

**The Project:**   You and your partner (or you by yourself) will design and conduct an experiment to investigate the effects of response bias in surveys. You may choose the topic for your surveys, but you must design your experiment so that it can answer at least one of the following questions:

* Can the wording of a question create response bias?
* Do the characteristics of the interviewer create response bias?
* Does anonymity change the responses to sensitive questions?
* Does manipulating the answer choices change the response?

**Proposal (10 points) – complete online at *https://tiny.cc/c9codz***

* Due **Monday, March 2nd.**  Late work will be penalized 20% per day, even if you are absent.
* The proposal will be worth 10% of the grade, so don’t treat it casually.
* If the proposal isn’t approved the first time, you will need to resubmit it for a reduced grade. You must attach the original proposal to any resubmissions.

In your proposal, you should:

* Describe your topic and state which type of bias you are investigating
* Describe how you will obtain your subjects (minimum sample size is 75 per question – 150 students total). This must be practical!! Your population needs to be HHS students.

**All data should be collected by the beginning of 3rd period on Monday, March 16th.**

**Power Point (90 points):**

* You will be given one day to work on your presentation in class.
* The presentation is due **Tuesday, March 17th**. Late work will be penalized 20% per day, even if you are absent.
* Presentation needs to be emailed to [amy.shaffer.hhs@gmail.com](mailto:amy.shaffer.hhs@gmail.com) by 8:00 am on **Tuesday, March 17th.**
* The key to a good statistical presentation is communication and organization. Make sure all components of the power point are focused on answering the question of interest.

 The power point should include:

* Title Slide (in the form of a question).
* Introduction Slide. In the introduction you should discuss what question you are trying to answer, why you chose this topic, and what your hypotheses are (what you thought would happen before you conducted your survey).
* *continued on back…*
* Data Collection Slide. In this slide you will describe how you obtained your data. Be specific. \*Type of Sampling you conducted\*
* Graphs and Summary Statistics Slide. Make sure the graphs are well labeled, easy to compare, and help answer the question of interest.
* Discussion and Conclusions. In this slide, you will state your conclusions. You should also discuss any errors you made, what you could do to improve the study next time, etc.

**Presentation:** Each pair (or individual) will be required to present the power point to the class. Both members need to participate equally and should be prepared to answer questions.

Presentations will take place on **Tuesday, March 17th and Wednesday, March 18th.**

**Examples of Successful Projects**

“Cartoons”

1. “Do you watch cartoons?” (90% yes)
2. “Do you *still* watch cartoons?” (60% yes)

“Milk vs. Orange Juice”

1. “Which do you prefer, milk or orange juice, as a breakfast drink?” (milk: 14%)
2. “Milk contains high levels of vitamin D and calcium. Do you prefer milk or orange juice as a breakfast drink?” (milk: 64%)

“Cheating”

1.   “Do you cheat in class?” (anonymous: 47% would)

1. “Do you cheat in class?” (not anonymous: 15% would)

“Football”

1. “Do you prefer to watch football or basketball” (60% football)
2. “Do you prefer to watch football or basketball?” (questioner wearing a football jersey: 70% yes)

**Make sure your topic is appropriate for a school project. You may NOT choose topics that involve illegal activities or anything related to sexuality! I will let you know when you turn in your proposal if I think your topic is inappropriate and you must choose another one.**

**If you choose to investigate the characteristics of the interviewer, you must do you survey separately, not together at the same time!!!**

**You are required to email a video of both people conducting the survey and gathering data. This is to be sent to** [**amy.shaffer.hhs@gmail.com**](mailto:amy.shaffer.hhs@gmail.com) **by Friday, March 13th. You will also need to keep track of a log of the teachers rooms you visit and the date that you visit them. This log will need to be signed by teachers and turned in to Ms. Shaffer by Monday, March 16th.**

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| **Rubric for Statistics Projects** | **Points Possible** | **Points Earned** |
| **Proposal:** | **10** |  |
| Clearly states topic and type of bias that you are investigating | 5 |  |
| Clearly describes how you will obtain your sample | 5 |  |
|  | | |
| **Introduction/Title:** | **10** |  |
| Title is clear and in the form of a question | 5 |  |
| Introduction clearly describes the question that is being investigated and prediction of results/outcomes | 5 |  |
|  | | |
| **Data Collection:** | **15** |  |
| The method of data collection is clearly described | 4 |  |
| The method of data collection includes appropriate randomization | 4 |  |
| The method of data collection includes measures to reduce bias/confounding/variability | 4 |  |
| The quantity of data collected is appropriate | 3 |  |
|  | | |
| **Graphs and Summary Statistics:** | **20** |  |
| Appropriate graphs are used (help answer the overall question of interest) | 4 |  |
| Graphs are accurate and neat | 4 |  |
| Graphs are easy to compare (same scale, colors, etc.) | 4 |  |
| Appropriate summary statistics are calculated (help answer the overall question of interest) | 4 |  |
| Summary statistics are calculated correctly (raw data is included so this can be verified) | 4 |  |
|  | | |
| **Discussion and Conclusions:** | **20** |  |
| Conclusion clearly and correctly addresses the question of interest | 10 |  |
| Appropriate generalizations are made with supporting evidence | 5 |  |
| Shortcomings and/or suggestions for improvement are discussed | 5 |  |
|  | | |
| **Overall Impression:** | **15** |  |
| Includes live action video of data collection | 5 |  |
| Presentation is visually appealing and shows effort | 5 |  |
| Question of interest is non-trivial and well-formed | 5 |  |
|  | | |
| **Oral Presentation:** | **10** |  |
| Presentation is well organized and thorough | 5 |  |
| Questions are handled appropriately | 5 |  |
|  | | |
| **Overall Grade** | **100** |  |