Unit 11 · Data, Line Plots, and Problem Solving Cheat Sheet

Unit 11 focus: reading and making line plots with fractions

1 Big Idea

A line plot shows every measurement as an X above a number line. Stacks of X's show how often each value happens.

2 Important Vocabulary

data	Information collected, often numbers.	lengths of 10 leaves
line plot	A number line with an X for each data value.	X's above $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
frequency	How many times a value appears.	three X's above $\frac{1}{2}$
scale	The equal spacing marked on the number line.	marks every $\frac{1}{8}$ inch

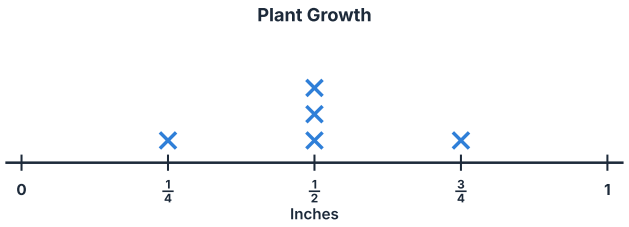
3 How It Works

Make a line plot of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{2}$.

Example: Scale: 0 to 1 by fourths.
Count: $\frac{1}{4} \to 1$, $\frac{1}{2} \to 3$, $\frac{3}{4} \to 1$
Draw: one X per value

Answer: 3 X's above $\frac{1}{2}$

4 Visual Model



The tallest stack is above $\frac{1}{2}$.

5 ★ Remember This · Watch Out!

★ Remember this

- Choose a scale that fits the smallest part (halves, fourths, eighths).
- Count your X's: one for every data value.

⚠ Watch out!

- **Uneven spacing:** every mark is the same distance apart
- **Missing repeats:** two $\frac{1}{2}$s need two X's

6 Try It!

1. Data: $\frac{1}{8}$, $\frac{3}{8}$, $\frac{3}{8}$, $\frac{5}{8}$. How many X's above $\frac{3}{8}$?
   Answer: 2
2. Greatest minus least for that data?
   Answer: $\frac{2}{1}$

Answers are printed upside down. Turn the page to check!

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More practice: solving problems with line plot data and multi-step problems

1 Big Idea

Use fraction operations with line plot data: totals, differences, and fair shares. Solve multi-step problems one step at a time.

2 Important Vocabulary

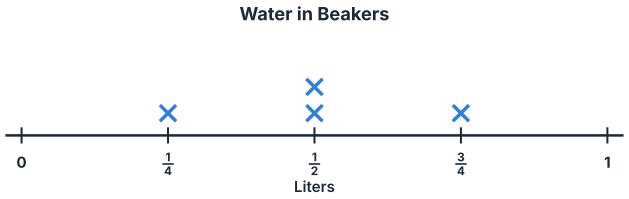
most common value	The value with the most X's (the mode).	the tallest stack of X's
range	The difference between the greatest and least values.	$1\frac{1}{4} - \frac{1}{4} = 1$
fair share	The amount each would get if a total were shared equally.	total ÷ number of items
strategy	A plan for solving a problem.	draw a picture, work backward

3 How It Works

Beakers hold $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{2}$, $\frac{3}{4}$ liter. Fair share?

Example: Share the water equally.
Total: $\frac{1}{4} + \frac{1}{2} + \frac{1}{2} + \frac{3}{4} = 2$
Share among 4: $2 \div 4$
Answer: $\frac{1}{2}$ liter each

4 Visual Model



Total 2 liters shared by 4 beakers is $\frac{1}{2}$ liter each.

5 Remember This · Watch Out!

★ Remember this

- Total = value × number of X's, added up.
- Fair share = total ÷ number of data values.

⚠ Watch out!

- **Adding values once:** count every X
- **Skipping a step:** find the total BEFORE dividing

6 Try It!

1. Total of $\frac{1}{2}$, $\frac{1}{2}$, $\frac{1}{2}$, 1 (pounds)?
   Answer: spunod $\frac{\zeta}{\iota}\zeta$
2. Fair share of $\frac{3}{4}$ and $\frac{1}{4}$?
   Answer: $\frac{\zeta}{\iota}$

Answers are printed upside down. Turn the page to check!