3.MD.4	**Cluster Heading:** Represent and interpret data. **Content Standard:** 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. **Practice Standards: MP1** Make sense of problems and persevere in solving them, **MP3** Construct viable arguments and critique the reasoning of others, **MP5** Use appropriate tools strategically.

Problem/Task Suggestion	Formative Assessment Suggestions
The Long and the Short Give each student a baggie and instruct him or her to fill the baggie with ten items that are less than ten inches in length. They may find items in the room or cut items to fit the criteria (strips of paper, string, etc). Items in the bag should include items of the same length when possible. Students will exchange bags with a partner and measure each item to the quarter inch. Students will create a line plot with the measurement data. When finished they will work with their partner to check both sets of measurements and line plots. Students should talk about what they noticed about their line plots and how they would correct any errors. Students will write individual summaries of the math they learned below their own line plots and include a reflection of how they could improve their work. Ask the group how to recognize a good line plot, and a good math summary. Create a list of class suggestions on the board and give them time to make changes to their papers. **Differentiation** **Supports** • Have sample line plots posted or available that students can use as a reference. • Have rulers available that have only inch markings and not centimeters. • Ask students what the shortest and longest length they have in their collection and how that will determine what increment marks they will need on their line plot. • Provide a ready-made line plot with hash marks in place but only a couple labeled. **Extension** • Create two line plots with the same items, one line plot in centimeters and one in inches.	**Observations** • Does the student understand the problem, including measurement restrictions and requirements? • Is the student using his/her ruler to accurately measure items? • Is the student communicating appropriately about the math related to the task with a partner? **Evaluating each student's written work** • Does the line plot have a title? • Are increments marked on the line plot, and increments consistent in length? • Are math summary statements correct and extensive? • Are statements of how to improve work constructive? **Misconceptions** • Measure from the edge of the rule instead of the 0 mark. • Measure some items in inches and others in centimeters. • Think there has to be a vertical scale as well as a horizontal scale on line plots. • Not understand once they have established an increment length on their line plot that they have to consistently use the same increment distance **Vocabulary** • Line plot, increment

Created by: Illinois State Board of Education Math Content Specialists