

## **To Teach is to Learn: Final Project in Env/Intro Geology**

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**Environmental Geology**  
**Env/Geol 105Q**  
**Final Project**  
**Due for presentation on December 5<sup>th</sup>, 2007, 1:30-4:20 pm**  
**10% of course grade (project, presentation, write-up)**

Curriculum Development  
Pennsylvania Department of Education  
No Child Left Behind Initiative  
St. Suthozur St.  
Harrisburg, PA 15685

Silber & Smith Earth Educators  
No Rock Left Unturned Avenue  
Geology Rocks, PA 24854

October 17, 2007

To Silber & Smith Earth Educators:

We thought you would be interested in information about an upcoming contest we are holding. In attempting to further expand and develop our teaching tools for the state of Pennsylvania, we are holding a contest in which persons or groups can submit an educational demonstration about a certain topic. In your case, the topic would be “Environmental Geology” and should be applicable to students learning in Pennsylvania. We are looking for fun *science-based demonstrations* that educate while engaging the students in the material and/or explain a process/situation.

Demonstrations may be proposed, constructed, and presented by individuals or groups of two people. Proposals should be *geared to older students*, grades 9-16 (high school/college). Shorter activities (~10 minutes) are preferred. Please keep in mind how much time an educator would like to spend on that topic; an educator may not want to sacrifice an entire class period on some small detail.

The contest will held at 1:30 pm on Wednesday, December 5<sup>th</sup>. Some light refreshments will be provided. You will have ~10 minutes to present your activity and its effectiveness will be judged by a jury of your peers, an evaluator from our own office (L. Joseph), and an environmental educator for one of the local school districts (M. deAngeles). For your presentation, you may conduct the actual activity (be sure to explain it’s purpose and goals) or, if your activity is much longer than 10 minutes, you may describe the activity you have set up (and all materials necessary to enact this activity or demonstration should be prepared and ready for evaluators to examine later). The effectiveness of your presentation itself will be considered in the judging. In order to participate in the contest, you must also serve as a judge on other projects. In addition, you must submit a write-up of your proposed activity (details provided in the attachment) and be sure to reference any sources you used in your research to create your project. Only one write up should be submitted per group, however, both partners need to submit peer evaluations.

Projects themselves will be evaluated on concepts such as complexity, ability to educate as well as engage the students, appropriateness for age level, incorporation of difficult concepts in useable format, your effort in creating the project, clarity of project purpose, appropriate representation of the material, effectiveness of your presentation and the thoroughness/helpfulness of your write-up. A more detailed version of project criteria is included in the enclosed addendum.

A short description of the project/topic, list of group members, a project title and a group name MUST be submitted to L. Joseph by November 26<sup>th</sup> so that an appropriate contest program may be constructed.

Most schools will not have access to many supplies, so activities/projects should not be expensive to create/enact. However if you need to purchase or borrow some small supplies, please contact our associate L. Joseph.

Demonstrations that have previously been submitted may not be used unless they vary sufficiently from what has been presented previously. We recommend that you investigate typical Geology textbooks for ideas. You will find some different versions in Pf 112 on the bookshelf near office 112E.

Winners will receive recognition as top educators from the PA Department of Education and we hope that your project will be used in many classrooms in the future!

Thank you very much for your time. We are looking forward to seeing the results of your endeavors! Please see addendum for more information.

Sincerely,

*Bocud G.P. Jolimnors*

Bocud G. P. Jolimnors  
Education Coordinator/Outreach  
PA Dept of Ed

**Environmental Geology**  
**Env/Geol 105Q**  
**Final Project Addendum**  
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To Silber & Smith Earth Educators:

This serves as the addendum with the detailed educational activity contest information regarding Environmental Geology. Below are the promised 1) necessary components of the write-up and presentation and 2) the specific criteria over which these demonstrations will be judged as we currently have listed. We very strongly recommend that you read both letters thoroughly to ensure that you have addressed all the different components provided in our first letter and in this supplement to avoid disqualification of your proposed activity.

Group names and activity topics must be submitted on or before **Monday, November 26<sup>th</sup> at 11 am** so that the official evaluator (L. Joseph) can plan the order of presentations appropriately. Any changes must be submitted by two days prior to the presentation.

**Presentations**

Your presentations should be eight to ten minutes in length (no more, and not much less). There will likely not be enough time for everyone to present if presentations are any longer, so you may be cut-off at 10 minutes regardless of completion. If working with a partner, both members of the group need to participate in the presentation.

