

Collecting Data

Name: _____

Gary tried out for the college baseball team and had received information about his performance. In a letter mailed to his home, he found these recordings. Pitch speeds: 83, 84, 88, 95, 84, 83, 78, 90, 87, 87, 79, 82, 79, 84, 85, 80, 81, 83, 89, 82, 86, 86, and 83

Rebecca was a lead speaker on the survey team for Arby's Restaurant Incorporated. The company needed to find out where to build their new restaurant. They were concerned with the amount of traffic passing the intersection of Metro Ave. and Crystal Drive. Rebecca's survey team spent every day for ten days at the corner. At 11am, noon, and 1 pm they took data for the first 15 minutes (quarter of the hour) on how many vehicles passed. The data looked as follows: 56, 173, 63, 87, 95, 110, 89, 121, 124, 93, 95, 99, 86, 111, 112, 101, 103, 114, 88, 92, 99, 92, 84, 103, 125, 98, 87, 107, 114, and 95

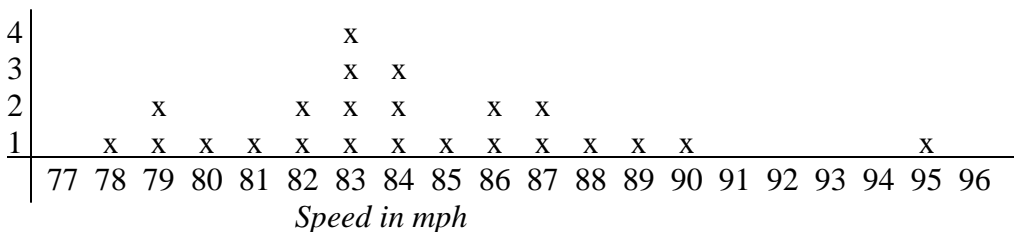
Entertainment: Our class is going to spin a top. Each person will get one spin. I will time (in seconds) how long it spins. I need a volunteer to help record this data on the board, as we all record it on this sheet of paper. _____

A,e,i,o,u and sometimes y. Open any book (history, math, science) you have with you. Find the first reading section and count the number of vowels in the first sentence. The letter y will be a counted as a vowel. Write the number on the line below, continue this for 19 other paragraphs. _____

Tell me your name: Have one volunteer write on the board, as other students write on this page. Count the letters in your last name and write it here _____. As the teacher calls through the row tell the volunteer at the board how many letters you have in your name. Continue to write down all the data given (written on the board): _____

Displaying Data **GARY**

Here is what a line plot of Gary's pitching speeds would look like.



Notice that each time a number appears in the data listing, we place n “x” above that number, then cross out that number from the data list. Crossing out the number you have already displaced in the line plot helps you not display a number twice, by accident.

By looking at our collection data (random) , information was harder to comprehend. With the data displayed in an organized fashion we can, without much time or trouble answer a few questions dealing with central tendencies.

- What set of tens has been represented most? _____.
- What is the Minimum? _____. This would have taken longer to find if it were not in order.
- What is the Maximum? _____.
- Is there an outlier, and name it? _____. Data given in an organized manner helps you to be able to visually see it.
- What is the range? Max – Min _____.
- What is the mode? (*You simply look at the tallest stack of x's*) _____.
- What is the median? (*You can take a finger on each hand and begin at the outsides of the x's and move to the center , one from the left and one from the right.*) _____.
- What is the Mean ? (*average: Sorry you have to work this one out.*) _____.
- How many more 84's are there than 89's? _____.
- How many pitches were faster then 88 mph? _____.

<p>Criteria One: Have an average pitching speed of 83.2 miles per hour.</p> <p>Criteria Two: Have no outlier that was farther than 10 mph from the average.</p> <p>Criteria Three: Have a mode that appeared more that three times.</p> <p>Criteria Four: Have a range of 20 or less.</p>

Did Gary make the team. To make the team he had to have three of the four criteria?

What is one thing Gary could do different at the next practice to impress the judges?

Here is what a stem-n-leaf of the traffic would look like.

