Topic: Designing Experiments **Name**: _____

What am I learning today?

_____

_____

Notes

Vocabulary

Experiments – Intervenes by imposing some _____

Subjects – _____ studied in an experiment

Clinical Trial – Experiment that studies the effectiveness of _____ _____ on actual patients

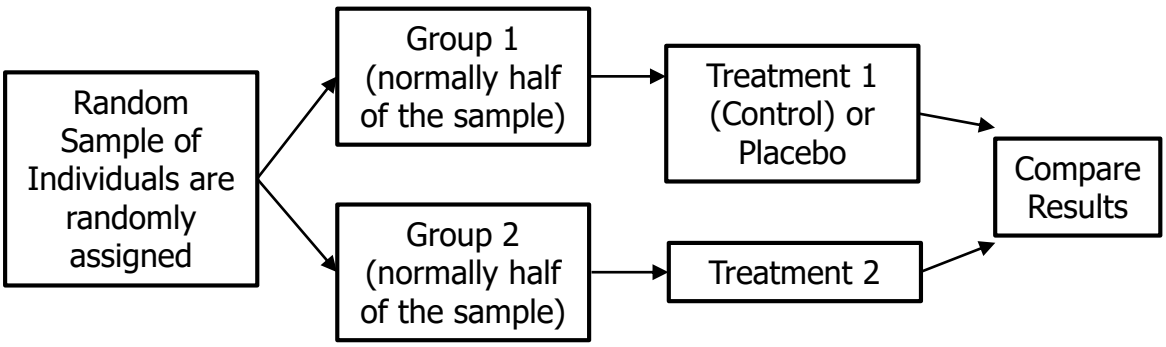
Treatment – Any specific experimental condition applied to subjects

Placebo – A dummy treatment with _____ active ingredients

Placebo effect – When patients respond _____ to the placebo

Randomized Comparative Experiment – Subjects are _____ assigned treatment(s) and compared at the end

Control Group – Allows us to control the effects of _____; sometimes receives a placebo or in clinical studies often given product already out on the market



Statistical Significance – An observed effect so large that it would _____ occur by chance

Principles of Experimental Design

1. **Control** – The effects of _____ variables.
    a. Use a placebo or a control group
2. **Randomize** – Use _____ to assign subjects to treatments
    a. Random Number Table or generator
3. **Use enough subjects** – In each group to reduce _____ in the results
    a. Remember: more individuals → smaller margin of error

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Main Ideas/ Questions

Example

Notes

Example pg. 266 6.10

Turkeys raised commercially for food are often fed the antibiotic *salinomycin* to prevent infections from spreading among the turkeys. *Salinomycin* can damage the turkey's internal organs. A researcher believes that adding Vitamin E to the turkey's diet may prevent internal damage. He wants to explore the effects of three levels of Vitamin E added to the diet of turkeys along with the usual dose of *salinomycin*. There are 12 turkeys available for the study. At the end of the study, the turkeys will be killed and the internal organs examined under a microscope.

a. Give 2 randomized comparative experiment designs with a control group.

b. Use the line below to start the random assignment required by the design with a control group.

03190 32405 04170 29669 84207 90715 21051 21382 011623