



POSTER HYPOTHESIS

Purpose: All scientific research is designed to address a specific a specific research topic or hypothesis. For this submission, you must construct a hypothesis relevant to the topic assigned to your lab section. Your class' hypothesis will be the question that drives the rest of our poster work for the semester.

Points: Your individual contributions will be scored out of five possible points.

Instructions: A research hypothesis is essentially an educated guess based upon prior observations. It is a rational explanation of a single event or phenomenon based upon what is observed, but which has not been proved. Most hypotheses can be supported or refuted by experimentation or continued observation.

Your Hypothesis Must Be "**Testable**" - Science proceeds by making observations of nature (experiments). If a hypothesis does not generate any observational tests, there is nothing that a scientist can do with it. Arguing back-and-forth about what should happen, or what ought to happen, is not the way science makes progress.

Your Hypothesis Must Be "**Falsifiable**" - A scientific hypothesis must be testable, but there is a much stronger requirement that a testable hypothesis must meet before it can really be considered scientific. This criterion comes primarily from the work of the philosopher of science Karl Popper, and is called "falsifiability".

Your Hypothesis Must Be "**Practical**" – We have a limited budget, technical facilities, and time this semester. You should select a hypothesis that could feasibly be carried out in our lab.

You should create a short, double-spaced document using Microsoft Word™. Use one-inch margins and 12-point Times New Roman font. On a single page, write a short (one to two sentence) research hypothesis. You may choose to phrase it as either a question or a statement. Keep the three qualities defined above in mind. Put your name on the back of the sheet and turn it in on the due date.

Due Date: Your hypotheses are due in lab on September 15, 2010.

Grading Criteria: Your submission will be scored using the following rubric.

| Score | Description |
|----------|---|
| 5-points | The research hypothesis is clearly defined and is both easily testable and falsifiable. The nature of the hypothesis makes it practically feasible with our laboratory resources. |
| 4-points | A research hypothesis is provided but has potential problems with testability or falsification. The nature of the hypothesis makes it practically feasible with our laboratory resources. |
| 3-points | The research hypothesis is clearly defined and is both easily testable and falsifiable. However, the hypothesis may require work that exceeds the capabilities of our lab resources. |
| 2-points | A research hypothesis is provided but has potential problems with testability or falsification. Furthermore, the hypothesis may require work that exceeds the capabilities of our lab resources. |
| 1-point | A vague hypothesis is provided. There would be significant difficulties in testing or disproving this question. In addition, the work fall far outside the scope of what can be accomplished in our laboratory. |