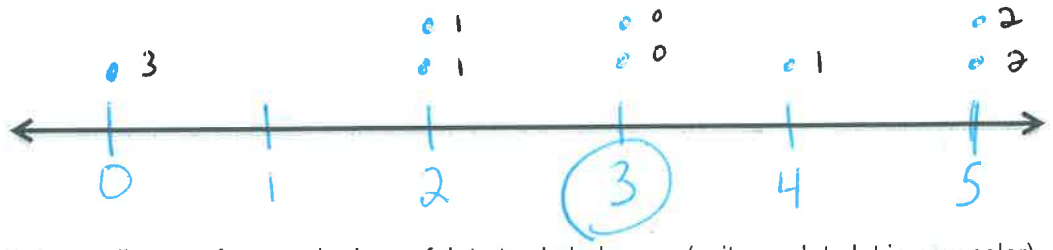
Cornell Notes	Topic/Objective: Determine the Mean Absolute Deviation (MAD) and use this quantity as a measure of the average distance data are from the mean	Name: Class/Period: Date:
Essential Question:		

Questions:	Notes:
	The **Mean Absolute Deviation** (MAD) of a set of data is the average distance the data are from the mean.
	→ Calculate the mean by adding all the numbers in the data set, then dividing by the number of numbers.
	→ Distance is always positive.
	Steps for Calculating MAD:
	1. Calculate the mean of the data
	2. Plot data on a dot plot; circle the mean on the dot plot
	3. Count the distance from each piece of data to the circled mean.
	HINT: Write the distance next to each dot on the dot plot in a new color
	4. Find the mean of the distances.
	Example 1: Find the Mean Absolute Deviation for the data set 2, 3, 5, 2, 0, 3, 5, 4
	1) Calculate mean of data: $\frac{0+2+2+3+3+4+5+5}{8} = \frac{24}{8} = 3$
	2) Plot data on dot plot; circle mean
	
	3) Count distance from each piece of data to circled mean (write on dot plot in new color)
	4) Find mean of the distances $\frac{3+1+1+0+0+1+2+2}{8} = \frac{10}{8} = 1.25$
	MEAN ABSOLUTE DEVIATION IS 1.25

Questions:	Notes:

Example 2: The number of magazine subscriptions sold by two teams of students for a drama club fundraiser is shown below. The mean number of subscriptions for each team is 4.

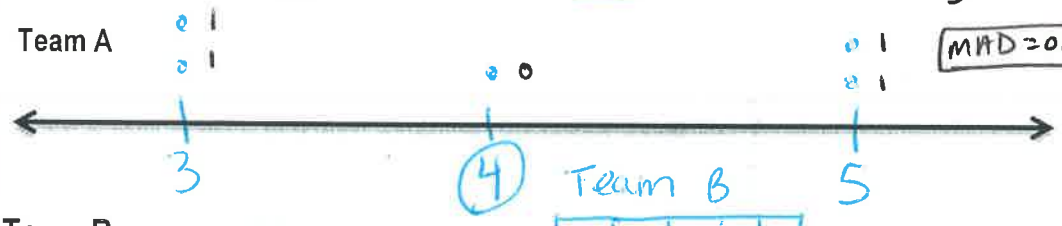
Will the MADs be the same for the two teams? NO

Team A

3	3	4	5	5

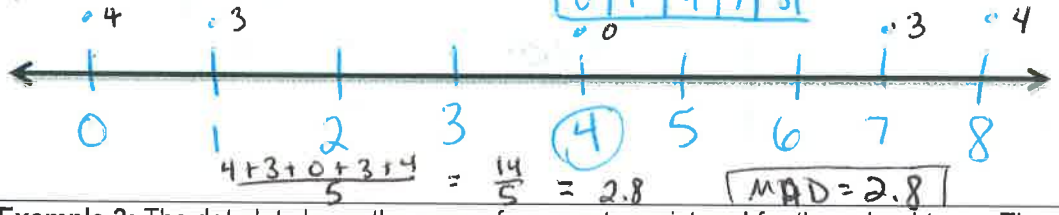
$\frac{1+1+0+1+1}{5} = \frac{4}{5}$

MAD = 0.8



Team B

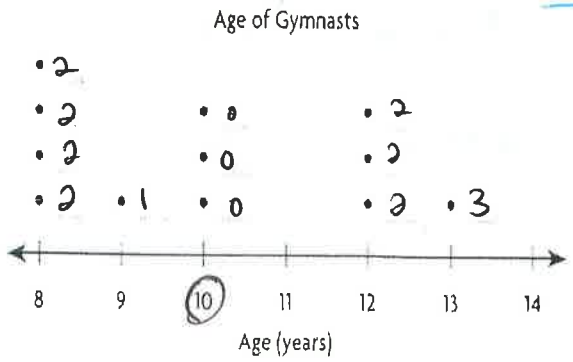
0	1	4	7	8



$\frac{4+3+0+3+4}{5} = \frac{14}{5} = 2.8$

MAD = 2.8

Example 3: The dot plot shows the ages of gymnasts registered for the school team. The mean of the ages is 10. Find the mean absolute deviation of the data.



$\frac{2+2+2+2+1+0+0+0+2+2+2+3}{12} =$

$\frac{18}{12} = 1.5$

MAD = 1.5

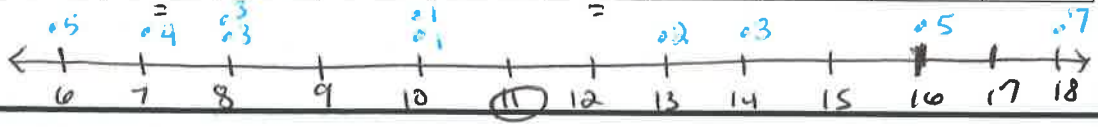
Mean:

$\frac{13+18+10+8+7+6+16+14+8+10}{10} =$

$\frac{110}{10} = 11$

Example 4: Elijah recorded the number of days of precipitation each month, except for January and February. What is the MAD of the data?

Days of Precipitation									
Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
13	18	10	8	7	6	16	14	8	10



Summary:

$\frac{5+4+3+3+1+1+2+3+5+7}{10} = \frac{34}{10} = 3.4$