1. Estimate the length of your pencil to the nearest inch. **6 in.** (answers will vary)

2. Using a ruler, measure your pencil strip to the nearest \(\frac{1}{2}\) inch and mark the measurement with an X above the ruler below. Construct a line plot of your classmates' pencil measurements.

3. Using a ruler, measure your pencil strip to the nearest \(\frac{1}{4}\) inch and mark the measurement with an X above the ruler below. Construct a line plot of your classmates' pencil measurements.

4. Using a ruler, measure your pencil strip to the nearest \(\frac{1}{8}\) inch and mark the measurement with an X above the ruler below. Construct a line plot of your classmates' pencil measurements.

Lesson 1: Measure and compare pencil lengths to the nearest \(\frac{1}{2}\), \(\frac{1}{4}\), and \(\frac{1}{8}\) of an inch, and analyze the data through line plots.

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5. Use all three of your line plots to complete the following.
   a. Compare the three plots, and write one sentence that describes how the plots are alike and one sentence that describes how they are different.

   The three line plots are similar because they all show that the majority of the pencils were between 4 and 5 1/2 inches long. The last line plot looks different than the other two because most of the measurements only have one pencil.

   b. What is the difference between the measurements of the longest and shortest pencils on each of the three line plots?

   Line plot 1: 7 in. - 2 1/2 in. = 4 1/2 in.

   Line plot 2: 7 in. - 2 1/4 in. = 4 3/4 in.

   Line plot 3: 7 in. - 2 3/8 in. = 4 5/8 in.

   c. Write a sentence describing how you could create a more precise ruler to measure your pencil strip.

   We could make the last ruler even more precise by dividing the eighths into two parts to make sixteenths. Then we could measure our pencils to the nearest 1/16 of an inch.