# Text Oregon Coast Marine Science Educator Alliance logo 2020-21

# 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):**

