Unit: Data and Statistics
Student Handout 4

Name _____

Date _____ Pd _____

MEAN ABSOLUTE DEVIATION

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- One way to describe the _____, or how spread out a set of data is, is by using _____ .
- Mean absolute deviation is the average _____ that the data points in a set of data are from the mean.
- A M.A.D. close to _____ means that the data values are close to the mean.

What does deviation, or "deviate" mean? How can it help you remember the definition of "mean absolute deviation"?

In order to find the mean absolute deviation of a set of data, follow the steps described in the table. Complete the table and apply the steps to find the mean absolute deviation in the situation below.

STEPS TO CALCULATE M.A.D.

1. Find the _____ of the data set
2. Find the _____ from each data point and the mean
3. Find the _____ of those distances

1. A flight attendant recorded the number of minutes it took to board the airplane for the last seven flights.

20, 19, 15, 23, 14, 17, 18

# OF MINUTES	DISTANCE FROM MEAN
20	
19	
15	
23	
14	
17	
18	
TOTAL DEVIATION	

a. Find the mean of the data.

b. List the distance between each data point and the mean in the table at the left.

c. Find the average of the distances, or the mean absolute deviation, to the nearest tenth.

d. Explain what the mean absolute deviation represents in the situation.

Practice finding mean absolute deviation, and round to the nearest tenth when necessary.

2. The number of people in hospital waiting rooms across the city are shown in the list at the right.

3, 5, 8, 10, 4, 6

NUMBER OF PEOPLE	DISTANCE FROM MEAN
3	
5	
8	
10	
4	
6	
TOTAL DEVIATION	

a. Find the mean of the data.

b. List the distance between each data point and the mean in the table at the left.

c. Find the average of the distances, or the mean absolute deviation, to the nearest tenth.

d. Explain what the mean absolute deviation represents in the situation.

3. The numbers at the right represent the number of dogs at the dog park Mariella saw each day last week.

10, 7, 2, 12, 4

a. Find the mean of the data.

NUMBER OF DOGS	DISTANCE FROM MEAN
10	
7	
2	
12	
4	
TOTAL DEVIATION	

b. List the distance between each data point and the mean in the table at the left.

c. Find the average of the distances, or the mean absolute deviation, to the nearest tenth.

d. Explain what the mean absolute deviation represents in the situation.

4. Coach Jackson found the mean absolute deviation for the number of minutes it took his PE class to run a mile. The mean absolute deviation was a very large value. Jaden assumes this means his class took a long time to run the mile. Do you agree with Jaden's conclusion? Explain why or why not.

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MEAN ABSOLUTE DEVIATION

Use your understanding of variability to answer the questions below.

1. Find the mean absolute deviation for the set of values.

11, 16, 70, 66, 14, 15

2. Find the mean absolute deviation for the set of values.

68, 70, 64, 62

3. The speed of the last six semi-trucks is recorded in the list below. Use the information to answer the questions below.

61, 55, 66, 58, 50, 70

a. What is the mean?

b. What is the mean absolute deviation?

SPEED	61	55	66	58	50	70
DEVIATION						

c. Explain what the mean absolute deviation represents in the situation.

4. The average monthly temperatures in New Orleans, LA has a mean absolute deviation of 43.5°F. What conclusion can you make about the average monthly temperatures in New Orleans, LA?

5. If the mean absolute deviation is close to 0, then what does that mean about the data set?

6. The data set below represents the number of free throws the Tiger basketball team made in their last 8 games. Circle the names of the students that made a correct statement about the data.

8, 4, 16, 10, 5, 11, 15, 3

EVELYN

The mean of the data is 9.

NOVA

The total deviation of each data point from the mean is 32.

CARTER

The mean absolute deviation is 3.6.