LESSON MAKER PRO

Stack the Measurements

Make line plots with fractions of an inch.

GRADE 4 · 4.DA.A.20.a

4.DA.A.20.a "Create a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8)."

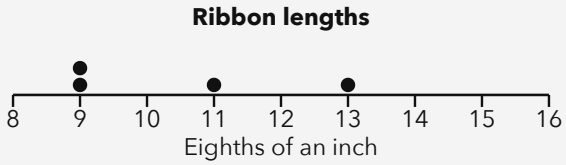
NAME _____ DATE _____

PLOT EACH MEASUREMENT

On these number lines, each tick number counts eighths of an inch. A measurement of 2/8 inch goes above 2, and 2/8 inch is the same as 1/4 inch. Put one dot above a tick for each measurement, stacking dots when measurements match.

WORKED EXAMPLE

Study the line plot of ribbon lengths. How does it show the measurements 9/8, 9/8, 11/8, and 13/8 inches?

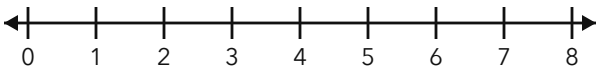


1. Each tick number counts eighths of an inch, so 9/8 inch goes above 9.
2. The two 9/8-inch measurements make a stack of two dots.
3. The 11/8-inch and 13/8-inch measurements each make one dot.

Answer: The plot has two dots above 9, one above 11, and one above 13.

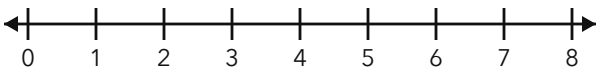
PRACTICE 6 problems

1 Use the space above the number line to make a line plot for these lengths: 0, 1/4, 1/4, 1/2, 3/4 inch. How many lengths are 1/4 inch?



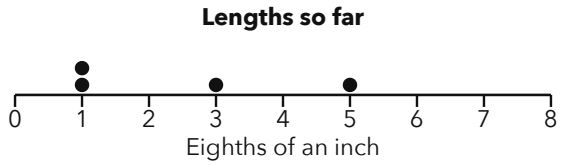
ANSWER _____

2 Use the space above the number line to make a line plot for these lengths: 1/8, 3/8, 3/8, 5/8, 7/8 inch. Which length appears twice?



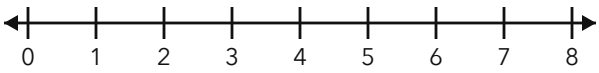
ANSWER _____

3 The line plot is not finished. Add dots for 3/8, 5/8, and 5/8 inch. How many dots are above 5 when the plot is finished?



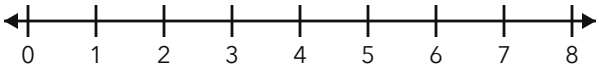
ANSWER _____

4 Use the space above the number line to make a line plot for these lengths: 1/2, 3/4, 3/4, 7/8, 7/8, 7/8 inch. Which length has the tallest stack?



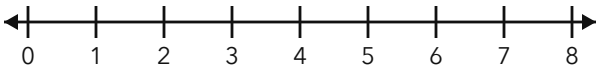
ANSWER _____

5 Use the space above the number line to make a line plot for these lengths: 0, 1/8, 1/8, 1/4, 3/8, 3/8 inch. Which two lengths each appear twice?



ANSWER _____

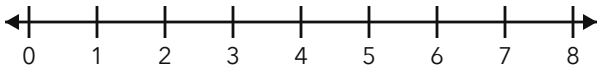
6 Use the space above the number line to make a line plot for these lengths: 1/4, 3/8, 1/2, 1/2, 5/8, 3/4, 3/4, 3/4 inch. How many lengths are less than 1/2 inch?



