



Topic A

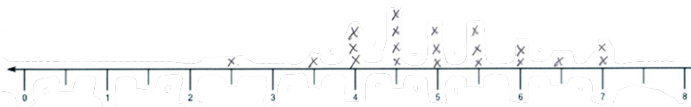
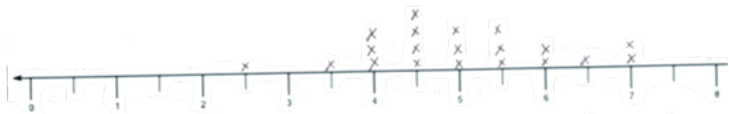
Line Plots of Fraction Measurements

5.MD.2

Focus Standard:	5.MD.2	Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i>
Instructional Days:	1	
Coherence -Links from:	G4–M5	Fraction Equivalence, Ordering, and Operations
-Links to:	G6–M2	Arithmetic Operations Including Division of Fractions

Topic A begins the 38-day module with an exploration of fractional measurement. Students construct line plots by measuring the same objects using three different rulers accurate to $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$ of an inch (**5.MD.2**). Students compare the line plots and explain how changing the accuracy of the unit of measure affects the distribution of points (see line plots at the end of this page). This is foundational to the understanding that measurement is inherently imprecise because it is limited by the accuracy of the tool at hand.

Students use their knowledge of fraction operations to explore questions that arise from the plotted data such as, “What is the total length of the five longest pencils in our class? Can the half inch line plot be reconstructed using only data from the quarter inch plot? Why or why not?” The interpretation of a fraction as division is inherent within this exploration. To measure to the quarter inch, one inch must be divided into 4 equal parts, or $1 \div 4$. This reminder of the meaning of a fraction as a point on a number line, coupled with the embedded, informal exploration of fractions as division, provides a bridge to Topic B’s more formal treatment of fractions as division.

Pencils measured to $\frac{1}{2}$ inchPencils measured to $\frac{1}{4}$ inch

A Teaching Sequence Toward Mastery of Line Plots of Fraction Measurements

Objective 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.
(Lesson 1)