

Name: _____

Date: _____

Practicum Music to My Ears

In class, you designed and conducted the *Time Perception* experiment to find out if a person's perception of time changed when exposed to a stimulus. This experiment was designed so that it used random assignment, which is the process of using a chance device (e.g. dice, RStudio, etc.) to determine the placement of subjects into the treatment and control groups. By randomizing, you are removing other possible explanations for why the results happened the way they did.

Now we are asking you to design an experiment to determine whether doing math homework with music playing in the background affects student's test scores. Work with your team to design this experiment.

Submit a paper that clearly lays out your team's design plan. Be sure to include:

1. Descriptions of each element of the experiment by answering the following questions:
 - a. What is the research question we are interested in addressing?
 - b. Who are the subjects that would be participating in the experiment? How should we select them?
 - c. What could be possible treatments? What treatment do you choose and why? What will the control group do in your study?
 - d. Describe how to randomize the subjects into the treatment and control groups.
 - e. What is the outcome variable that we are measuring? Is it categorical or numerical? What other variables will you measure for each subject?

2. An analysis plan:
 - a. What statistical questions will you ask to address your research question?
 - b. What analyses (graphical and numerical) will you use to answer these questions?
 - c. An explanation of how you will determine whether the treatment affects test scores.