

Data Detectives

Organize measurements with tables, line plots, and line graphs.

GRADE 5 • MA.5.DP.1.1

MA.5.DP.1.1 "Collect and represent numerical data, including fractional and decimal values, using tables, line graphs or line plots."

NAME _____

DATE _____

SHOW DATA CLEARLY

A frequency table tells how many times each value appears. A line plot uses X marks above each value, and a line graph shows how data changes in order, such as over several days.

WORKED EXAMPLE

Four toy cars traveled $\frac{1}{8}$, $\frac{3}{8}$, $\frac{1}{8}$, and $\frac{1}{4}$ mile. Make a line plot.

1. Put the values in order: $\frac{1}{8}$, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$.
2. Count each value: $\frac{1}{8}$ appears 2 times, $\frac{1}{4}$ appears 1 time, and $\frac{3}{8}$ appears 1 time.
3. Write each value on the line plot.
4. Place one X above a value for each time it appears.

Answer: Line plot: $\frac{1}{8}$: XX; $\frac{1}{4}$: X; $\frac{3}{8}$: X

PRACTICE 6 problems

- 1** PRACTICE 1. A dance team recorded practice times in hours: 0.5, 0.7, 0.5, 0.9, 0.7, 0.5. Complete a frequency table for 0.5, 0.7, and 0.9.

ANSWER _____

- 2** PRACTICE 2. A student counted the pounds of paper collected on six recycling days: $\frac{2}{5}$, $\frac{4}{5}$, $\frac{3}{5}$, $\frac{2}{5}$, $\frac{4}{5}$, $\frac{2}{5}$. Make a line plot.

ANSWER _____

- 3** PRACTICE 3. This line plot shows the lengths, in meters, of bean plants. Complete a frequency table. 3.2: XX 3.4: X 3.6: XXX

ANSWER _____

- 4** PRACTICE 4. A reading group recorded pages read during silent reading: 14, 17, 14, 19, 17, 14, 19. Complete a tally table for 14, 17, and 19.

ANSWER _____

- 5** PRACTICE 5. A pet shelter recorded the weights, in kilograms, of six kittens: 1.1, 1.5, 1.3, 1.1, 1.5, 1.1. Make a line plot.

ANSWER _____

- 6** PRACTICE 6. A plant grew 2, 5, 4, and 6 millimeters on days 1, 2, 3, and 4. For a line graph, write the points as (day, growth).

ANSWER _____

APPLY IT Show your work

- 1** APPLY 1. At a game-design club, six students recorded the hours they spent testing a game: $\frac{1}{3}$, $\frac{2}{3}$, 1, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{3}$. Create a frequency table and a line plot.

WORK SPACE

ANSWER _____

- 2** APPLY 2. During five days of basketball practice, Jalen made 8, 11, 9, 12, and 10 free throws in a row. Make a table with day number and free throws. Then make a line graph with day number on the horizontal axis and free throws on the vertical axis.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

CHALLENGE. A line plot represents 9 measurements. Its frequency table shows 1.6: 2, 1.8: 3, 2.0: ____, and 2.2: 1. Find the missing frequency. Then write the complete line plot and explain how you know.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	PRACTICE 1. A dance team recorded practice times in hours: 0.5, 0.7, 0.5, 0.9, 0.7, 0.5. Complete a frequency table for 0.5, 0.7, and 0.9.	0.5: 3; 0.7: 2; 0.9: 1
2	PRACTICE 2. A student counted the pounds of paper collected on six recycling days: 2/5, 4/5, 3/5, 2/5, 4/5, 2/5. Make a line plot.	Line plot: 2/5: XXX; 3/5: X; 4/5: XX
3	PRACTICE 3. This line plot shows the lengths, in meters, of bean plants. Complete a frequency table. 3.2: XX 3.4: X 3.6: XXX	3.2: 2; 3.4: 1; 3.6: 3
4	PRACTICE 4. A reading group recorded pages read during silent reading: 14, 17, 14, 19, 17, 14, 19. Complete a tally table for 14, 17, and 19.	14: , 3; 17: , 2; 19: , 2
5	PRACTICE 5. A pet shelter recorded the weights, in kilograms, of six kittens: 1.1, 1.5, 1.3, 1.1, 1.5, 1.1. Make a line plot.	Line plot: 1.1: XXX; 1.3: X; 1.5: XX
6	PRACTICE 6. A plant grew 2, 5, 4, and 6 millimeters on days 1, 2, 3, and 4. For a line graph, write the points as (day, growth).	(1, 2), (2, 5), (3, 4), (4, 6)

PART 2 • APPLY IT

- Frequency table: 1/3: 3; 2/3: 2; 1: 1. Line plot: 1/3: XXX; 2/3: XX; 1: X** Count each time value in the list. Use the counts for the table, then place the same number of X marks above each value on the line plot.
- Table: Day 1: 8; Day 2: 11; Day 3: 9; Day 4: 12; Day 5: 10. Plot and connect: (1, 8), (2, 11), (3, 9), (4, 12), (5, 10).** Match each free-throw total to its day number. Plot the five points in day order and connect neighboring points.

CHALLENGE

The missing frequency is 3. Line plot: 1.6: XX; 1.8: XXX; 2.0: XXX; 2.2: X. The known frequencies total 6, so 3 more measurements are needed to make 9.

Accept line plots with X marks arranged vertically or horizontally if each value has the correct number of marks. For line graphs, accept correctly labeled axes and the correct points connected in day order.