You will pair up with another physical science student and research a topic related to the physical sciences. The results of your research will be presented approximately six weeks from today during a 20-minute period of class time. By the end of class today you and your partner must select one of the topics from the list attached to this handout. Each topic may only be researched by one pair of students, so you will be choosing topics in a randomly selected order. Be sure you pick several topics for consideration since your first choice may be gone when it’s time for your group to pick.

The following must be handed in one week before the in-class presentation. No late material will be accepted:

1) Abstract – A one paragraph summary of the main research findings
2) Bibliography - A detailed list of sources used in your research
   a) Multiple sources (not your textbook) must be used
      i) At least one in-print publication
      ii) At least one reputable internet source
   b) The reference for any graphics or quotes used during your presentation must be cited
3) A list of your technical needs (e.g., dvd player, software, overhead, …)

The presentation should include what you have learned about the topic during your research, and your personal thoughts and opinions about the importance and relevance of the topic. The presentation must show depth of investigation, and communicate to the audience something about the topic that is not commonly known. The goal of your presentation is to teach your classmates about the topic you are researching.

Both you and your partner must participate equally in the presentation. The format is up to you, but it should go beyond just talking to your audience. An overhead and a computer presentation station (Powerpoint, movies, graphics, dvd’s, …) will be available. You may also use handouts or other materials you wish to bring in. Take care that you don’t fall into the trap of simply reading from Powerpoint slides. Also, if you use videos, then the commentary must be muted. In other words, you need to do the talking.

Your instructor and fellow students will evaluate the presentation. Audience members, working in their presentation groups, will complete a score sheet. An example of the score sheet is attached to this handout (be sure you know what you will be graded on). Your final score combines the evaluations of both fellow students and your instructor.

Presentations will be given over several days. You should be prepared to give your presentation on any of these days. If your group is unable to make a presentation when called upon, then you must be prepared to give your presentation on the following day. These late presentations will have their scores reduced by 10%. If your partner drops the class before the day of the presentation then you must continue on your own. Choose your partner carefully.

Note, each day of presentations will be graded as a normal lab day (i.e., each day of scoring the presentations is worth 5 points).
## Presentation Score Sheet

Each presentation group will also score the other presenters. Use the following process when scoring most of the following criteria. If the task has been completed, all points (2) are awarded. No points are awarded if the task is not complete. The lone exception is the second criterion that is scored from 0 to 10.

<table>
<thead>
<tr>
<th>Category</th>
<th>Scoring Criteria</th>
<th>Possible Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content 16 points</td>
<td>There is an obvious introduction and conclusion that arouses audience interest.</td>
<td>0 or 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The body of the presentation successfully “teaches” the audience about the researched topic. (i.e., How much did you learn?)</td>
<td>0 - 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information is presented in a logical sequence.</td>
<td>0 or 2</td>
<td></td>
</tr>
<tr>
<td>Presentation 10 points</td>
<td>Both presenters seem equally involved in the presentation and preparation.</td>
<td>0 or 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The presenters speak clearly and are easily understood.</td>
<td>0 or 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>At least one visual aid is used for support.</td>
<td>0 or 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The presentation shows obvious preparation and a practiced delivery.</td>
<td>0 or 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The length of the presentation is within the assigned time requirement.</td>
<td>0 or 2</td>
<td></td>
</tr>
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**Presentation Points:** 26

**Turned in Work:** 4  

**Total Points:** 30
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**Presentation Points:** 26

**Turned in Work:** 4

**Total Points:** 30
Project Topics

1) What are hybrid cars?
2) What is cold fusion?
3) What is string theory?
4) What is chaos theory?
5) What are Fractals?
6) What is nuclear power?
7) How does ____________ electricity production work? (pick one)
   a) Solar
   b) Geothermal
   c) Tidal
   d) Biomass
   e) Ocean Wave
8) What is a hypersonic plane?
9) What is a transistor and what is the importance of its invention?
10) What is a semiconductor and what is its importance in technology?
11) How does a radio broadcast get from a radio studio to a radio?
12) How does a cellular phone signal travel from one phone to another?
13) What is satellite radio?
14) How does GPS work?
15) How does a metal detector work?
16) How does a stud finder work?
17) What are arguments against the scientifically accepted theory of Earth’s history?
18) Describe the birth, the life and the death of stars.
19) Describe the formation of the Solar System.
20) Describe the recent controversy regarding the number of planets in the solar system.
21) What are constellations?
22) What is the history of the Universe (not including the solar system)?
23) How do we know how far away stars are?
24) What are wormholes (astronomy)?
25) What are the chances of a Comet/Asteroid hitting the Earth and what would the effect be?
26) Is there life elsewhere in the universe?
27) How does a DVD/CD disk transfer/store data?
28) What does all that stuff on a weather map mean?
29) What are tsunamis?
30) What are hurricanes?
31) What are earthquakes?
32) What are volcanoes?
33) What is global warming?
34) What is a laser?
35) What is an electron microscope?
36) What is a scanning tunneling microscope?
37) What is an MRI?
38) What is Ultrasound?
39) What is a particle accelerator or more specifically what is the Large Hadron Collider (LHC)?
40) How does a touch screen work?
41) How does an LCD display work?
42) How does an air conditioner work?