

### Warm-up:

At your table, go over your "Simpsons" homework. Discuss and compare your answers.

Once you are done, please take out your notes.

### AP Statistics

Chapter 4:  
Designing Studies

Day 5

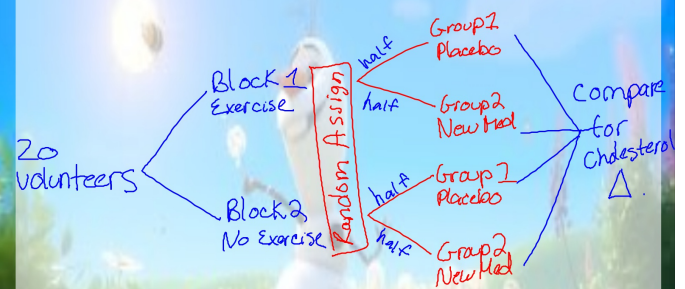
HW: Finish FRAPPY's

### Example

A pharmaceutical company wishes to test new medication it thinks will reduce cholesterol. A group of 20 volunteers is formed and each has his or her cholesterol level measured. After 6 months the volunteers' cholesterol is measured again and any change from the beginning of the study recorded. The researcher believes that regular exercise may influence the change in cholesterol level.

Create a randomized block design that takes account of subjects who exercise regularly. Create two blocks divided by whether they exercise or not. We are going to randomly assign half the volunteers in each block to the placebo group and the other half to the new medication. Apply the treatment and compare the results to see if there is a  $\Delta$  in cholesterol.

### Diagram



## Example

A pharmaceutical company wishes to test new medication it thinks will reduce cholesterol. A group of 20 volunteers is formed and each has his or her cholesterol level measured. After 6 months the volunteers' cholesterol is measured again and any change from the beginning of the study recorded. The researcher believes that the initial cholesterol level may influence the change in the overall cholesterol level.

Create a matched pair design that takes account of subjects, initial cholesterol level.

Group in pairs, with the two highest cholesterol, then group the people with the 3<sup>rd</sup> and 4<sup>th</sup> cholesterol until I have 10 pairs. We are randomly going to assign the medication to one person in the pair while <sup>the other</sup> person gets the placebo. Compare results for  $\Delta$ 's in cholesterol.

## Diagram

