

3 Principles of Experimental Design

1. Control - Keep things the same to minimize variability and confounding variables
ex: time of day
location
2. Randomization - Assign experimental units to treatments randomly
3. Replication - use enough experimental units to reduce chance variation

Other things to consider:

- control group - provides a baseline for comparing the effects of treatments
- placebo - a fake treatment
↳ placebo effect: the subject is affected even though the treatment was fake
- double-blind - when neither the subject nor the experimenter knows which treatment was given
- single-blind - when one knows and the other doesn't.

*want results to be statistically significant : when the effect is so large that it would rarely occur by chance

Types of Experimental Design

- Completely Randomized Design - when ALL experimental units are randomly assigned to a treatment (All drawn out of a big hat)