

Measure and Plot

Use quarter-inch data on line plots.

GRADE 3 • NY-3.MD.4

NY-3.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."

NAME _____

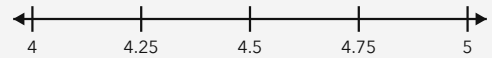
DATE _____

PLOT LENGTH DATA

A ruler marked in fourths has equal spaces of $\frac{1}{4}$ inch. On a line plot, put one X above each measurement, stacking Xs when lengths match.

WORKED EXAMPLE

Use the scale to make a line plot for $4\frac{1}{4}$, $4\frac{1}{2}$, and $4\frac{1}{4}$ inches.



1. Find $4\frac{1}{4}$ on the scale.
2. Place two Xs above $4\frac{1}{4}$.
3. Place one X above $4\frac{1}{2}$.

Answer: $4\frac{1}{4}$: XX; $4\frac{1}{2}$: X

PRACTICE 4 problems

- 1** Lengths are $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{4}$, and $\frac{1}{2}$ inch. How many Xs belong at $\frac{1}{4}$ inch?

ANSWER _____

- 2** Lengths are $1\frac{1}{4}$, $1\frac{3}{4}$, and $1\frac{1}{2}$ inches. What is the shortest length?

ANSWER _____

- 3** Lengths are $2\frac{1}{4}$, $2\frac{3}{4}$, and $2\frac{1}{4}$ inches. How many measurements are in the data set?

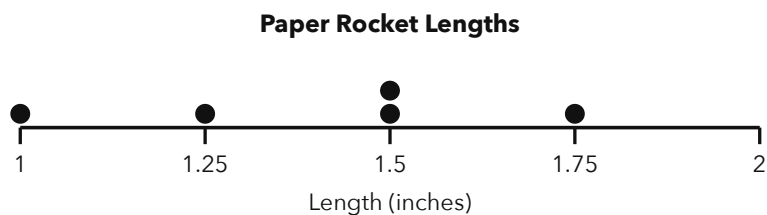
ANSWER _____

- 4** A line plot has marks every $\frac{1}{2}$ inch. Can it show a length of $\frac{3}{4}$ inch? Explain.

ANSWER _____

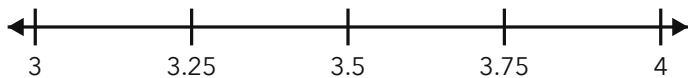
APPLY IT Show your work

- 1** The line plot shows paper rocket lengths. How many rockets are $1\frac{1}{2}$ inches long?



ANSWER _____

- 2** Ava measures bead strings for bracelets: $3\frac{1}{4}$, $3\frac{1}{2}$, $3\frac{1}{4}$, and $3\frac{3}{4}$ inches. Use the scale to make a line plot. Which length appears most?



ANSWER _____

CHALLENGE One step up

Use the scale to plot $6\frac{1}{4}$, $6\frac{3}{4}$, $6\frac{1}{2}$, and $6\frac{1}{4}$ inches. Then find the difference between the longest and shortest lengths.



WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Lengths are $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{4}$, and $\frac{1}{2}$ inch. How many Xs belong at $\frac{1}{4}$ inch?	2
2	Lengths are $1\frac{1}{4}$, $1\frac{3}{4}$, and $1\frac{1}{2}$ inches. What is the shortest length?	$1\frac{1}{4}$ inches
3	Lengths are $2\frac{1}{4}$, $2\frac{3}{4}$, and $2\frac{1}{4}$ inches. How many measurements are in the data set?	3
4	A line plot has marks every $\frac{1}{2}$ inch. Can it show a length of $\frac{3}{4}$ inch? Explain.	No. The scale needs quarter-inch marks to show $\frac{3}{4}$ inch.

PART 2 • APPLY IT

- 2 rockets** Count the dots above $1\frac{1}{2}$. There are 2 dots.
- $3\frac{1}{4}$: XX; $3\frac{1}{2}$: X; $3\frac{3}{4}$: X. Most: $3\frac{1}{4}$ inches.** Place one X for each string length. The two Xs at $3\frac{1}{4}$ show it appears most.

CHALLENGE

$6\frac{1}{4}$: XX; $6\frac{1}{2}$: X; $6\frac{3}{4}$: X. Difference: $\frac{1}{2}$ inch.

Accept correctly stacked Xs on the quarter-inch ticks. Accept equivalent decimal forms, such as 1.5 for $1\frac{1}{2}$, when the value is correct.