

Thoughtful Drill Experimental Design

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For each of the following questions, outline how you could use an A/B test to find an answer. Be sure to identify all five key components of an A/B test.

1. Does a new supplement help people sleep better?

- a. Two versions- control version would be people not using the supplement, and a test version would be those people using it.
- b. Sample- The two samples should have people following the same daily routines, and common habits, except that one group takes the supplement, and the other doesn't.
- c. Hypothesis- The group taking the supplement gets better sleep.
- d. Outcome- Evaluate using key metrics such as hours of sleep, quality of sleep, and whether the people could dream.
- e. Other Measured Variables- Think about side effects. Drowsiness from the supplement, inability to sleep, how tired was the group taking the supplement etc.

2. Will new uniforms help a gym's business?

- a. Two versions- Have a few people try the new uniforms, and the others maintain the old one.
- b. Sample- Samples should have both female and male trainers, of all ages, and different sizes (ideally two of each minimum for both uniform designs).
- c. Hypothesis- "The new uniform attracts more clients"
- d. Outcome- The outcome should be measured by the referrals received and membership renewals in the month that the uniforms are introduced.
- e. Other Measured Variables- Do the customers train better when their trainers dress smarter/have newer uniforms?

3. Will a new homepage improve my online exotic pet rental business?
 - a. Two versions- Old homepage for one week, and new homepage during the next.
 - b. Sample- Determine if the samples from the two groups have similar metrics (both groups want to look at the same type of pets, the same demographic is looking online).
 - c. Hypothesis- "The new homepage improves the business"
 - d. Outcome- Outcome is determined by the click-through-rate and conversion rate the new website brings in.
 - e. Other Measured Variables- Track time of the day, day of the week, the costs of the pets, manage an analytics service.

4. If I put 'please read' in the email subject will more people read my emails?
 - a. Two versions- Same email to same person, but set within a time apart from each other (One with the please read).
 - b. Sample- Make sure it's the same email. Control Version should not contain please read.
 - c. Hypothesis- "Hypothesis makes people read the email"
 - d. Outcome- The outcome will be determined if the person responds to the email (specify to reply in both emails).
 - e. Other Measured Variables- Make sure it is sent at the same time (weekday when the person maybe busy at work).