and record results on "Non-Exact Measurements" page (113).</p>	<p>Compare results as a class, and call on groups to fill in the measurements on the chart.</p>
<p><b>Lesson #7</b> (1 day) EQ: How can I use a line plot to compare measurements?</p>	<p>2.MD.1 2.MD.9</p>	<p>Display a premade line plot on an anchor chart. Introduce vocab – "line plot"</p>	<p>Explain to students they will "plot" their data from yesterday using X's on this chart. Once all data is on the chart, use the chart to ask and answer questions. What does the line plot tell us? Students will create their own line plot to show this data using the "Creating a Line Plot" page (106) – go through the steps of naming it, adding labels, plotting the data, and answering questions.</p>	<p>Students will show their ability to read and use a line plot with the "Reading a Line Plot" activity (107)</p>
<p><b>Lesson #8</b> (1 day) How can I create a line plot with my own data?</p>	<p>2.MD.1 2.MD.9</p>	<p>Review line plots with "Creating a Line Plot with Data" (109)</p>	<p>Tell students we will create our own line plot with data today. Students will draw 8 objects out of a bag (with 10 objects in it). They will measure the objects and plot the data. Ask students if we were to put these objects back in and draw again if the data would be exactly the same. Why or why not?</p>	<p>Have students select 8 objects from the bag again and create line plots independently to show the data.</p>
<p><b>Lesson #9</b> (1 day) EQ: How can I use a standard ruler to measure?</p>	<p>2.MD.1</p>	<p>Introduce rulers – give students a chance to explore/examine and share what they notice.</p>	<p>Teach students how to measure accurately with a ruler. Be sure to discuss cm/in sides of the ruler. Discuss the units centimeter and inch (including body part comparisons)– display signs. Partner students up and have them measure each other's foot and hand using inches. Record the results. Share data and plot it.</p>	<p>Ask and answer questions about the line plot of measurements.</p>

<p><b>Lesson #10</b> (1 day) What are commonly used standard units of measurement?</p>	2.MD.1	Display signs for Feet and Yards – discuss these units of measure. Why would they be needed?	Share observations about the ruler again – explain that 12 inches is the same as a foot. What are things about an inch long? What are things about a foot long? Introduce a yard by showing a yardstick. Show that a yardstick is 3 feet. What is something about a yard long? Read <u>Inch by Inch</u> – pass out clay “inchworms” to students. Have them practice making inchworms equal to different lengths (ex. 5 inches, 3 inches, 8 inches, etc)	Students will cut strips of paper to match given measurements with the “ <b>Measurement</b> ” activity (129).
<p><b>Lesson #11</b> (1 day) How can I use my knowledge of inches to measure paths?</p>	2.MD.1	Show a path on the Promethean Board. Introduce the ruler on the board. Ask students if we can measure this path using the ruler? How?	Let students help measure the line segments that make up the path. Show how to add the measurements together to find the length of the complete path. Create several (8) paths in the classroom using painter’s tape. Have students work together to measure the paths.	Students will show their understanding with the “ <b>How Far Did Each Animal Travel?</b> ” (134) and “ <b>Measure Each Path</b> ” (136) activity.
<p><b>Lesson #12</b> (1 day) How can I use the metric system to measure?</p>	2.MD.1	Show the word “centimeters” – ask students where they have seen or heard this word before.	Introduce term “metric system” – explain centimeters and meters. Tell students that in America, we use the customary system (inches, feet, yards), but 95% of the rest of the world uses the metric system. Display “centimeters” and “meters” posters. Students will practice with the metric system by using “ <b>Centimeters and Meters</b> ” page (142).	Students will pair and share to discuss the units of measure we have learned about.
<p><b>Lesson #13</b> (1 day) EQ: How can I measure objects with two units?</p>	2.MD.2	Ask students to measure the Promethean Board’s length. Ask another student to measure the length with a different unit. Repeat again.	Students will use the “ <b>Measuring with Different Units</b> ” page (156) to practice this concept today. Once students are complete, discuss results. Which units did each measurement take more of? Why? Lead students to realize that the smaller the unit, the more it will take.	Play a game called “Which Unit?” – name a classroom object and give two units. Which unit would be best to use for measuring that object? Why? Repeat with as many objects as possible.
<p><b>Lesson #14</b> (1 day) How can I calculate the difference in lengths?</p>	2.MD.4	Tell students that we often have to compare measurements. Give some real life examples and let them share some.	Show students a stack of books. Ask them if that stack would fit into a cubby? How could they find out? Work together to solve this problem. Give each student two pieces of yarn (one 7 inches, one 4 inches). Can they find the difference in length? How? Share strategies. Complete the “ <b>Length Differences</b> ” activity (160) together as a guided learning experience. Now, tell students they will visit a “ <b>Measurement Zoo</b> ” (184) to find the height differences in various animals.	Students will complete a line plot using the “ <b>Height Differences in Animals</b> ” page (186) to show their results.

<b>Lesson #15</b> (1 day) EQ: How can I compare CM to IN and calculate differences in measurement?	2.MD.2 2.MD.4	Tell students they will measure their own inchworms today. Give each student a film canister of worms.	Students will estimate the length of each worm and then measure using both CM and IN. Were their estimates close? Which unit did it take more of? Why? So, what can does this show us about inches and centimeters?	Students will turn and talk to compare centimeters with inches.
<b>Lesson #16</b> (1 day) EQ: How can I choose appropriate tools and units of measure?	2.MD.1 2.MD.2 2.MD.3	Display the following tools – ruler, yardstick, measuring tape Ask students to explain situations when each would be the best tool for the job.	After reviewing each tool and all units, students will work in groups to complete the “Choosing Measuring Tools” activity (192-192). Share results at the end of activity.	Students will complete the “Choosing Units of Measurement” (196) and “Estimating Lengths” (198) pages to demonstrate understanding.
<b>Lesson #17</b> (1 day) EQ: How can I solve measurement story problems?	2.MD.5 2.MD.6	Show a number line on the board. Review using the number line to solve addition/subtraction problems. Do the same with the hundreds chart.	Pose several measurement word problems for students to answer using these tools. Discuss strategies (using number line, equation, using a ruler). Display signs showing these strategies as reminders. Students will practice solving measurement word problems with “Solving Measurement Word Problems” page (215).	Share answers and best strategies.
<b>Lesson #18</b> (1 day) <b>REVIEW</b>	Review	Play “I Have...Who Has” to review important terms/concepts learned during this unit.	Play “Guess That Measurement!” to review estimating measurements and measuring objects.	Optional: If extra time students may visit measurement centers.
<b>Give Unit Post Test</b>				
Optional Lesson: (1 day) <b>UNIT CELEBRATION</b>		<b>AIMS “Measurement Olympics”</b> Students will participate in “Olympic Events” involving measurement including 1) Cotton Ball Shot Put, 2) Giant Step, 3) Paper Plate Discuss Throw, 4) High Jump, 5) Side Step, 6) Straw Javelin, 7) Teddy Bear Handfuls, 8) Sponge Squeeze, and 9) Find the Mass Race. Students will calculate their measurements at each event and record on recording sheet. Olympic Medals for participation will be handed out. <i>* Parent Volunteers will be needed to monitor and assist at each station.</i>		

**Assessments: Lesson Benchmarks, Participation/Observation, End of Unit Assessment**