Shutterfly Photo Story Lesson Plan

Subject: Math
Grade level: 2

Lesson Title: Measuring Our World

Common Core/State Curriculum Standards:
CCSS.MATH.2.MD.A.1 - Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
CCSS.MATH.2.MD.A.2 - Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
CCSS.MATH.2.MD.A.3 - Estimate lengths using units of inches, feet, centimeters, and meters.
CCSS.MATH.2.MD.A.4 - Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
CCSS.ELA.Literacy.W.2.2 – Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section
CCSS.ELA.Literacy.W.2.5 – With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing
CCSS.ELA.Literacy.W.2.6 – With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
CCSS.ELA.Literacy.SL.2.5 – Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts and feelings.

Learning Objectives:
• Students will estimate lengths of objects using correct units of measurement.
• Students will select an appropriate tool to measure and record the actual lengths.
• Students will utilize two different length units (ex: cm, inches) to measure the same object.
• Students will compare the lengths of different items.
• Students will identify the differences in lengths in terms of standard length units.
• Students will correctly express measurements using the appropriate standard of measurement.
• Students will use facts and definitions to develop points and provide a concluding statement.
• Students will document their findings (measurements and comparison of objects) in a digital format utilizing the Shutterfly Photo Story app.

Students Learning Targets: (What will students know and be able to do as a result of this lesson?)
At the end of this lesson students will have an understanding of standard units of measure, measuring tools and estimating using standard units of measure.
Instructional Strategies: *(Project-based learning, direct instruction, inquiry-based instruction, cooperative learning, etc.)*

- Project based learning
- Direct Instruction
- Inquiry-based instruction
- Class Discussions (whole/small group)

**How Students Will Use Shutterfly Photo Story:**
Students will use the Shutterfly Photo Story app to record their selections and findings of the measurement of various objects. Students will demonstrate their knowledge and understanding of estimating, measuring and comparing measurements through the creativity used in the Shutterfly Photo Story app.

**Required Materials/Lesson Length:**

**Materials:**
- Various measuring tools: metric ruler, centimeter ruler, tape measure, meter stick
- Various objects for modeling the measuring process
- iPads/digital camera to capture drawings or images
- iPads with Shutterfly Photo Story app to create their Photo Story

**Length:**
- Warm Up: 5 minutes
- Structured Lesson: 15 minutes
- Student Exploration: 60 minutes in class/homework
- Compilation of photo story: 60 minutes in class/homework

**Resources:** *(Photos, drawings, student created stories; reference books, articles, website URLs, etc. for citation)*

None noted

**Procedures/Activities:** *(What will the teacher and students do?)* *(Prior Knowledge. Opening Activity, Step-by-Step Learning Activities, Closure, Post-Instruction Reflection)*

**Warm Up Activity:**
Have a variety of measuring tools located on tables for students to explore and discuss in small groups. Ask the students to share what they know about the tools and how they are used. Have the groups designate a member to share out with the class.

**Opening Activity:**
- Have each small group designee share what their group discussed about each tool.
- Display each tool to the class (document camera) and discuss the attributes of each tool (hash marks, units of measure, end points, etc.). Discuss how each tool is used and with what objects one might use them. For example one wouldn’t use a meter stick to measure a cell phone.
- Review what it means to estimate and then model how to estimate the lengths of a few objects.
• Model how to choose an appropriate measuring tool and use it to measure actual lengths of the objects that were estimated.
• Have partners compare the differences in lengths.
• Be sure to model the use both oral and written of the correct units of measurement

Learning Activity:
Explain to students they will now practice by selecting three-four objects in the classroom. With a partner have them estimate the length of the objects and record it on a piece of paper. Then have them discuss and select an appropriate tool for measuring and have them measure and record the actual length. Next have partners choose a different unit of measure and measure the object again and record the measurement. Have them discuss the difference in measurement. Finally have the students compare the lengths of two different objects and state the differences in terms of standard length units.