You should be sure to include the names of the presenters, the name of the activity, and a brief description of the project goals and the teaching intentions (what concepts are you trying to teach?) and the skills the students will develop from your demonstration. Be certain that you give your audience enough information to understand the purpose of the activity. You may either enact the activity or demonstration (using the rest of the evaluators as the “class”) or you may describe your activity/demonstration.

Presentations will also be evaluated on effectiveness. This includes enthusiasm, voice inflection, clarity, organization, appropriateness, knowledge of speakers, and timing of your presentation.

We recommend that you do not read your presentation from a paper or from your powerpoint slides, although glancing at notes/note cards are welcome.

You are welcome to prepare **short** handouts for the group of evaluators with a quick background summary of your activity/demonstration that includes a few sentences about the geologic concept your activity addresses, what your activity demonstrates, and what the students should get out of it. This is not required.

### **Formal write-ups**

Formal write-ups are due at the time of your presentation on December 5<sup>th</sup>, 2007. They should include:

- A) A formal cover letter to us that includes as least the name(s) of the people that worked on your project (there should be, at most, two names), a name for the activity and a one-sentence summary of its purpose.
- B) Age-range and the number of students that the activity/demonstration is designed to teach and the amount of time that the educator should plan into their classes for this activity. Also include an estimate of the amount of time (before the actual class) and funding that the educator would to set up this project. This information may also be included with in the cover letter.
- C) A separate “materials needed” list for the educator. Below the list, include a description for the educator on how to construct and enact the project. Assume that this educator will NOT see your activity on the day of the contest, but will download your description from a website at a later time.
- D) On a separate page(s), 12-point Times font, 1”-margins, single-spaced, please submit a *thorough* explanation (in your own words, with appropriately cited references as necessary) of the geology concepts that are being presented and why they are important to present. For your audience, assume a background knowledge of someone with no geology classes/experience. This description should be detailed and descriptive enough to bring your audience up to the level in which they could comfortably teach about your topic (and answer general questions about it). You are welcome to include figures/pictures/drawings if they are helpful. Be sure to include how your chosen activity demonstrates the concepts that you are describing and which concepts you believe the students will learn. ***This section will weigh heavily in the evaluation of your project.***
- E) Please use a bibliography style (no footnotes) in APA style (see [http://myrin.ursinus.edu/help/resrch\\_guides/cit\\_style\\_apa.htm](http://myrin.ursinus.edu/help/resrch_guides/cit_style_apa.htm) for the details of this citation style within the text and be sure to cite any references used for information or ideas.
- F) In addition to cited references, be sure to include a list of sources of ideas for your project, if any.
- G) Anything else that will help us judge or provide the educator with information.

### **Other necessary submissions**

On the day and time of your presentation, you must also submit:

- A) Any presentation materials you used (handouts, powerpoints (should be sent to L. Joseph prior to the presentation), etc.)).

- B) Your activity if it requires any pieces. This should be submitted to L. Joseph in a clearly marked folder (with names of submitters and project name) or box as appropriate.
- C) A self-peer evaluation if you have worked with a partner. This should be submitted in a separate envelope directly to L. Joseph in an envelope that is signed and sealed with your signature. This **ABSOLUTELY** needs to be submitted at the time of your project. Without your peer evaluation, your project will not be evaluated at all.

**Judgment Criteria:**

*During contest presentations (by official evaluator and group of colleagues):*

- A) Complexity of the concept addressed by this activity and simplification of the concept to the level of the students. Easy concepts will not be given as many points as more complicated concepts.
- B) Creativity of proposed activity.
- C) Probability of teaching effectiveness and increased engagement of the students.
- D) Completeness of proposed activity.
- E) Appropriateness of activity for concepts and amount of class time needed, etc.
- F) Is activity “ready-to-go”? The requirements of this activity are that even if it is not demonstrated during the 10-minute period, it should be **ready** to be performed. Any supplies should be placed in a folder/box, etc and left with the official evaluator.
- G) Presentation style (Enthusiasm? Thoroughness? Clarity? Appropriateness?).
- H) Time of presentation (should be no longer than 8-10 minutes, but not much less either). Presentations will be timed.
- I) Use of references within presentation as appropriate (i.e. where did you get the images you used on powerpoint?)

