The Scientific Method Study Guide

The Scientific Method

1. Identify the _____ to be solved

2. Make _____about the problem

3. State the _____

- Predicating what you think the answer to your questions will be; ends in a period.

4. Test your hypothesis (experiment)

5. Collect _____from the experiment

6. Analyze the data/results from the experiment

7. Form _____and write the answer, if you found one, to the original problem

Hypothesis: a statement you can prove true or false based upon the results of your experiment.

- Ends with a period.
- H = IV + DV (the + sign is a verb)
- Example from "George & Salsa" → The salsa increases fish growth.

Independent Variable (IV): the variable that is being tested

- It is changed/manipulated by the scientist (you!)
- Example from "George & Salsa" → salsa

Dependent Variable (DV): the measured response to the independent variable

- This is how scientists get DATA
- Example from "George & Salsa" → fish growth

The Experiment (testing the hypothesis)

- _____**:** all possible variables of an experiment that are kept the SAME/constant throughout – they do not change
  - Example from "George & Salsa" → same number and kind of fish, same water, same temperature, same plants, same salsa, same amount of time, same fish tanks
- _____**:** a setup of the experiment that does NOT get the independent variable
  - Example from "George & Salsa" → setup without the salsa
- _____**:** to increase the statistical significance of the experiment, it is repeated at least 5 times