Name _____

Represent and Interpret Line Plots

I Can represent data in a line plot.

Florida's B.E.S.T.

- **Data Analysis & Probability** 5.DP.1.1, 5.DP.1.2
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.3.1, MTR.5.1

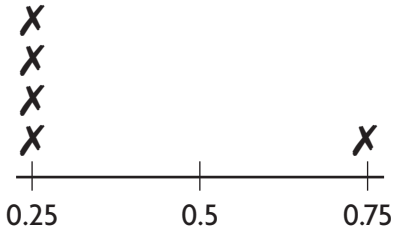
UNLOCK the Problem

Real World

Students have measured different amounts of soil into buckets to prepare for planting herbs. The amount of soil in each bucket is listed below.

0.25 kg, 0.25 kg, 0.5 kg, 0.75 kg, 0.25 kg, 0.25 kg
0.25 kg, 0.5 kg, 0.75 kg, 0.75 kg, 0.25 kg, 0.25 kg

What is the mean amount of soil in the buckets? The **mean**, or average, represents the amount of soil in each bucket if the soil is shared equally.



Amount of Soil in a Bucket (kg)

STEP 1 Count the frequency of each amount. Draw an ✗ for the number of times each amount is recorded to complete the line plot.

0.25 : _____ 0.5 : _____ 0.75 : _____

STEP 2 Find the total amount of soil in all the buckets that contain 0.25 kilogram of soil.

There are _____ buckets with 0.25 kilogram of soil. Multiply.

$7 \times 0.25 = 1.75$

STEP 3 Find the total amount of soil in all the buckets that contain 0.5 kilogram of soil.

There are _____ buckets with 0.5 kilogram of soil. Multiply.

$2 \times 0.5 = 1$

STEP 4 Find the total amount of soil in all of the buckets that have 0.75 kilogram of soil.

$3 \times 0.75 = 2.25$

STEP 5 Add to find the total amount of soil in all the buckets.

$1.75 + 1 + 2.25 =$ _____

STEP 6 Divide the sum you found in Step 5 by the number of buckets to find the mean. Round your answer to nearest hundredth.

$5 \div 12 = 0.42$

So, the mean for the amount of soil in a bucket is _____ kilogram.

Try This!

You can use the order of operations to find the sum. Then you can find the mean.

$\left(3 \times \frac{1}{4}\right) + \left(4 \times \frac{1}{2}\right) + \left(3 \times \frac{3}{4}\right)$ Perform the operations inside the parentheses.

$\frac{\square}{\square} + \square + \frac{\square}{\square}$ Next, perform the addition.

$\square \div 10$ Divide the sum by the number of values.

$\frac{\square}{\square}$ Write the expression as a fraction.

Example

Shiloh divides three 2-pound bags of birdseed into smaller bags that have how much she puts in her feeders. The first bag is divided into bags weighing $\frac{1}{4}$ pound each, and the second bag is divided into bags weighing $\frac{1}{3}$ pound each. The third bag is divided into bags weighing $\frac{1}{2}$ pound each.

Find the number of $\frac{1}{4}$-, $\frac{1}{3}$-, and $\frac{1}{2}$-pound bags. Then graph the results on the line plot. The **range** is the difference between the greatest and the least values. Find the range of the data.

STEP 1 Write a title for your line plot.

STEP 2 Label $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{2}$ on the line plot to show the different amounts into which the three 2-pound bags of birdseed are divided.

STEP 3 Use division.

$2 \div \frac{1}{4}$ $2 \times \square = \square$

$2 \div \frac{1}{3}$ $2 \times \square = \square$

$2 \div \frac{1}{2}$ $2 \times \square = \square$

STEP 4 Draw an ✗ above $\frac{1}{4}$, $\frac{1}{3}$, or $\frac{1}{2}$ to show the number of birdseed bags.

STEP 5 To find the range, subtract the least weight from the greatest weight.

$\frac{1}{2} - \frac{1}{4} = \frac{2}{4} - \frac{1}{4} = \frac{1}{4}$

The range is $\frac{1}{4}$ pound.

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Explain why there are more $\frac{1}{4}$-pound bags than $\frac{1}{2}$-pound bags.