*After contest presentations only by official evaluator*

- J) Approximately equal weight will be given to the completeness/level of the write-up based on the concepts presented in the first page of this contest supplement.
- K) In a group project, each individual effort will also factor into the grade. This is determined by impression of official evaluator and supported by peer and self evaluations.
- L) The written content will assist in determining the complexity of the concept and the project overall (similar to criteria above)
- M) The written content will also be evaluated on at least the organization, depth of preparation, thoroughness of addressing the required parts of the assignment, concise and appropriate wording, the form (spelling, grammar, etc), accuracy in submitting required parts (i.e. list of materials, number of students appropriate for, etc) as outlined above, appropriate referencing and citation. We appreciate effort, thoroughness, and care in this portion.

**Other reminders:**

You may either enact your activity/demonstration (you can use the colleague evaluators as your “classroom”) or you may describe your proposed educational project if your project will take longer than 10 minutes to describe and enact (or you can do a little bit of both.) Regardless, proposed projects should be ready to enact.

You may not use activity/concepts already presented [in class] unless significant further knowledge is demonstrated/obtained and the rationale for doing so is clear.

This activity should be of your own creation. While you can use many resources to assist in your creation, you may not rely primarily on pre-made teaching activities from the web or any other resources. Any resources that you obtain ideas from should be listed in your bibliography. It would ***not be fair for you to receive credit for an activity that was not yours***, although a creative amalgam of activities (with appropriate citation) is certainly an option.

We highly recommend that you test out your proposed activity to troubleshoot before the actual official presentation. As well, we appreciate if you practice your presentations beforehand and restrict the presentation to 8-10 minutes (very quick).

You may work individually or in a group of two people. If you work in a group, peer evaluations **MUST be submitted that same day** to be considered as a completed project.

A sample evaluator form is provided below. This was used in past contests and a similar form will be used for colleague evaluation of your project during your presentation. As well, the questions to answer for a self/peer evaluation are also attached.

Thank you very much for your attention. We are excited about this contest and are eager to see what each group proposes!

Sincerely,

*Kiley Nenipest*

Kiley Nenipest  
Education Coordinator/Outreach  
PA Dept of Ed

*Concepts to add:*

No dangerous explosions or dead animals (fish included)

This is not a traditional presentation (it should not center on the powerpoint, although a powerpoint may be helpful in presentation to the class)

Cite references on all images used within text or powerpoint

## Sample Forms

Below is a sample of a past colleague evaluation form used in evaluation of the presentation and project.

Evaluators Name: \_\_\_\_\_

Presenter Name(s): \_\_\_\_\_ Project Name/topic: \_\_\_\_\_

### Judgment Criteria 1 = lowest; 5 = highest/best

- 1) What does this activity demonstrate?
- 2) **Complexity** of the concept addressed by this activity and simplification of the concept to the level of the students.  
Easy concepts will not be given as many points as more complicated concepts.
- 3) **Creativity** of proposed activity.
- 4) **Probability** of teaching effectiveness and increased engagement of the students.
- 5) **Completeness** of proposed activity.
- 6) **Appropriateness** of activity for concepts and amount of class time needed, etc.
- 7) Is activity **“ready-to-go”**? The requirements of this activity are that even if it is not demonstrated during the 10-minute period, it should be **ready** to be performed.
- 8) **Presentation style** (Enthusiasm? Thoroughness? Clarity? Appropriateness?).
- 9) **Time** of presentation (should be no longer than 10 minutes). Presentations will be timed.

Overall comments:

Below is a sample of the peer evaluation form if you work with a partner on this project.

### Group Work: Self and Peer Evaluations

#### Things to keep in mind when evaluating “perceived effort:”

- Effort does not equal success, but they are linked! (i.e. Some lines of inquiry are important even if they lead to dead-ends).
- Did the person show up when they were supposed to?
- Did the person contribute ideas, suggestions, project direction, discussion, and/or solving problems? Did they show initiative in the project by taking on responsibilities and completing them?
- Did the person work well towards the team goal?
- Number of responsibilities the person committed to for this class? Were they completed in a timely fashion (as much as possible)? Were those responsibilities fulfilled? Were they fulfilled in a satisfactory fashion?
- Did the person willingly go above and beyond (your) expectations?
- Were they cooperative and prepared for meetings? Have a positive/negative/neutral attitude towards the team goal? Were they difficult to contact?
- Did the person make all the effort that was possible for them?

It is important to provide **constructive** criticism so that we improve ourselves and provide others with ideas to support their efforts.

- 1) Your name:
- 2) List the person you worked with:
- 3) In evaluating effort (see criteria above) how would you rank yourself (1 the worst and 5 the best) **and why**?
- 4) In evaluating effort using the same criteria, how do you rank your partner? Be sure to give their name, the assigned rank, and explanation why you assigned that rank for each member. You do NOT need to rank them against each other.