5	6
6	3
8	4 6 7 7 8 9
9	2 2 3 5 5 5 8 9 9
10	1 3 3 7
11	0 1 2 4 4
12	1 4 5
17	3

key $23 / 7 = 237$

The stem-n-leaf is used when the data does not have numbers that repeat themselves often, but are located in a section.

If all the teachers would go out and shoot ten basketball shoots from a very close range, all our numbers would be one of eleven answers (Zero through 10). But when taken data like the numbers of cars that pass an intersection in a 15-minute interval, it is seldom that the numbers will repeat themselves.

I enjoy thinking of a stem-n-leaf as follows;

CA	B N P R T
HI	D M P S T
TO	E

Complete the lettered stem-n-leaf for TO above.

What set of tens has been represented most? _____. Easy to find from a stem-n-leaf.

What is the Minimum? _____. This would have taken longer to find if it were not in order.

What is the Maximum? _____.

Is there an outlier, and name it? _____. Data given in an organized manner helps you to be able to visually see it.

What is the range? Max – Min _____.

What could be a reason for such a large range? _____

What could be a reason for the outliers? _____

What is the mode? (*Look for a number that repeats itself within the same line*) _____.

What is the median? (*You can take a finger on each hand and begin at the ends of the numbers and move to the center, one from the bottom and one from the top.*) _____.

What is the Mean? (*Average: Sorry you have to work this one out.*) _____.

What does 11|0 represent in this stem-n-leaf? _____

Displaying Data **REBBECA**

Here is what a stem-n-leaf of the traffic would look like.

5	6
7	3
8	4 6 7 7 8 9
9	2 2 3 5 5 5 8 9 9
10	1 3 3 7
11	0 1 2 4 4
13	1 4 5
18	3

key 23 / 7 = 237

The stem-n-leaf is used when the data does not have numbers that repeat themselves often, but are located in a section.

If all the teachers would go out and shoot ten basketballs shoots from a very close range, all our numbers would be one of eleven answers (Zero through 10). But when taken data like the numbers of cars that pass an intersection in a 15-minute interval, it is seldom that the numbers will repeat themselves.

I enjoy thinking of a stem-n-leaf as follows;

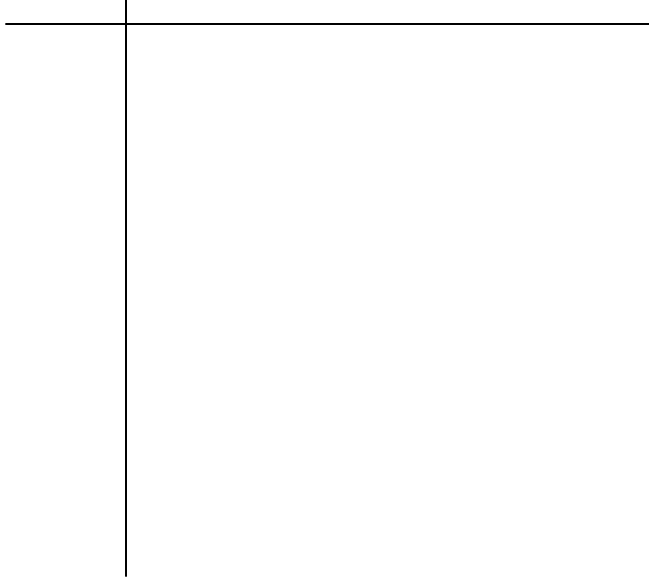
CA	B N P R T
HI	D M P S T
TO	E

Complete the lettered stem-n-leaf for TO above.

