Oak Park Elementary School District 97

MATH NEWS

Grade 5 | Module 4 | Topic A | Line Plots / Fractional Measurement

Welcome

This document is created to give parents and students a better understanding of the math concepts found in the Eureka Math (© 2013 Common Core, Inc.) that is also posted in the Engage New York material taught in the classroom. Grade 5 Module 4 of Eureka Math (Engage New York) covers Multiplication and Division of Fractions and Decimal Fractions. This newsletter will address line plots of fractional measurements.

Objective

Measure and compare pencil lengths to the nearest 1/2, 1/4, and 1/8 of an inch, and analyze the data through line plots.

Words to Know

- Line Plot
- Frequency

Things to Remember

Line Plot: Shows data on a number line with an 'x' or other mark to show **frequency**.

In this lesson it is important that students be able to read a customary ruler with increments of halves, fourths, and eighths.

Important Information

Example of a Line Plot

The line plot below shows the growth of 10 sunflower plants. The count of cross marks about each fraction represents the height of each plant after one month of planing.
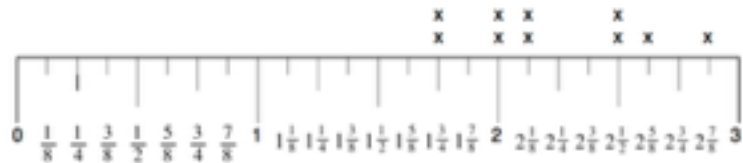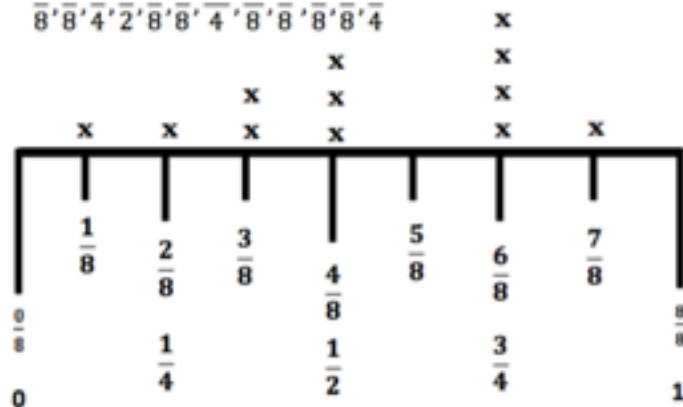

Reading a Customary Ruler

In this lesson it is important that students be able to read a customary ruler with increments of halves, fourths, and eighths.
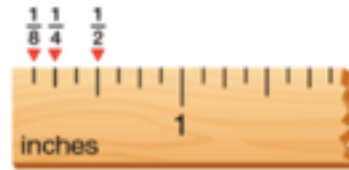
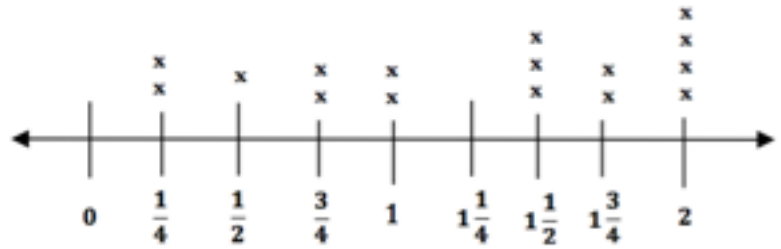### Focus Area Example Problems: Line Plots of Fraction Measurements.

1. Create a **line plot** for the following data measured in $\frac{1}{8}$ inches.

2. $\frac{7}{8}, \frac{4}{8}, \frac{1}{4}, \frac{1}{2}, \frac{3}{8}, \frac{3}{8}, \frac{3}{4}, \frac{4}{8}, \frac{1}{8}, \frac{6}{8}, \frac{6}{8}, \frac{3}{4}$

Problem:

Gilbert recorded the lengths of his classmate's erasers. Use the following data to record his results on a line plot using 1/4 inches.

