

Name: _____ Hour: _____ Date: _____

Lesson 4.2: Day 2: Would you fall for that?



Would you fall for the placebo effect? Watch this [video](#), then complete the rest of the questions.

1. Why do you think the people in the video got stronger?

Similar to the video, Mrs. Gallas wants to use a beverage to test the affect that caffeine can have on heart rate. Here is an initial plan:

- measure initial pulse rate
 - give each student some caffeine (Coca-Cola)
 - wait for a specified time
 - measure final pulse rate
 - compare final and initial rates
2. What are some problems with this plan? What other variables will be sources of variability in pulse rates?
 3. Go back up to your list in #2 and propose a solution to each problem.
 4. Design an experiment to test the effect that caffeine has on heart rate.

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Lesson 4.2: Day 2: Designing Experiments

Big Ideas:

Check Your Understanding:

1. Many utility companies have introduced programs to encourage energy conservation among their customers. An electric company considers placing small digital displays in households to show current electricity use and what the cost would be if this use continued for a month. Will the displays reduce electricity use? One cheaper approach is to give customers a chart and information about monitoring their electricity use from their outside meter. Would this method work almost as well? The company decides to conduct an experiment using 60 households to compare these two approaches (display, chart) with a group of customers who receive information about energy consumption but no help in monitoring electricity use.
 - a. Explain why it was important to have a control group that didn't get the display or the chart.
 - b. Describe how to randomly assign the treatments to the 60 households.
 - c. What is the purpose of randomly assigning treatments in this context?
 - d. Create an outline showing a completely randomized design for the experiment.