

## ::Week 5 Math Resources::

### Lesson 11.2 *Median and Mode (Monday April 27<sup>th</sup>)*

#### Helpful Youtube Links

<https://www.youtube.com/watch?v=B1HEzNTGeZ4> \*\*\*start video at 4:20\*\*\*

#### Vocabulary

Median: the number in the middle; a number value that separate the higher half and the lower half of a data sample, or list of numbers.

- Example 1 this data set has an odd amount of numbers { 2, 4, 6, 8, 10 } 6 would be the median as it is directly in the middle, separating each half.
- Example 2 this data set has an even amount of numbers { 2, 4, 6, 8, 10, 12 } 7 would be the median as it may not be a number in the chain of numbers, 7 is the value that is directly in the middle, separating each half.

Mode: the reoccurring numbers in a data sample, or list of numbers

#### Steps to Solve for Median

1. Place numbers in the data sample in order from least to greatest. Remember that if there are reoccurring numbers, don't forget to list them multiple times.

{ 5, 7, 10, 7, 1 }  $\longrightarrow$  { 1, 5, 7, 7, 10 }

IF YOU HAVE AN ODD NUMBER IN YOUR SET

2. Mark off numbers one at a time starting on one end of the data set and moving to the opposite side of the data set. Jump back and forth until the number in the middle of the data set is the last number marked off. The middle number is your median.

{ 1, 5, 7, 7, 10 }      median = 7

IF YOU HAVE AN EVEN NUMBER IN YOUR SET

2. Mark off numbers one at a time starting on one end of the data set and moving to the opposite side of the data set. Jump back and forth until the last two numbers in the middle of the data set are left.
3. Find the value that lies directly in-between these two numbers. \*\*Think parts of a whole such as decimals, money, or fractions

{ 1, 5, 6, 7, 7, 10 }      median = 6.5

#### Steps to Solve for Mode

1. Identify the number that is reoccurring more than once in a data set. Not every data set will have a mode, only if there is at least one number that has repeated.

{ 1, 5, 6, 7, 7, 10 }      mode = 7

{ 1, 5, 6, 7, 9, 10 }      mode = no mode

## Lesson 11.3 Extra Practice: *Measures of Variation* (Tuesday April 28<sup>th</sup>)

### Helpful Youtube Links

[Modes of Variation Song](#) or

[Find the IQR and Quartiles with EVEN number of data points](#) OR

<https://www.youtube.com/watch?v=RMOMAn2ShR0>

[Find the IQR and Quartiles with ODD number data points](#) OR

<https://www.youtube.com/watch?v=DGAXeX42eoE>

### Vocabulary

**Measures of variation** – describes the distribution, or spread, of the data. They describe how the values of data set vary with a single number.

**Quartiles** – Values that divide the data set into four equal parts

**First and Third Quartiles**—The first quartile, Q1, is the half way value of the lower half of the data. Quartile 3, Q3, is the half way value of the upper half of the data. (The video links up above will help you tremendously! 😊 )

**Range**—the difference between the *greatest* and *least* data value.

EX: Find the range between 54, 50 and 80.  $80-50= 30$ . Answer: The range is 30.

**Interquartile Range (IQR)**—The distance or range between the first and third quartiles of the data set.

**Outlier**—a data value that is either much *greater* or much *less* than the other values in a set of numbers. \*If the data value is more than 1.5 times the value of the IQR (interquartile range), it is an outlier

### **Steps to find the measure of variation for the data:**

This means you need to find ALL the following: range, quartiles, IQR, and the medians of Quartile 1 and Quartile 3. Example 1 on page 830 is helpful when following these steps.

#### **Step 1: Find the range**

Subtract your biggest and smallest value

#### **Step 2: Find your Quartiles**

Order your values from least to greatest.



## Lesson 11.4 Extra Practice: *Mean Absolute Deviation (Wednesday April 29<sup>th</sup>)*

### Helpful Youtube Links

<https://www.youtube.com/watch?v=USFY2I9VGNO>

<https://www.youtube.com/watch?v=UBh48VErmZg>

### Steps to Solve

#### Step 1:

Find the mean of the data set

#### Step 2:

Determine the distance of each data value from the mean.

#### Step 3:

Add all the distance values and divide by the total number of values in the set.

\*The mean of the distance values is the MAD (Mean Absolute Deviation)\*