

2.MD Determining Length

Task

Materials

- ruler, meter sticks, yard sticks, measuring tape
- paper
- crayons

Actions

Part 1

- Explain that students will be working in pairs to determine the length of each partner's foot. Ask what tools would be appropriate for determining length. Chart student thinking about appropriate tools, and today's goal of using standard measurement tools such as rulers, yard sticks, meter sticks, or measuring tape.
- Ask student pairs to consider the unit(s) that would give the most precise measure of the length of a student's foot. If students struggle with this idea, the teacher might model using his/her foot as an example considering yards, meters, feet, inches and centimeters.
- Ask student pairs to identify the unit they will work with and predict the length of each partner's foot and record their estimations. Estimates should be recorded in units.

Part 2

- Have one student from each pair stand on a blank sheet of paper and have his/her partner make a mark at the student's heel and another at the toe.
- Then, together, have the pair measure the distance between the two marks to determine the length of the first student's foot and record the length. Students may have to find the closest unit.

- c. Have students then find the difference between the estimation and actual length.
- d. Repeat with the second student, using a different color to make the marks. The second student should stand at the same endpoint as the first student so that students can visually compare the two representations and compare the number of the distance in units in part three.

Part 3

- a. Working in pairs, have students compare the distances between the lengths of each student's foot.

Class Discussion

Engaging in a class discussion will support students in thinking about the mathematical ideas embedded within the task.

- What tool did you use and why?
- How was that tool helpful?
- If you were going to measure ____ (a desk, a whiteboard, an eraser), would you use the same tool? Why?
- How long was your foot? What was your estimate? What was the difference?
- What unit did you use to measure? How did you decide to use ____? Why is the unit important?
- How long was your partner's foot? What was his/her estimate? What was the difference?
- What was the difference between the length of your foot and the length of your partner's foot? How did you find the difference?
- What did you notice about finding the difference? Is there more than one way to find the difference? (This might be an opportunity to discuss finding the difference by measuring how much longer one length is than the other or by using an operation such as addition to add up from the smallest length to the larger length or by subtracting the smaller length from the larger length.)

