Lesson C1: Statistical Project Introduction and Data Collection

Warm Up

What would you like to conduct a study on? What would you like to know about the students in our class?

For the questions you created, which questions would generate numerical answers from your classmates?

Team Name:

Project Overview

With your group, you will apply your knowledge to conduct your own study and to represent your data. You will present your findings to the class.

Timeline of the Project:

1) Develop your statistical question *(Day 1)*
2) Collect the numerical data *(Day 1)*
3) Analyze the data by summarizing with measures of center and spread *(Day 2)*
4) Construct a variety of data displays (frequency table, dot plot or histogram) *(Day 2)*
5) *Written Analysis: Review your findings to answer your question and describe what you discovered (Day 3)*
6) Present your findings *(Day 4)*

Rubrics

1) Measures of Center and Spread (Day 2)
2) Data Displays (Day 2)
3) Analysis of Data (Day 3)
4) Group Presentation (Day 4)

Measures of Center and Spread			
Mean, Median, Mode, and Range			
4 points All 4 measures are calculated correctly	3 points 3 measures are calculated correctly	2 points 2 measures are calculated correctly	1 point 1 measure is calculated correctly

Data Displays			
Frequency Table			
2 points Table has a title and accurately shows the frequency of data points		1 point Table has a title but some data is missing or incorrect	
Histogram			
4 points Includes all of the following elements: title, the axes are labeled, the scale is labeled, data is depicted accurately	3 points Missing one element from the 4 points description	2 points Missing 2 elements from the description	1 point Missing 3 elements from the description
Dot Plot			
4 points Includes all of the following	3 points Missing one element from	2 points Missing 2 elements from	1 point Missing 3 elements from

elements: title, axis is labeled, key is included, data is depicted accurately	the 4 points description	the description	the description

Analysis of Data			
Written Summary			
<u>4 points</u> Exceeds Expectations Student response answers the following questions and explains further. Student analysis of data extends beyond this survey and the paragraph includes more than 5 sentences. 1) What can you conclude from the data? What is the answer to your question? 2) What new questions do you have after conducting this survey? 3) What do you notice when you compare the data displays?	<u>3 points</u> Meets Expectations The student addresses all questions listed under "Exceeds Expectations" and cites specific data or calculations to support their thinking. Student's paragraph is 5 sentences long.	<u>2 points</u> Partially Meets Expectations The student addresses all questions or most questions but provides less detail and evidence from their data and displays. Student's paragraph may be less than 5 sentences.	<u>1 point</u> Does Not Meet Expectations The student addresses some of the questions under "Exceeds Expectations" but the writing is incomplete. The student does not give specific details or evidence to support ideas. The student writes only a few sentences instead of a complete paragraph.

Group Presentation

Explanation of Survey Results

4 points Exceeds Expectations	3 points Meets Expectations	2 points Partially Meets Expectations	1 point Does Not Meet Expectations
The group answers all of the following questions in their presentation and provides multiple pieces of evidence from their data and displays to support their ideas. 1) What is the answer to your statistical question? 2) What evidence do you have to support that conclusion? 3) Were your results consistent with your predictions? 4) Did any aspect of your data surprise you? Presentation skills: Speaking clearly, volume of voices matches size of audience	The group answered all of the questions, but could have offered more evidence to support their thinking. The clarity or level of voice was not always consistent with the audience.	The group answered most of the questions and needed to provide more evidence to support their thinking. The clarity or level of voice was not always consistent with the audience.	The group did not directly address the questions and did not have data to support their ideas. Students could not be heard clearly while presenting so information could have been missed or unheard.

Research Question Brainstorm

1) Discuss with your group what research questions you brainstormed during the Warm Up (Page 1) and how your questions are statistical or not statistical.

2) Write down your group's agreed-upon research question and share it with your teacher.

3) Why did you choose this question? What were you curious about?

4) After you get your question approved, write down your final APPROVED research question here.

Data Predictions

1) Write down what you predict your results might be as they relate to your research question.

2) What do you think might be the meaning of your predicted results?

3) Sketch, visually, what you predict your results might look like using a dot plot.

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4) Discuss your predictions with your group.