Measures of Center (Guided Notes)

Finding Measures of Center

EQ: How do we, as statisticians, find the measures of center in a group of data?

Quickwrite: List some things about our class (each other) that we could count & make a set of data about (example: number of siblings, number of letters in our names)

3-column notes to add to Interactive Notebook or math notes:

The measures of center can be used to summarize the number of pets that students own. Cameron asked eight of his classmates how many pets they own. The results are listed below: **1, 0, 2, 0, 2, 7, 0, 2**		
Measures of Center	Three numbers which are commonly used to represent a set of numbers. (Mean, Median and Mode)	
Mean	The sum of all the values in a data set divided by the number of values; also known as an average	Add up the numbers in the set. 1 + 0 + 2 + 0 + 3 + 7 + 0 + 2 15 Then divide the sum by the number of students Cameron asked (8). 15 / 8 = 1.875 The average # of pets the kids own is 1.875. How would you round this number so it makes sense for the question?

Median	When all the numbers have been put in order from least to greatest, the median is the middle number of the ordered data set.	0, 0, 0, 1, **_2_**, 2, 3, 7 The median number of pets is 2.
Mode	The number(s) or item(s) in a data set which occurs the most often. *There may be one mode, multiple modes, or no mode.*	**_0, 0, 0_**, 1, 2, 2, 3, 7 The mode (or most frequent) number of pets is 0.
Range	A useful statistic to describe the spread of a set of data is called the **range.** The range is the difference between the maximum (largest value) and minimum (smallest value) values in a data set.	Range = maxim value - minimum value 7-0= 7

Practice (do together in notes):

Find the MEAN of each data set

Steps	Practice #1 **12, 17, 19, 20, 22**	Practice #2 **22, 24, 25, 26, 30, 35**
1.Find the sum of all the values. 2. Divide the sum by the total number of values.		
Why would the MEAN be a helpful value for analyzing data?		

Find the MEDIAN of each data set

Steps	Practice #1: 20, 14, 22, 19, 30	Practice #2 28, 45, 25, 32, 20, 39
1. Rewrite the numbers in order from least to greatest. 2. What is the median (the middle value)? Circle it. *3. If there is an even number of data, what are the two numbers in the middle? *4. Find the average (mean) of the two numbers.		
Why would the MEDIAN be a helpful value for analyzing data?		

Find the MODE(s) of each data set

Steps	Practice #1 17, 19, 19, 23, 25, 39, 39	Practice #2 21, 35, 10, 62, 18, 25
1. List the values: which value occurs most frequently? Circle it.		
Why would the MODE be a helpful value for analyzing data?		

Find the RANGE of each data set

Steps	Practice #1 44, 50, 55, 56, 62, 68, 70	Practice #2 12, 5, 6, 6, 12, 15, 21
1.Find the maximum value. 2.Find the minimum value. 3.Find the difference.		

Which set of data has a greater range? Why would the RANGE be a helpful value for analyzing data?	

You try (students try & then check)

	Practice #1 21, 36, 27, 16, 20	Practice #2 7, 13, 14, 8, 2, 13, 15, 16
Rewrite the numbers in order from least to greatest. Find the mean, median and mode. Find the range.	Mean: Median: Mode: Range:	Mean: Median: Mode: Range:

Reflection prompt:

What are the measures of center statisticians use to analyze a group of data? Which measure of center do you think is most valuable for understanding data and why?

Processing (student practice):

Find the mean of each data set.

1. 11, 16, 17, 20, 26

2. 3, 22, 0, 15, 9, 23

3. 10, 2, 9, 8, 3, 13, 11

Find the median of the following sets of data.

4. 25, 28, 32, 33, 40, 40, 42

5. 55, 65, 72, 78, 88, 95

6. 90, 48, 82, 70, 78

Find the mode(s) of each data set. If there is no mode, state "no mode".

7. 17, 19, 19, 23, 25, 39, 39

8. 62, 35, 42, 62, 18, 25

9. 20, 32, 20, 45, 45, 32

Find the three measures of center. If necessary, round your answers to the nearest hundredth.

10. 25, 36, 38, 46, 52, 53, 58

11. 7, 16, 12, 10, 10, 1, 20, 12

Find the range of the following sets of data.

12. 28, 31, 31, 38, 42, 45, 50

13. 15, 9, 11, 22, 10, 16, 19