An essential part of science is the ability to analyze other’s experiments and learn from their successes and mistakes. In reality, in a science-related career (or major, in college) before you can design an experiment to solve a specific problem, you must read up on the experiments that have already been done in that field. That way, you can design your experiment to solve a problem that hasn’t been done before, while capitalizing on what others have already found out.

**Your Mission: You will use all resources available to you to create a well-rounded research presentation on a physics-related topic of your choice.**

* You must present material from *at least* **three** sources.
* *At least* one of those sources must be an **academic journal**.
* ALL sources must be **reliable** – IE, NOT Wikipedia   
  (although, Wikipedia is a good place to get primary sources from!)
* Grammar counts. Proofread!
* You will present your findings in a 4-6 minute presentation. If presenting to the group is a problem for you, we can find a time for you to present individually.
* You should have a visual aid (powerpoint, poster, etc) though it should not overpower your presentation.
* You can create a 4-6 minute video with all the included information and submit that as your presentation if standing in front of the class stresses you out.

Topics should be:

* Somehow related to physics (but not necessarily a topic we’ve covered in depth)
* Can be current event related
* Can relate to one of your interests outside of physics class

Suggestions:

1. Pick a specific topic. While the task seems daunting, there is an overwhelming amount of information out there in the world – if you narrow it down to a specific topic, you will have less to cover, and you can analyze it more in depth.
2. Start broad. Introduce your audience to the topic and provide background information. Assume your audience knows very little about what you will be talking about.
3. Analyze the science others have performed. State why it is or isn’t reasonable, in your opinion. Feel free to offer suggestions to make it more reliable.
4. Provide a well-rounded summary and analysis of the topic you have chosen. You may offer ideas for what the ‘next step’ for experimentation in your topic could be.

Your goal is to **find*,* synthesize, and present** information on any physics-related topic of your choice.

Possible topic ideas:

http://www.hesston.edu/academics/departments/physics/research-projects/  
http://physics.uchicago.edu/research/

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Excellent | Satisfactory | Fair | Needs Improvement | Points Received |
| Quality of Research  (40pts) | ∙Sources reliable  ∙All information relevant to topic  ∙Sufficient information provided to support all elements of topic.  ∙Research in-depth and the beyond the obvious, revealing new insights gained. | ∙Sources mostly reliable.  ∙Most information relevant to topic.  ∙Sufficient information provided  ∙Research of sufficient depth. | ∙Source reliability questionable.  ∙Some information relevant to thesis.  ∙Information provided to support some elements of topic  ∙ “Surface research” | ∙Sources not reliable  ∙Too much "quoting"  ∙Did not research the questions that needed to be answered.  ∙Incomplete or no analysis of information |  |
| Content  (40pts) | ∙Support for topic is complex, complete, & in-depth.  ∙Writer involved with subject, not merely doing an assignment.  ∙Clear and appropriate organization, with effective transitions, introduction, and conclusion  ∙Gave a complete analysis of topic. Reader was not left wondering on any aspect | ∙Support for topic sufficient, but lacking in depth or complexity.  ∙Organization, transitions, introduction, and conclusion slightly lacking clarity and/or appropriateness.  ∙Mostly complete analysis. Reader may have some questions/lacking some detail. | ∙Support for topic barely sufficient, and/or greatly lacking in depth & complexity.  ∙Organization, transitions, introduction, and conclusion lacking clarity and/or appropriateness.  ∙Reader left with several questions/very little detail. | ∙Insufficient support & lacking depth of topic research.  ∙No or very little organization. Transitions, induction & conclusion are absent or have no clarity.  ∙Little to no detail. Reader has many questions |  |
| Citations  (10pts) | ∙All sources properly cited in works cited.  ∙No more than 1 error in format or punctuation.  ∙4 or more sources listed. | ∙All sources properly cited in works cited.  ∙2 errors in format or punctuation.  ∙3 sources listed. | ∙Not all sources properly cited in works cited.  ∙ More than 3 errors in format or punctuation.  ∙2 sources listed. | ∙No citations. 0-1 sources.  ∙Excessive errors in punctuation. |  |
| Presentation Style  (10pts) | ∙Consistent and appropriate voice.  ∙Sophisticated and precise word choice.  ∙Professional & appropriate visual aids | ∙Voice mostly consistent and appropriate; fairly effective word choice.  ∙May have needed additional visual aids for audience comprehension. | ∙Voice somewhat consistent and appropriate.  ∙May have been hard to hear/understand  ∙ Visual aids hard to see, or understand. | ∙Voice not consistent or appropriate.  ∙Little correct word choice.  ∙Hard to hear/understand  ∙Visual aids missing or unrelated. |  |

Total Points Received: \_\_\_\_\_\_\_\_\_