



Statistical Survey Project

The project will be due _____

Overview

You will be designing and conducting your own survey to draw an inference about a certain population. You will need to display the data collected in 3 different ways, and will be presenting your data and results of your study to your class.

If you follow these steps, you will do well on this project!

Step 1

Choose two **quantitative** survey questions and write them down here. A **quantitative** survey question is a question with a numerical value.

You will want to ask a question in which respondents will give a varying range of answers. For example, "How often do you pack your lunch during a school week?" is an example of a quantitative survey question, but might not produce a wide range of answers. Do not use a survey question such as "What is your favorite subject?" This is an example of a **qualitative** survey question. A good question might be, "How many text messages do you send in a week?" or "How many minutes a week do you spend doing homework?"

My two possible questions are:

1) _____

2) _____

Step 2

Meet with your teacher to discuss your two questions, and which would be the better choice to yield valid results, with a wide statistical range. **Highlight** the question that you and your teacher decide that you will be using.

Step 3

You will need to survey at least 60 people for your sample. Describe your sample population and how they will meet the needs of your survey.

Prediction: What do you predict the results will be?



Step 4

Conduct your survey!!! Your sample size for each population must be ***at least*** 60. The greater the sample the better the results will be! Record your samples in the table below.

Question: _____



Step 5

Create a frequency table for your data set. An example is shown to the right.

Frequency Table for Population

Peas in a Pod	Frequency (how many times it occurred)
3 peas	5
4 peas	10
5 peas	28
6 peas	36
7 peas	12
8 peas	9
	Total = 100

Step 6

Create a histogram using your data. Be sure to title your histogram, and label each axis.



Step 7

Create a 5-number summary and find the range.

Population: _____
Mean (review) =
Median =
Q1 =
Q2 =
Q3 =
IQR =
Range =
Maximum Value =
Minimum Value =

Step 8

Find the mean for the population and then create a number line. Find the ***mean absolute deviation*** (MAD).

Population: Mean _____; MAD _____



Step 9

Construct a box-plot for your population.

Step 10

You will now need to assemble all of your graphical displays and data to present to the class. You may choose to make a poster, a prezi or a powerpoint presentation, or some other type of display to present your graphical data and conclusions. You may hand draw your graphs, as you did on the prior pages, or you may use software to help you, such as excel or a graphing program.

Step 11

Answer the following questions about your survey in the form of a report. It may be typed or neatly handwritten.

Introduction

- 1) Describe the question you are studying.
- 2) What assumption(s) made you believe your chose subgroup (e.g. boys v. girls) would yield more interesting results. Explain.

Analysis

- 1) What are the results of your study?
- 2) Do you believe your findings are statistically valid? Why or why not?
- 3) What possible factors may have contributed to your results? (E.g. was one part of the population biased; too many boys sampled)

Graphical Analysis

- 1) Of the 3 displays, frequency table, histogram, or box-plot, which display best illustrates the data for making inferences about the population sampled? Explain.
- 2) Of the 3 displays, frequency tables, histogram, or box-plot, which display is the worst at illustrating the data for making inferences about the population sampled? Explain.
- 3) For the histogram, is your dot plot skewed to the left, right, or neither? What does this tell you about the data and the population you surveyed?
- 4) Is your box-plot skewed to the left, right, or neither? What does this tell you about the data?
- 5) Does your data have any outliers? If so, how did the outlier change your results?

Conclusion

- Write a one-paragraph summary about what you learned about the population you surveyed, and what inferences can be made.
- Were you surprised by your findings or did your study confirm your previous prediction. Explain.
- What did you learn mathematically and/or technologically from conducting this study?
- Any final thoughts.



Statistical Survey Project – Rubric

Components of the Project	Points Possible	Points Earned
Pre-Planning & Survey		
Step 1 & 2: Question Approved by Teacher	5 pts.	
Step 3: Description of Sample Population & Prediction	5 pts.	
Step 4: Survey of Sample Population	10 pts.	
Graphical Displays		
Step 5: Frequency Table	10 pts.	
Step 6: Histogram	10 pts.	
Step 7, 8 & 9: Analyzing Data, MAD, Box- Plots	30 pts.	
Presentation		
All graphical displays are presented; student is able to clearly describe their survey question, sample population and results.	20 pts.	
Written Analysis		
Introduction	5 pts.	
Analysis	10 pts.	
Graphical Analysis	10 pts.	
Conclusion	5 pts.	
Total Points:	120 Points	

