

SCAFFOLDING/CONSTRUCTING TASK: MEASURING MY SHAPES

STANDARDS FOR MATHEMATICAL CONTENT

MCC3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

STANDARDS FOR MATHEMATICAL PRACTICES

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

Students in second grade will have had some experience with rulers and measuring inch and $\frac{1}{2}$ inch. Later in 3rd grade, students will also learn to use the ruler to measure $\frac{1}{4}$ inch. In this activity, student will use rulers to measure each side of the shapes. After recording their information, students will make a line plot with the data collected.

ESSENTIAL QUESTIONS

- How do I use a ruler to measure length?
- How might I begin at any number on ruler to measure length?
- Explain how a line plot is made.

MATERIALS

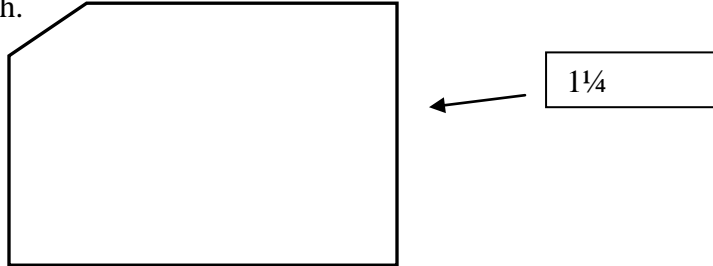
- Student Recording Sheet
- Rulers
- Plain Paper or Math Journal to make Line Plot

GROUPING

Partner or Individual

TASK DESCRIPTION, DEVELOPMENT, AND DISCUSSION

Students will use rulers to measure each side of the shapes on the Student Recording Sheet. All measurements are to the nearest inch or $\frac{1}{2}$ inch except for the pentagon shape below. The right side is $1\frac{1}{4}$ inch. This is good opportunity to preview Unit 7 with measuring to the nearest quarter inch.



There are 3 different types of rulers that can be printed from http://www.eduplace.com/math/mthexp/g3/visual/pdf/vs_g3_144.pdf. Print on stock paper and laminate to make sturdier.

After students record the measurements, you may wish to have them record the data in a chart. Students should also use the data to make a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. At this point, students should be able to mark the whole numbers and halves as a review from second grade. You may wish to allow students to help construct a line plot together and add the quarter for the pentagon measurement. For more information about line plots, see the instructional strategies at the beginning of this unit or see page 333 in the Van de Walle resource book.

FORMATIVE ASSESSMENTS QUESTIONS

- How would you measure the shapes if you had a broken ruler?
- How would you explain to your parents/friends how you obtained your data?
- Explain why you made the line plot.

DIFFERENTIATION

Extension

- You may want students to measure different shapes around the room, record the data, and make a line plot based on the shapes in your classroom.

Intervention

- Students who struggle may not be lining up the ruler correctly. They may also not know where halves are on a commercially produced ruler. You may want to print out the rulers provided above or use a paint marker/permanent marker to show halves on the ruler. Again, you can use this suggestion when you begin to teach quarters on the ruler.

Student Sheet

Directions: Using a ruler, measure each side of these shapes to the nearest inch, $\frac{1}{2}$ inch, or $\frac{1}{4}$ inch. Write your information on the lines along each side. Then, use the information to make a line plot.