Students	Length
Student 1	½ inch
Student 2	1 inch
Student 3	2 inches
Student 4	¼ inch
Student 5	1 ½ inches
Student 6	1 ½ inches
Student 7	2 inches
Student 8	2 inches
Student 9	¼ inches
Student 10	¾ inches
Student 11	¾ inches
Student 12	2 inches
Student 13	1¾ inches
Student 14	1 ¾ inches
Student 15	1 ½ inches
Student 16	1 inch

1. How many erasers have a length of at least 1 1/2 inch? **9 erasers**.
2. How many erasers measure less than a half inch?   **2 erasers**.
3. What is the total length of all the erasers?   **20 1/2 inches*** .
4. What is the difference between the shortest and longest erase lengths?   **1 3/4 inches**.
5. Which measurement appears most frequently?   **2 inches**.
6. How many 1/4 inch erasers would it take to equal the length of a 2 inch eraser?   **8 one-fourth inch erasers***.

*Explanation below.

Explanation:

3. What is the total length of all the erasers?

$$\left(2\,x\frac{1}{4}\right) + \left(1\,x\frac{1}{2}\right) + \left(2\,x\frac{3}{4}\right) + (2\,x\,1) + \left(3\,x\,1\frac{1}{2}\right) + \left(2\,x\,1\frac{3}{4}\right) + (4\,x\,2) =$$

$$\left(\frac{1}{4}+\frac{1}{4}\right) + \left(\frac{1}{2}\right) + \left(\frac{3}{4}+\frac{3}{4}\right) + (2\,x\,1) + \left(1\frac{1}{2}+1\frac{1}{2}+1\frac{1}{2}\right) + \left(1\frac{3}{4}+1\frac{3}{4}\right) + (4\,x\,2) =$$

$$\frac{2}{4}=\frac{1}{2} \qquad \frac{1}{2} \qquad \frac{6}{4}=1\frac{1}{2} \qquad 2 \qquad 4\frac{1}{2} \qquad 2\frac{6}{4}=3\frac{1}{2} \qquad 8$$

Step 1: Add the whole numbers first. $1 + 2 + 4 + 3 + 8 = 18$

$\rightarrow \quad \frac{1}{2} + \frac{1}{2} + 1 + \frac{1}{2} + 2 + 4 + \frac{1}{2} + 3 + \frac{1}{2} + 8$

Step 2: Add the ½
$(½ + ½) + (½ + ½) + ½ =$
$1 + 1 + ½ = 2½$

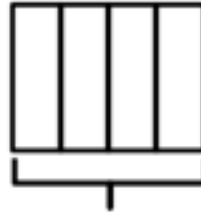$\rightarrow \quad = 18 + \frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}$

$$= 18 + 2\frac{1}{2} = 20 + \frac{1}{2} = 20\frac{1}{2} \text{ inches is the total length of all the erasers}$$

Explanation:

6. How many 1/4 inch erasers would it take to equal the length of a 2-inch eraser? To solve this problem you can use different strategies. One strategy is to take two whole rectangles and divide the rectangles into fourths.
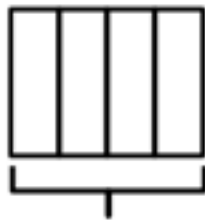
$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{4}{4} = 1 \text{ whole inch} \qquad \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{4}{4} = 1 \text{ whole inch}$$

$$\frac{4}{4} + \frac{4}{4} = \frac{8}{4} = 2 \text{ inches}$$

It would take 8 one-fourth inch erasers to equal the length of a 2-inch eraser.

District Mathematics Website

Be sure to visit our District 97 5th Grade Math Resources Website. It has a ton of resources that can further assist your 5th Grade Family! Some of the specific elements are detailed below.

Website: http://op97mathgrade5.weebly.com/module-4.html

Homework Helper

Would you like written homework help specific for each lesson in this Topic? Click below to access it!

Website: http://op97mathgrade5.weebly.com/uploads/2/2/9/1/22918938/homework_helper-grade_5_module_4.pdf

Video Help

Flipped learning is a great way to review topics that your student is learning in the classroom. The following are links to videos that give detailed explanations for each lesson in this topic.

Website: https://www.tes.com/lessons/ahONa5NczU7C7Q/video-help-module-4

Module 4 Parent Tips

Eureka Math has created a guide to this Module specifically for parents. Click below to access it!

Website: http://op97mathgrade5.weebly.com/uploads/2/2/9/1/22918938/eureka_math_module_4_parent_tip_sheet.pdf