ANSWER _____

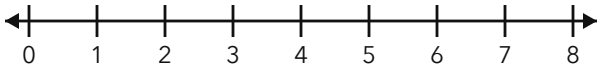
APPLY IT Show your work

1 Maya cuts strips of paper to decorate a birthday card. Their lengths are 1/8, 1/4, 1/4, 3/8, 1/2, 1/2, and 1/2 inch. Use the space above the number line to make a line plot. Which length did she cut most often?



ANSWER _____

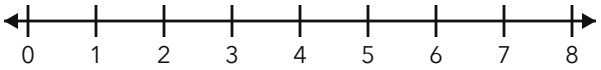
2 A toy car rolls across a tabletop six times. It rolls 3/8, 3/8, 5/8, 5/8, 5/8, and 7/8 inch. Use the space above the number line to make a line plot. How many rolls were at least 5/8 inch?



ANSWER _____

CHALLENGE One step up

Eight pieces of string measure 1/4, 2/8, 1/2, 4/8, 3/4, 6/8, 7/8, and 1 inch. Use the space above the number line to make a line plot. In one sentence, explain why 1/4 and 2/8 belong in the same stack.



WORK SPACE AND ANSWER

ANSWER KEY

Stack the Measurements

GRADE 4 · 4.DA.A.20.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use the space above the number line to make a line plot for these lengths: 0, 1/4, 1/4, 1/2, 3/4 inch. How many lengths are 1/4 inch?	**Plot: 0 has 1 dot, 2 has 2 dots, 4 has 1 dot, and 6 has 1 dot. There are 2 lengths of 1/4 inch.**
2	Use the space above the number line to make a line plot for these lengths: 1/8, 3/8, 3/8, 5/8, 7/8 inch. Which length appears twice?	**Plot: 1 has 1 dot, 3 has 2 dots, 5 has 1 dot, and 7 has 1 dot. The length 3/8 inch appears twice.**
3	The line plot is not finished. Add dots for 3/8, 5/8, and 5/8 inch. How many dots are above 5 when the plot is finished?	**Add 1 dot above 3 and 2 dots above 5. The finished plot has 3 dots above 5.**
4	Use the space above the number line to make a line plot for these lengths: 1/2, 3/4, 3/4, 7/8, 7/8, 7/8 inch. Which length has the tallest stack?	**Plot: 4 has 1 dot, 6 has 2 dots, and 7 has 3 dots. The tallest stack is at 7/8 inch.**
5	Use the space above the number line to make a line plot for these lengths: 0, 1/8, 1/8, 1/4, 3/8, 3/8 inch. Which two lengths each appear twice?	**Plot: 0 has 1 dot, 1 has 2 dots, 2 has 1 dot, and 3 has 2 dots. The lengths are 1/8 inch and 3/8 inch.**
6	Use the space above the number line to make a line plot for these lengths: 1/4, 3/8, 1/2, 1/2, 5/8, 3/4, 3/4, 3/4 inch. How many lengths are less than 1/2 inch?	**Plot: 2 has 1 dot, 3 has 1 dot, 4 has 2 dots, 5 has 1 dot, and 6 has 3 dots. There are 2 lengths less than 1/2 inch.**

PART 2 · APPLY IT

1. **Plot: 1 has 1 dot, 2 has 2 dots, 3 has 1 dot, and 4 has 3 dots. She cut 1/2-inch strips most often.** Convert fourths and halves to eighths before placing the dots. The stack above 4 is tallest.
2. **Plot: 3 has 2 dots, 5 has 3 dots, and 7 has 1 dot. Four rolls were at least 5/8 inch.** Stack the dots at 3, 5, and 7. Count the three dots at 5 and the one dot at 7.

CHALLENGE

Plot: 2 has 2 dots, 4 has 2 dots, 6 has 2 dots, 7 has 1 dot, and 8 has 1 dot. The measurements 1/4 and 2/8 belong in the same stack because they are equal lengths.

On every axis, tick numbers count eighths of an inch. Accept Xs instead of dots and equivalent fraction labels, as long as each stack has the correct count.