Circulate and assist as needed. Listen for correct use of vocabulary and tools.

Project Based Activity

Next explain to students they will select various items from their environment (outside the classroom). For each object they will:
• estimate the length
• choose an appropriate measuring tool
• measure the length using two standard units of measurement (inches, cm, etc.)
• compare the estimation to the actual measurement
• select objects to compare with one another and state the difference in terms of standard units of measurement
• record the measurements using correct terms

Now instruct students to creatively put together a Photo Story book using the Shutterfly Photo Story app on their iPad. Included in the book will be a picture of each item they choose to measure, the estimation, the actual measurement and the comparison of measurements. Students will include the tool of choice to measure their selected items and the unit of measurement. In writing and through the use of the recording feature in the app, students will explain why they chose the measuring tool they did and both the estimated measurement and actual measurement.

Allow class time to discuss and brainstorm their project. The measuring portion of the activity will take place outside the classroom. Provide them appropriate amount of time outside of class to execute the assignment.

During class time students will be able to put their book together, peer review, edit and revise the book. Once ready they will publish the book as a completed project.

**Differentiation:** *(Lesson suggestions for enrichment or re-teaching. Scaffolding needed as a result of misunderstandings noted during formative assessment.)*

To be determined
Special Education/ESL Accommodations & Modifications:
• For students with difficulty following multistep instructions, provide a step by step instruction checklist for them
• Have students collaborate with a peer to estimate and measure objects
• Have students discuss the comparisons with peers
• Have students work closely with an adult to complete the project

Extensions: *(Additional activities, follow-up lesson ideas, how the Photo Story book will be shared)*
• Have students extend their project by utilizing addition and subtraction to compare the differences in lengths amongst their objects.

Assessment: *(How will you determine if students have met the lesson objectives? How will your students know if they have successfully met the lesson objectives? Incorporate formative as well as summative assessments – rubrics, etc.)*

A rubric identifying progression towards mastery will be used to assess student knowledge and understanding of lesson objectives. The rubric is laid out from left (Step 1) to right (Step 4). The learning goal for each student is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the student can do now, and what they need to work on next.

### A Progression Toward Mastery

<table>
<thead>
<tr>
<th>Assessment Task Item</th>
<th>STEP 1 Little evidence of reasoning without a correct answer. (1 Point)</th>
<th>STEP 2 Evidence of some reasoning without a correct answer. (2 Points)</th>
<th>STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)</th>
<th>STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)</th>
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</thead>
</table>
| 1 2.MD.1 2.MD.4       | The student is unable to answer questions correctly. | The student measures the length of two objects correctly. | The student correctly:  
  ▪ Measures the length of the selected objects.  
  ▪ Determines correctly which one is longer than the other.  
  ▪ Makes an error in determining the difference in length. | The student correctly:  
  ▪ Measure the chosen objects.  
  ▪ Determines which items are longer than the other.  
  ▪ Determines the difference in length between the selected items. |
| A Progression Toward Mastery |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 2                           | The student is unable to answer any question correctly. | The student is not able to choose an appropriate tool for measurement but can accurately depict the two throws with a picture. | The student correctly:  
  • Identifies an appropriate tool of measurement and defends reasoning.  
  • Student accurately represents the comparison of the objects. |
| 2.MD.1                      | The student is unable to answer any question correctly. | The student is not able to choose an appropriate tool for measurement but cannot explain why. | The student correctly:  
  • Identifies an appropriate tool of measurement and defends reasoning.  
  • Student accurately represents the comparison of the objects. |
| 4                           | The student is unable to correctly measure objects. | The student inconsistently measures objects correctly. | The student:  
  • Correctly measure selected items.  
  • Provides an explanation of why one measurement is larger than the other when measuring the same item.  
  • Is unable to explain the differences when comparing two or more different items.  
  • Correctly estimates items.  
  • Is able to explain the differences between items in units of measure when comparing two or more different items.  
  • Correctly and consistently records measurements appropriately. |