

Michael Jordan was a professional basketball player in the NBA for 15 years. He is frequently mentioned as the greatest basketball player of all time. He played for the Chicago Bulls team for most of his basketball career. He retired from the NBA in 2003.

The 1997-98 season is one of the years that the Chicago Bulls won the NBA championship. Below is a list of points scored by Chicago Bulls players, from team members who played over 40 games in the season.

	Chicago Bulls	1997/98
1	Michael Jordan	2357
2	Toni Kukoc	984
3	Scottie Pippen	841
4	Ron Harper	764
5	Luc Longley	663
6	Scott Burrell	416
7	Steve Kerr	376
8	Dennis Rodman	375
9	Randy Brown	288
10	Jud Buechler	198
11	Bill Wennington	167
	TOTAL:	7429

The Toronto Raptors basketball team came in last in their division in the 1997-98 season. Below is a list of points scored by team members.

	Toronto Raptors	1997/98
1	Kevin Willis	1305
2	Doug Christie	1287
3	John Wallace	1147
4	Chauncey Billups	893
5	Charles Oakley	711
6	Dee Brown	658
7	Gary Trent	630
8	Reggie Slater	625
9	Tracy McGrady	451
10	Oliver Miller	401
11	Alvin Williams	324
12	John Thomas	151
	TOTAL:	8583

- Compare the data in the tables without doing any calculations (only using estimates). What interesting features do you see within each data set and between the two data sets?
- Without calculating the actual values, which team do you think has a higher *points per player* mean? Why do you think so?
- Calculate the mean and median number of points for each team.
 Bulls' mean = _____ Bulls' median = _____
 Raptors' mean = _____ Raptors' median = _____
- Is the mean or the median a more accurate measure of center for the number of points scored by the Bulls? Explain your choice.
- What would happen if you replaced Michael Jordan's 2357 points with 10,000 points? Find the new mean and median for the Bulls' points per player. Did either value change by much? Explain.
 Bulls' Mean = _____ Bulls' Median = _____

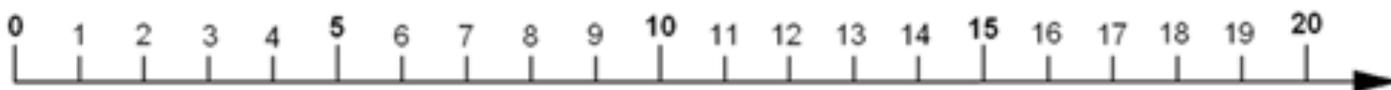
7. With a group of 4-5 students, record the number of pens and pencils that each of you have. Write down each of the numbers in the table provided below.
8. Find the mean of your data. What does the mean represent?

Mean Absolute Deviation (Review from 6th Grade): The mean absolute deviation (MAD) is a measure of variation in a set of numerical data. It is computed by adding the distances between each data value and the mean, then dividing by the number of data values.

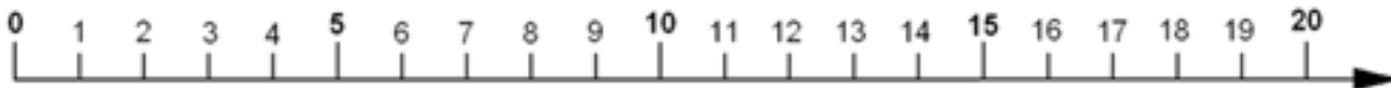
9. Find the mean absolute deviation for the data you collected.

	Number of pens/pencils	Mean <small>All values in this column will be the same</small>	number – mean <small>All values should be positive.</small>
Student 1			
Student 2			
Student 3			
Student 4			
Student 5			
			TOTAL:
			AVERAGE (MAD):

10. In problem #9 above, you found the mean absolute deviation for your group’s data. On the number line below, mark the position of the mean. Put large bracket symbols [] above and below the mean at a distance of one mean absolute deviation (MAD).



11. Write down the mean and MAD for another group. Like you did above, mark the position of the mean on the number line below. Put large bracket symbols [] above and below the mean at a distance of one mean absolute deviation.



12. Is the MAD for your group higher or lower than the other group? What does it mean if a group has a higher MAD?

1. Ms. Parrish gave her students a math test and recorded their scores. The following is data for all 16 students in her class: 84, 91, 78, 94, 79, 82, 0, 98, 75, 0, 86, 91, 98, 77, 85, 90. Find the following values:

a. Mean _____ Median _____ Mode _____

b. The two scores that are listed as zeros are from students who were absent. Re-calculate the measures of center without the zeros.

Mean _____ Median _____ Mode _____

c. Explain the effect that the zeros had on the mean, and which values provide the better indication of the center with respect to students' scores.

2. Students tried out for the school play by memorizing a part. The students were rated on how well they performed and how much they were able to memorize. Their ratings were scored on a scale from 0-100. The scores for the 20 students are shown below.

14	79	68	88	84
96	74	94	98	89
97	88	80	94	67
100	98	88	74	88

a. Sort the data from smallest to largest.

b. Find the following values:

Mean _____ Median _____ Mode _____

c. The first student on the list got a sick stomach during the tryouts and couldn't finish, so only scored a 14. The student was allowed to try again later that day, and now scores a 99.

What is the new mean score? _____

How much does the mean score change?

d. Hamlet is calculating the new mean. Instead of replacing the re-do score of 99, Hamlet adds the re-do score to the end of the list, and then divides the sum by 20. What is result of Hamlet's calculation?

e. Explain why Hamlet's calculation isn't really an average. What should Hamlet do to fix the calculation?

3. Ten members of the Ceramics Club meet after school to make pottery. A survey was taken to see how far (in city blocks) each member of the club had to travel to get home carrying their heavy pots. The results of the survey are the following distances:

12, 8, 14, 4, 16, 7, 4, 128, 11, 9

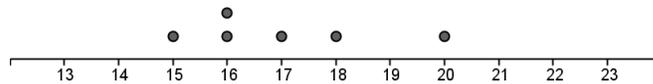
a. Mean _____ Median _____ Mode _____

b. Which would be the best measure of center for the data: mean, median, or mode? Explain your answer.

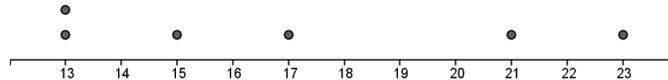
c. Remove the outlier and find the mean of the remaining nine data values. New Mean _____

4. Thomas and Enrique run 2 miles every week and record their times (in minutes). Their data is recorded in the table below:

Thomas' times



Enrique's times



a. Which runner has data showing the greatest spread? Explain using the plots and comparing data points.

b. Which runner has the fastest mean time? The fastest median?

c. If you wanted to select one of these runners to represent your class in a running competition, which one would you chose, and why?