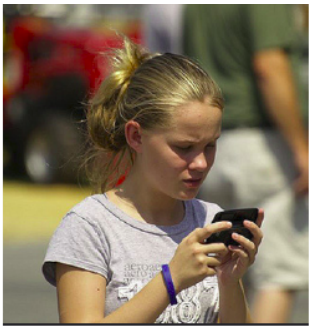
Name:_____ Per:_____

SECONDARY MATH I // MODULE 9
MODELING DATA – 9.1

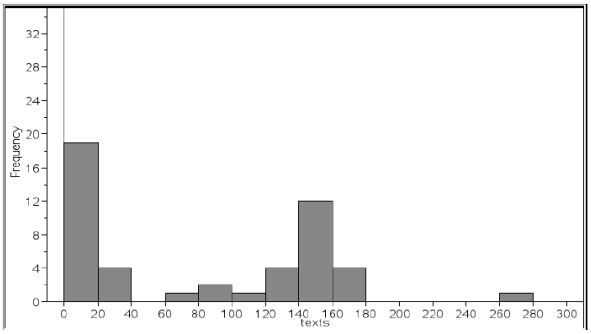
9.1 Texting by the Numbers

A Solidify Understanding Task



Technology changes quickly and yet has a large impact on our lives. Recently, Rachel was busy chatting with her friends via text message when her mom was trying to also have a conversation with her. Afterward, they had a discussion about what is an appropriate number of texts to send each day. Since they could not agree, they decided to collect data on the number of texts people send on any given day. They each asked 24 of their friends the following question: "What is the average number of texts you SEND each day?" The data and histogram representing all 48 responses:

{0, 2, 3, 3, 5, 5, 5, 5, 5.5, 6, 6, 6, 10, 12, 13, 15, 15, 16, 20, 25, 35, 36, 70, 80, 85, 110, 130, 137, 138, 138, 140, 142, 143, 145, 150, 150, 150, 150, 150, 150, 150, 155, 162, 164, 165, 175, 275}



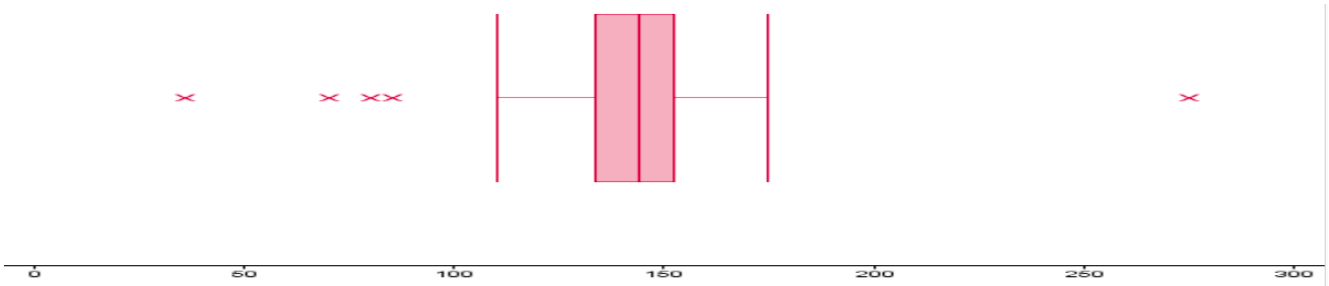
Part I:

1. What information can you conclude based on the histogram above?

2. Represent the same data by creating a box plot above the histogram.

3. What story does the box plot tell? Describe the pros and cons of each representation (histogram and box plot). In other words, what information does each representation highlight? What information does each representation hide or obscure?

Part II: Prior to talking about the data with her mom, Rachel had created a box plot using her own data she collected and it looked quite different than when they combined their data.



Average number of texts sent each day

4. Describe the data Rachel collected from her friends. What does this information tell you?

5. Compare the two box plots (Rachel's data vs all data).

6. Rachel wants to continue sending her normal number of texts (average of 100 per day) and her mom would like her to decrease this by half. Present an argument for each side, using mathematics to justify each person's request.

READY, SET, GO! **Name** **Period** **Date**

READY

Topic: Measures of central tendency

Sam's test scores for the term were 60, 89, 83, 99, 95, and 60.

1. Suppose that Sam's teacher decided to base the term grade on the mean.
   a. What grade would Sam receive?

   b. Do you think this is a fair grade? Explain your reasoning.

2. Suppose that Sam's teacher decided to base the term grade on his median score.
   a. What grade would Sam receive?

   b. Do you think this is a fair grade? Explain your reasoning.

3. Suppose that Sam's teacher decided to base the term grade on the mode score.
   a. What grade would Sam receive?

   b. Do you think this is a fair grade? Explain your reasoning.

4. Aiden's test scores for the same term were 30, 70, 90, 90, 91, and 99. Which measure of central tendency would Aiden want his teacher to base his grade on? Justify your thinking.

5. Most teachers base grades on the mean. Do you think this is a fair way to assign grades? Why or why not?

SET

Topic: Examining data distributions in a box-and-whisker plot.

6. Make a box-and-whisker plot for the following test scores.

60, 64, 68, 68, 72, 76, 76, 80, 80, 80, 84, 84, 84, 84, 88, 88, 88, 92, 92, 96, 96, 96, 96, 96, 96, 96, 100, 100

7 a. How much of the data is represented by the box?

b. How much is represented by each whisker?

8. What does the graph tell you about student success on the test?

GO

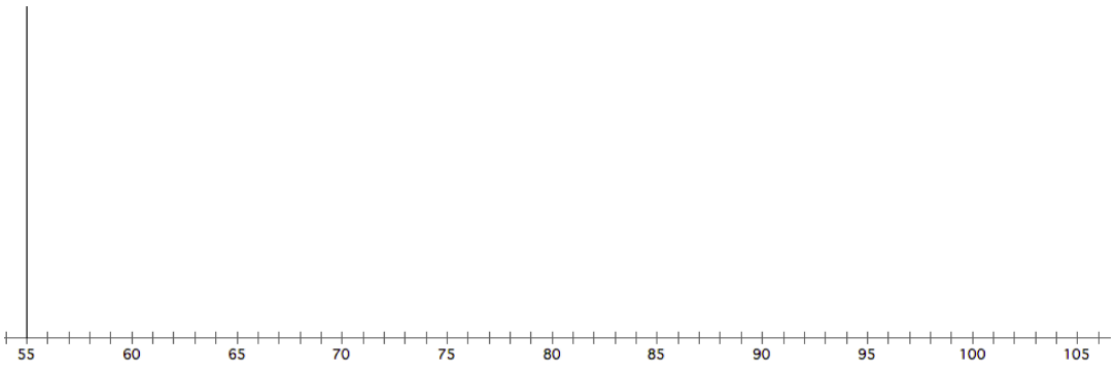
Topic: Creating histograms.

Use the data from the SET section to answer the following questions.

9. Make a frequency table with intervals. Use an interval of 5.

Score	Frequency
60 – 64	
65 – 69	
70 – 74	
75 – 79	
80 – 84	
85 – 89	
90 – 94	
95 – 99	
100-104	

10. Make a histogram of the data using your intervals of 5.



11. What information is highlighted in the histogram?

12. What information is highlighted in the box-and-whisker plot?