

# **Measuring: Why can't we all just get along?**

## **2<sup>nd</sup> or 3<sup>rd</sup> Grade**

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### Benchmark:

SLC 3: Students will measure and compare mass, dimensions, and volume of various solids & liquids using nonstandard units (e.g., balance, metersticks, graduated cylinders).

### Purpose:

Students should come away from this lesson with an understanding of why standardized units are used. In addition, students should come away with some knowledge of some of the different units used on rulers and some intuition of the difference of size of those units.

### Materials:

- Paperclips
- Straight Twigs
- Straws cut to different lengths
- Rulers
- Meter sticks
- Chalkboard
- Tape

### Initial Observation:

Demonstrator will stand in front of the class in front of a chalkboard with a piece of tape on it. Demonstrator tells students that he/she wants to see how long the tape strip is by using the twigs. Demonstrator puts twigs end to end to see how many twigs fit.

### Target Model:

Twigs can be used to see how long something is.

### Procedure:

Break the students into groups. Place a strip of tape on every group's table. Give the students a set of twigs. Ask the students to see how many twigs there are in a tape strip. Ask the students to do this at least twice.

### Discussion/Summary:

Ask the students what their results were. Did the groups agree every time they did the experiment? Did the groups agree with each other?

Target Model: Using twigs can give different answers.

### Further Testing:

Take twigs from groups and replace with straws cut to different lengths. Ask students to see how many straws there are in the strip of tape. Ask the students to do this experiment at least twice.

Discussion/Summary:

Ask the students what their results were. Did the groups agree every time they did the experiment? Did the groups agree with each other?

Target Model: Using straws can give different answers.

Further Testing:

Take the straws from the groups and replace with paperclips. Ask the students to see how many paperclips there are in the strip of tape. Ask the students to do this experiment at least twice.

Discussion/Summary:

Ask the groups what their results were. Did the groups agree every time they did the experiment? Did the groups agree with each other? Which method was better: Twigs, Straws, or Paperclips? Why?

Target Model: Using paperclips gives better (more consistent) answers than using twigs or straws.

Demonstration:

Measure the strip of tape on the chalkboard with a ruler, measuring in both inches and centimeters. Discuss how to tell if one is measuring in centimeters or inches.

Further Testing:

Take the paperclips from the groups and replace with rulers. Ask the students to use the rulers to measure how long the strip of tape is in inches and centimeters. Have the students do the experiment at least twice.

Discussion/Summary:

Ask the students what their results were. Did the groups agree every time they did the experiment? Did the groups agree with each other? Were there more inches in the strip of tape than centimeters, or the other way around?

Target Model: Rulers give consistent answers within groups. If the answers between groups are different than it means that the tape strips are of different lengths.