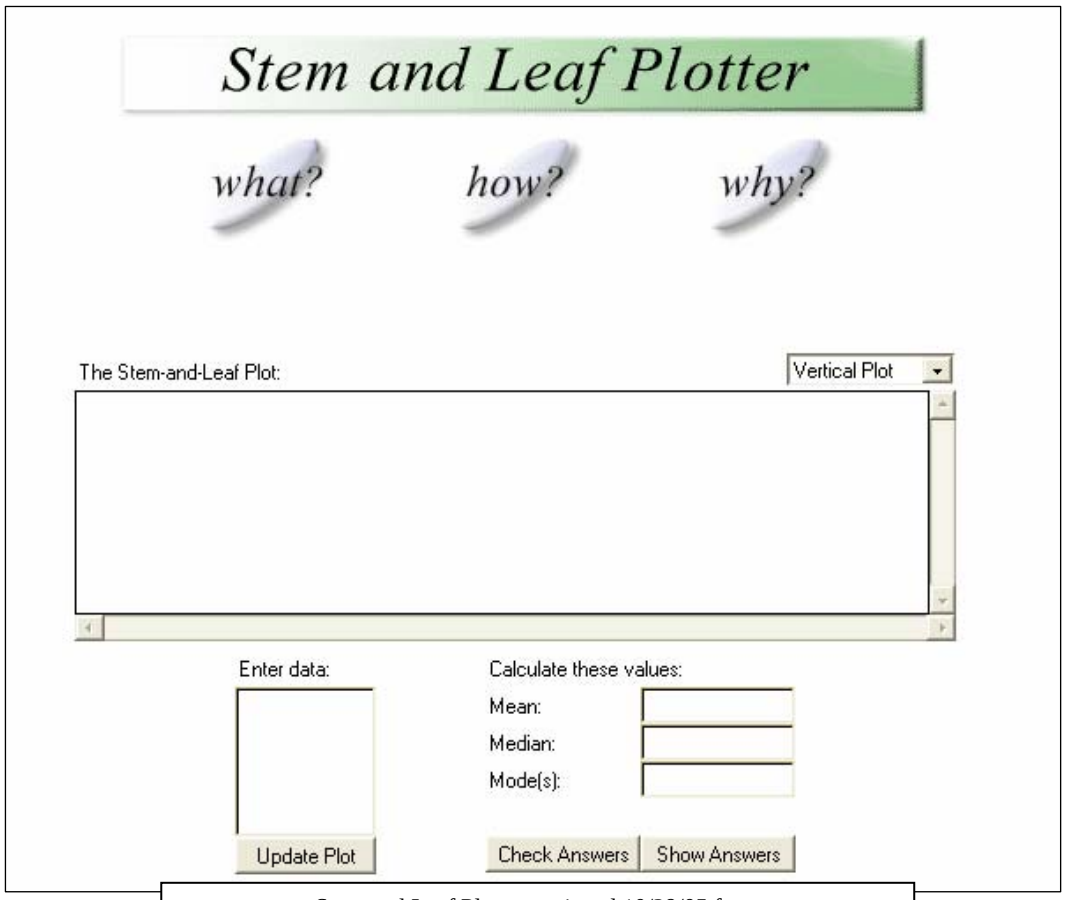
Stem and Leaf – Computer Participant Page

1. Open the Stem and Leaf Plotter on the computer.
   http://www.shodor.org/interactivate/activities/stemleaf/index.html
2. Enter the data as the presenter calls it out in the box titled: "Enter data:" Then select "Update Plot."
3. Sketch your stem and leaf plot below.



Stem and Leaf Plotter retrieved 10/29/05 from
http://www.shodor.org/interactivate/activities/stemleaf/index.html

4. Estimate the values of the mean, median, and mode(s). Enter your estimates in the boxes. Then select "Check answers."

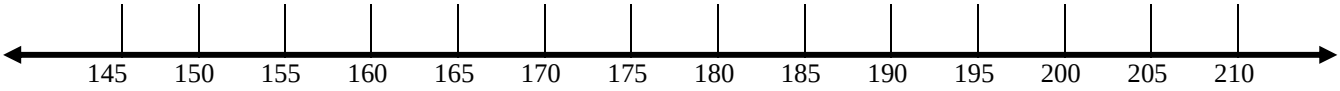
5. The stems are the values found to the left of the vertical line on the stem and leaf plot. Where do these values come from?

6. The leaves are the values found to the right of the vertical line on the stem and leaf plot. Where do these values come from?

7. If you turned the stem and leaf plot horizontally, what type of graph would it resemble? Use the drop down menu to select Horizontal Plot. Does this verify your prediction?

Box and Whisker Plot – Participant Page

I. Create a box and whisker plot that represents the flat-footed heights of the participants. Fill in the appropriate values in the table for the flat-footed heights.



		Flat-footed height	Tiptoe height
minX	**Minimum**		
Q_1	**Lower Quartile**		
Med	**Median**		
Q_3	**Upper Quartile**		
maxX	**Maximum**		
$\bar{x}$	**Mean**		
maxX-minX	**Range**		

II. Using the number line above, create a box and whisker plot that represents the tiptoe heights of the participants. Create the plot above the flat-footed plot. Then fill in the appropriate values in the table for the tiptoe heights.

Box and Whisker Plot – Computer Participant Page

1. Open the Virtual Manipulatives website. **http://nlvm.usu.edu/en/nav/vlibrary.html**
   - Click on Data Analysis and Probability Grades 6-8.
   - Click on Box Plot.
   - Click on Clear in the lower left corner to clear the list of data.
2. Using your Stem and Leaf Activity Page, enter the shortest height first.
3. Using your Stem and Leaf Activity Page, enter the tallest height second.
4. Continue by entering heights from the lower 50% of the data. Why does the "box" shift as more values are entered? _____
5. Predict what will happen to the graph as the remainders of the class heights are entered.