- What set of tens has been represented most? 90's. Easy to find from a stem-n-leaf.
- What is the Minimum? 83. This would have taken longer to find if it were not in order.
- What is the Maximum? 156.
- Is there an outlier, and name it? 183 and 56. Data given in an organized manner helps you to be able to visually see it.
- What is the range? Max – Min 183 – 56 = 127.
- What could be a reason for such a large range? Different events or weather
- What could be a reason for the outliers? Church or stadium on the road. People would not be driving to it or from it during the event, but would lots of cars the hour before and after the vent time.
- What is the mode? (look for a number that repeats itself within the same line) 95.
- What is the median? (you can take a finger on each hand and begin at the ends of the numbers and move to the center, one from the bottom and one from the top.) 98.5.
- What is the Mean? (average: Sorry you have to work this one out.) 100.53.
- What does 11|0 represent in this stem-n-leaf? 110

Displaying Data **Entertainment**

We suggest using a stem-n-leaf, since the numbers of seconds have a very low chance of being repeated. We may not have any repeated, therefore having no mode.



Key

Don't forget to make a key for the stem-n-leaf above.

What set of tens has been represented most? _____.

What is the Minimum? _____. This would have taken longer to find if it were not in order.

What is the Maximum? _____.

Is there an outlier, and name it? _____. Data given in an organized manner helps you to be able to visually see it.

What is the range? Max – Min _____.

What could be a reason for such a large range? _____

What could be a reason for the outliers? _____

What is the mode? (*look for a number that repeats itself within the same line*) _____.

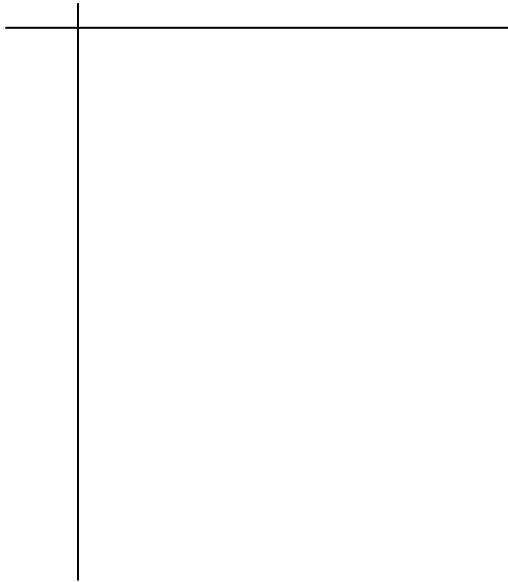
What is the median? (*you can take a finger on each hand and begin at the ends of the numbers and move to the center, one from the bottom and one from the top.*) _____.

What is the Mean? (*average: Sorry you have to work this one out.*) _____.

Displaying Data **A, e, i, o, u and y**

We suggest using both a stem-n-leaf and line plot to display this data.

Stem-n-leaf



line plot



Key

Don't forget to make a key for the stem-n-leaf above.

Don't forget to make the titles for the line plot.

What set of tens has been represented most? _____.

What is the Minimum? _____. This would have taken longer to find if it were not in order.

What is the Maximum? _____.

Is there an outlier, and name it? _____. Data given in an organized manner helps you to be able to visually see it.

What is the range? Max – Min _____.

What could be a reason for such a large range? _____

What could be a reason for the outliers? _____

What is the mode? (*look for a number that repeats itself within the same line*) _____.

What is the median? (*you can take a finger on each hand and begin at the ends of the numbers and move to the center, one from the bottom and one from the top.*) _____.

What is the Mean? (*average: Sorry you have to work this one out.*) _____.

Which graph seemed wiser to use? _____ Explain Why? _____

Displaying Data **Tell me your name**

We suggest using a line plot to display this data.



Don't forget to make the titles for the line plot.

What is the Minimum? _____. This would have taken longer to find if it were not in order.

What is the Maximum? _____.

Is there an outlier, and name it? _____. Data given in an organized manner helps you to be able to visually see it.

What is the range? Max – Min _____.

What could be a reason for such a large range? _____

What could be a reason for the outliers? _____

What is the mode? (*look for a number that repeats itself within the same line*) _____.

What is the median? (*you can take a finger on each hand and begin at the ends of the numbers and move to the center, one from the bottom and one from the top.*) _____.

What is the Mean? (*average: Sorry you have to work this one out.*) _____.

Why would it better to use a line plot for this data? _____

The number of letters in a variety of last names are going to be 3-13, not much variance.

Math is _____. Use the bold letters from the Collecting data sheet to answer this.