

Teacher Notes

Here are some thoughts about student projects based on past student projects:

- Randomly sampling humans is not practically possible.
- Randomly assigning humans to treatments is easily done.
- Practice good ethics when doing projects involving human subjects.
- Comparing consumer products usually makes for a good project.
- Help your students think about relevant populations when selecting random samples.
- Students may be confused about which inference procedure is appropriate. Prompt them by asking if they are measuring a categorical variable (which leads to proportions) or a quantitative variable (which leads to means).
- Get your students to brainstorm ideas as they go about their regular routine over several days. Then, have them share their ideas with their classmates, modifying them as needed.
- Don't let students move into data collection without a very clear, focused research question and an appropriate pair of hypotheses.
- Here are some examples of projects by my former students:
 - **Do drag suits really work?** (On average, no.) Drag suits are specially designed swim suits that are supposed to increase resistance/drag as swimmers move through the water, making it harder to swim. They are used in the hopes of making swimmers stronger.
 - **Do people text slower with cold hands?** (On average, they do.)
 - **Is your reaction time when seeing a stimulus faster than your reaction time when hearing a stimulus?** (No significant difference was observed.)
- Encourage your students to participate in the poster competition or the project competition sponsored by the ASA. You can find details here (or just do an internet search for “ASA Poster Competition for grades K-12” or “ASA Project Competition for grades K-12”).
 - ASA Poster Competition Due every year on April 1, with prizes up to \$300.
<https://www.amstat.org/education/asa-data-visualization-poster-competition-for-grades-k-12->
 - ASA Project Competition. Due every year on June 1, with prizes up to \$300.
<https://www.amstat.org/education/asa-statistics-project-competition-for-grades-7-12>