   _____
6. Verify your prediction by entering the upper 50% of the data. More cells will automatically be created as you need them. Was your prediction correct? _____
7. What is the minimum value of data? _____ Where do you see this on the graph?

   _____
8. What is the maximum value of data? _____Where do you see this on the graph?

   _____
9. About 75% of the class is taller than what height? _____
10. About 50% of the class is shorter than what height? _____
11. What is the median height? _____Where do you see this on the graph? _____

    _____

Box and Whisker Plot – Computer Participant Page

Experiment with the data on the computer to answer the following questions. Record your solutions below.

12. Add some data that will change the minimum value. What data did you add? Why did this data change the minimum value?

13. Add some data that will change the maximum value. What data did you add? Why did this data change the maximum value?

14. Add some data that will shift the median to the left. What data did you add? Why did this data shift the median to the left?

15. Add some data that will shift the median to the right. What data did you add? Why did this data shift the median to the right?

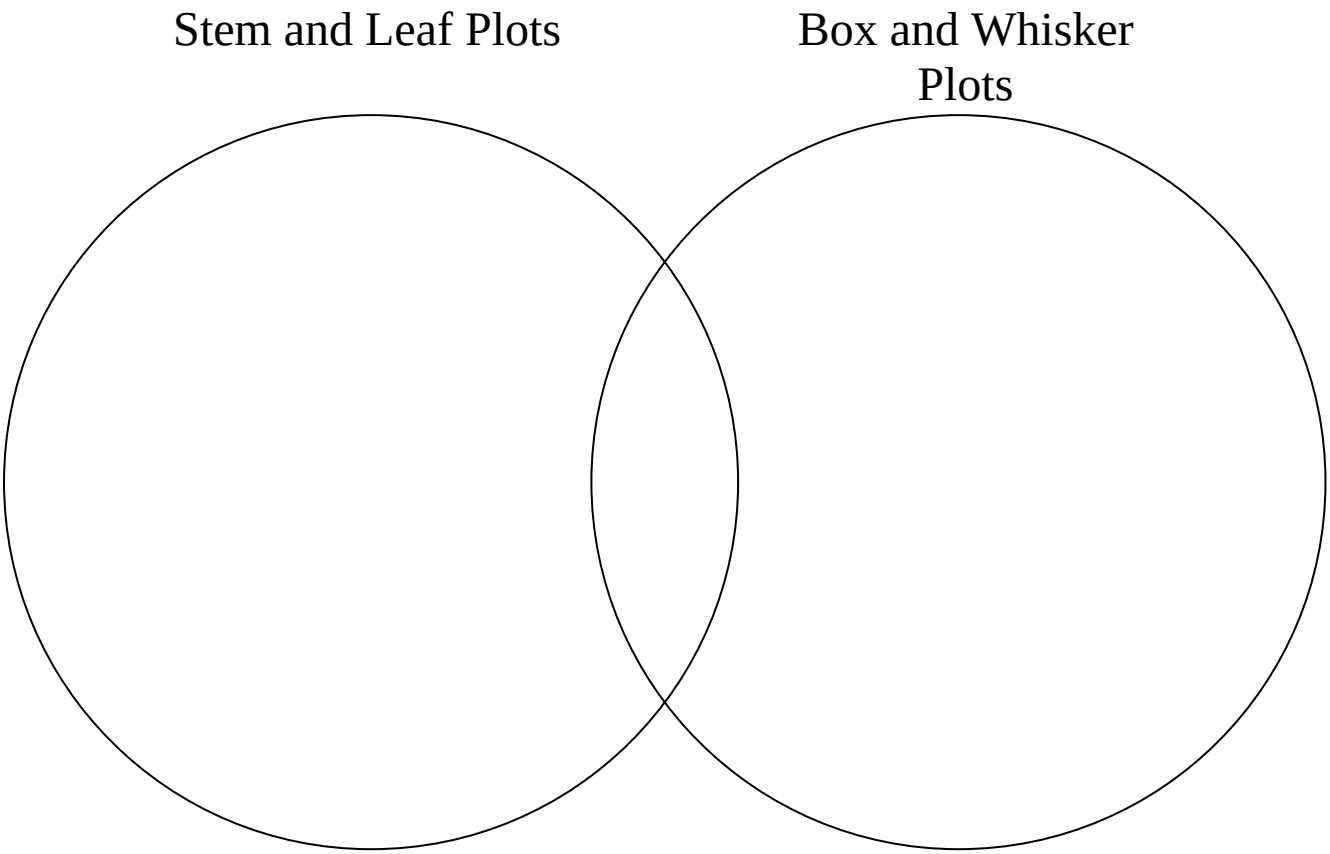
16. Add some data that will cause the whiskers to be equal in length. What data did you add? Why did this data create whiskers of equal length?

17. Add some data that will cause the box sections to be equal in length. What data did you add? Why did this data create box sections of equal length?

18. Add some data that will cause the right whisker to be about twice the length of the left whisker. What data did you add? Why did this happen?

19. Generate a list of new data that will allow the average to fall in the whiskers. Why did the average fall in the whiskers?

Venn Diagram – Participant Page



Explore/Explain 1 - Intentional Use of Data

TEKS	Math		
	Tech Apps		
Question(s) to Pose to Students	Math		
	Tech Apps		
Cognitive Rigor		Knowledge	
		Understanding	
		Application	
		Analysis	
		Evaluation	
		Creation	
Data Source(s)		Real-Time	
		Archival	
		Categorical	
		Numerical	
Setting		Computer Lab	
		Mini-Lab	
		One Computer	
		Graphing Calculator	
		Measurement Based Data	
Bridge to the Classroom			