Learning to Measure
4th Grade
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References:

• me

Benchmarks:

SLC/GLI #: SI1

Objectives:

The objective of this lesson is to improve students measuring capabilities with English unit rulers. They have terrible difficulty with fractions of inches or even knowing how to place the beginning of the item at zero and then reading off where the item ends, regardless of how long it is (whole or fractional inches). We will start at a basic level with rulers that I made that only have up to ¼ inch increments marked on them, and I even labeled the ¼, ½, and ¾ marks. We will then work up to 1/8 increments and I will make new rulers that have those increments marked on them as well. This lesson is made to be an ongoing project to drastically improve their measuring skills. After working with English units, I plan to extend to metric units as well.

Materials:

• homemade rulers
• Things to measure, can really be anything. I’m starting out with candy to get them more involved

Initial Demonstration:

I want to first get a handle on who (if anyone) can measure things, so I will first pass out the rulers and an object to measure along with a small piece of paper to write down their answer. When they’re finished, they’ll pass up their paper with their name on it and what they got for the length of the object. After quickly glancing through their answers, I’ll start into a discussion of how important making measurements are to science and how imperative it is to have good measuring skills as well as how important units are. Use examples such as the satellite fiasco where there was a problem converting between units and it crashed into Mars.

Next, show them how to use a ruler, because I’m guessing the majority of the students don’t know how (this statement based on their performance in making the rain gauges in a previous lesson). Use an overhead copy of the same ruler that you handed out to them. Point out the importance of starting at zero (work up to measuring starting at random places later because they’ll need to know that too). You may also need to discuss fractions because I know that my students are having a horrible time with fractions. Start by measuring something that is a multiple of a full inch in length and see if they can tell you how long it is. Next move up to items that are fractional inches in length.
**Target Observations:**

- Students should notice that when measuring something, you want to place the edge of the item at zero
- They should know that when you measure something you always have both a number and a unit
- They should be able to start measuring stuff on their own.

**Procedure:**

Do more examples as a class of measuring things maybe, or just give the students lots of things to measure with a worksheet telling the item, leaving a space for them to trace the item or at least mark the beginning and end of the item and then a line where they’ll put down their measurement.

**Target Observations:**

- They should be able to measure the items

**Target Revised Model:**

- They should have a better understanding of how to use a ruler

**Summary:**

This lesson was a simple exercise designed to improve the students’ measuring skills with English units, or even using rulers in general. They were given rulers that I made myself that will hopefully be easier for them to use at first, since they only have ¼ increments, and I actually printed the fractional as well as whole inches on it. They should gain practice by measuring lots and lots of stuff. I plan to use candy, since they get more excited about that type of stuff. Practicing with fractional inches will also help improve their understanding of fractions in general, since that’s another math topic they are having trouble with.

I plan on making this an ongoing lesson for many weeks, coming up with new items for them to measure independently each week, until all the students have a handle on it. At the end of the first week of independent work, if there are many students that are not able to successfully complete the assignment, I will pull them aside individually, or in small groups to practice some more with guidance. If after the second week, many students are still having problems, we’ll have to revisit it as a class, but I’m hoping this will not be the case. Once all students show mastery through the independent measuring exercises, we will move up to 1/8 inch increments on their rulers and repeat the process. Once they’ve mastered this, we’ll move to metric and repeat again.