

## Statistics Project: Analysis Paper Outline

### Paragraph 1—Introduction

- A. State your statistical question and your claim and why you chose that claim.
- B. State your populations or experimental/comparison groups and why you chose those populations/groups.

### Paragraph 2—Sample

- A. Include the sample size for each of your samples/groups.
- B. How did you sample from your populations (random, convenience) or collect data for your observational/experimental study?
- C. What biases, if any, occurred in your sampling or observational/experimental data collection?
- D. How might biased samples or processes impact your overall results?

### Paragraph 3—Survey or Observation/Experiment

- A. What were your survey questions, or what observational/experimental process did you follow?
- B. How did your questions or processes help to support your claim?
- C. Were any of your survey questions or observational/experimental processes biased? How?

### Paragraph 4—Analysis of Data

- A. Using the data, what were your results? (Embed your graphs/charts and measures here.)
  - For numerical data, what were the measures of central tendency (mean, median, mode) and measures of variability (interquartile range, MAD) for each sample's/group's data?
  - For your numerical data, use a dot plot, box plot, or histogram to display your data.
  - For categorical data, include a frequency table and a bar graph or circle graph to display your data.
- B. Did the data support your claim? State your conclusion, and explain how you came to your conclusion. Refer to your graphs and measures in your explanation.
- C. State generalizations about your populations or groups. Include answers to such questions as these in your generalizations: What were the outcomes of the majority? Were there any outliers that may have affected your results? Were there any other factors that affected your results?
- D. State conclusions about your populations or groups. Include answers to such questions as these in your conclusions: What did you learn based on the data? How did what you originally thought compare to what actually happened? Did the results change your beliefs about your populations?
- E. Make inferences. Include answers to such questions as these in your inferences: What inferences can you make about even larger populations or groups? (For example, instead of students in our school, consider middle schoolers worldwide.) What factors might impact your inferences?

### Paragraph 5—Reflection and Conclusion

- A. What did you learn from conducting this statistics project?
- B. How can you connect this research to real-world situations/scenarios?
- C. How did the data you collected affect your opinion of your original claim?
- D. What would you do differently if you were to conduct this research again?
- E. How did this project help you to better understand statistics?