

Measuring Length

Reporting Category	Measurement
Topic	Measuring length, using U.S. Customary and metric units
Primary SOL	3.9 The student will a) estimate and use U.S. Customary and metric units to measure length to the nearest $\frac{1}{2}$ inch, inch, foot, yard, centimeter, and meter.

Materials

- Inch and/or centimeter measuring tapes
- Inch-centimeter rulers
- Yardsticks
- Meter sticks
- Getting to Know You Recording Sheet (attached)

Vocabulary

foot, inch, length, measure, yard, centimeter, meter

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Note: Prior to this activity, ask each student to bring from home a measuring tool that can be used to measure length. Provide tools for students who cannot borrow them from home.

1. Discuss with students the various assembled measuring tools, asking them to describe situations where they or others have used these tools. Create a concept chart for students to use to review the tools. Explain that they will be using the tools to measure various parts of their bodies but only after first estimating the correct measurements.
2. Ask which tools would be appropriate to use to measure the distance around the head. Demonstrate with a student volunteer how to take the measure with a standard measuring tape in inches and/or centimeters. Explain how to read the tape.
3. Distribute U.S. Customary rulers, and have students find $3\frac{1}{2}$ inches on them. Ask what numbers $3\frac{1}{2}$ is close to. Have them find 3 inches and 4 inches on the ruler, and ask them to describe the $\frac{1}{2}$ inch mark found between the 3 and the 4. Direct students to use the ruler to draw lines $3\frac{1}{2}$ inches long, and have them record the measurement on their lines.
4. Distribute copies of the Getting to Know You Recording Sheet. Explain that students are to use the available tools to take the measurements indicated on the sheet. Review each item, and ask students to suggest tools to use. Demonstrate how to use a piece of yarn to take an indirect measurement if a tool is not available—i.e., cut a piece of yarn the length of your body and then measure it with a yardstick or meter stick. Remind students to estimate each measurement before measuring with the selected tool. Have students work with partners to assist in taking the measurements. Circulate, and offer assistance as needed.

Assessment

- **Questions**
 - Which measuring tool did you bring from home, and why did you choose that particular tool?
 - Why might you want to estimate the measurement of an object? In what situations might such an estimate be all you need to know?
- **Journal/Writing Prompts**
 - Compare the metric measurements with the U.S. Customary measurements that you made. How were they alike? How were they different?
 - Explain which measurement system you think is the easiest to use—U.S. Customary or metric—and explain why.
- **Other**
 - Use the completed recording sheet for assessment purposes.
 - Have students estimate and then measure specific objects around the room.

Extensions and Connections (for all students)

- Give students a list of measurements, and have them locate objects in the classroom that have those exact measurements.
- Have students measure distances on maps, and use the map scale to determine the actual distances between various pairs of places.

Strategies for Differentiation

- Group students in pairs, and have each student cut a piece of adding machine tape to match his/her partner's height. Then, have each student measure his/her own tape (the one that matches his/her height) with a ruler, yardstick, or meter stick. Next, have each student calculate how many toothpicks, cubes, or popsicle sticks must be laid end-to-end to equal the length of his/her tape.
- Have students make measurement estimates before giving them the measuring tools to measure the designated objects.
- Provide students with a generic, nondetailed drawing of a person to measure to the nearest one-half inch, and record the measurements on the recording sheet.

Getting to Know You Recording Sheet

Name: _____ Date: _____

Measurement to be Made	U.S. Customary Measurement	Metric Measurement
Distance around head	Estimate: Actual:	Estimate: Actual:
Length of longest finger: distance from tip to base	Estimate: Actual:	Estimate: Actual:
Arm span: with both arms extended, the distance from tip of longest finger on one hand to tip of longest finger on other hand	Estimate: Actual:	Estimate: Actual:
Length of foot: distance from tip of longest toe to back of heel	Estimate: Actual:	Estimate: Actual:
Width of largest fingernail	Estimate: Actual:	Estimate: Actual:
Width of smile	Estimate: Actual:	Estimate: Actual:
Length of body: distance from top of head to bottom of foot	Estimate: Actual:	Estimate: Actual: