

Poster Project for an Introductory Physical Geology Course

An original term project by
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Overview

This project is modeled after scientific meetings where scientists exchange information via both oral and poster presentations. The challenge is to present varied and interesting data accurately, concisely, and attractively in a limited format. For the project, each student prepares a poster showing an analysis of geological data using a spreadsheet. No oral presentation is involved. Posters are graded on their geological content, use of a spreadsheet, use of graphics, and organization.

Context

- This undergraduate course on physical geology is intended for students who are not planning to major in science, although some geology majors have come out of the class. The course also satisfies two general education requirements – one for physical science and one for quantitative reasoning.
- The skills and concepts that students must have mastered include knowing how to form a hypothesis, finding data online, and using Microsoft Excel to handle large datasets and make graphs.
- This is a term-long project that culminates in a poster session held during the scheduled final exam time.

Goals

- The content and concept goals for this activity are to find an Earth science-related dataset online, download/import/copy at least 50 data points into Excel, and create a graph using the data.
- Higher order thinking skills goals for this activity include formatting the graph appropriately, writing a 1-page summary that describes the data and interprets the graph and its significance, selecting at least one map and one image to illustrate the topic, and compiling at least three references.
- Other skills goals for this activity involve organizing the elements logically and attractively on the poster, developing an informative title, and evaluating 5 posters created by classmates.

Students receive this page and the following page on the last day of class.

Poster Display and Review Session

Introductory Physical Geology

Keep these instructions (do not hand in with exam).

The poster project replaces a comprehensive (or cumulative) final exam. Posters will be displayed and evaluated during the final exam time:

Date, Time, and Location for Poster Session

- Use the elevators (NW corner), or take the west stairs in the north part of the building.
- The room is usually very warm, so dress in layers.
- Bring a notebook or clipboard (hard surface to write on), a pen or pencil, and (of course) your poster. There is nothing else you need to bring.

For the Poster Session, you will pin your poster to a bulletin board for display. There is no oral presentation involved. Instead, you will select and review five (5) posters created by your classmates. There will be a handout with one page of questions for each poster you review.

Your overall project grade consists of three parts: Project Elements 1-4 (topic, graph, summary, and references), Project Sample Quizzes 1-10, the poster itself, and reviews of other students' posters. Your reviews affect your own grade but not the grades of the posters you choose to review. The instructors grade all posters on their geological content, use of a spreadsheet, use of graphics, organization, and appearance.

Basic Requirements

- Title
- Data table with 50 points
- One graph made with Excel
- One map
- Three sources/references (no particular format for citations)
- One picture
- One-page summary describing:
 - What the data represent
 - Where and when the data were collected
 - What is illustrated by the graph
 - What is the meaning/value of the data and graph?

Putting Your Poster Together

- Put **all elements on the front** of your poster, but put your **name on the back**.
- Use standard, lightweight poster board with dimensions 22x28 inches. During the Poster Review, you will pin your poster to a display panel, so do not use foam-core board or corrugated cardboard. Do not use a folding stand-alone poster board. Points will be deducted for the wrong type of board.
- All text on your poster should be readable from a distance of ~1 meter (3 feet), so choose a font such as Verdana or Geneva, 18-point size.
- All graphs, pictures and maps must have figure numbers and captions, and the graph(s) should have titles and axis labels.
- Do not arrange any element so that it extends far beyond the edge of the poster board. About 1 cm of overhang is acceptable for artistic effect, but not more.

There are sample posters on display in the Geology building. If you have any questions, contact your instructor.

Conflict Exam

An alternate time is tentatively scheduled for **Date and Time**. You **must** receive approval for the conflict time. Check with your instructor to verify.

GRADING RUBRIC FOR POSTERS

<u>Content</u>	Excellent	Good	Fair	Poor	None
Title (You may be creative here!)	_____	_____	_____	_____	_____
Table (50 data points)	_____	_____	_____	_____	_____
Graphs (1 required)	_____	_____	_____	_____	_____
Summary (1 page)	_____	_____	_____	_____	_____
Maps (1 required)	_____	_____	_____	_____	_____
Pictures (1 required)	_____	_____	_____	_____	_____
References (3 required)	_____	_____	_____	_____	_____

A poster will be considered Good if it contains all the required elements (as detailed in parentheses above) and each element is satisfactory. If a poster includes more than one graph, picture, or other element, it may be judged Excellent in that element. If it is lacking in one or more elements, such as fewer than 50 data points or only two references, it will be rated Fair or Poor. If it has no picture or map, etc., it will receive a score of zero for that element.

The Summary is a particularly important piece of the poster. It should explain what the data represent, where the numbers were obtained, and what the graph means. The more complete the Summary, the better its score. However, it must be limited to a single page; if the Summary is too long, it will be scored lower.

Presentation

Organization	_____	_____	_____	_____	_____
Legibility	_____	_____	_____	_____	_____
Spelling & Grammar	_____	_____	_____	_____	_____
Overall Appearance	_____	_____	_____	_____	_____

The Organization of a poster will be considered Good if its layout is logical and flows smoothly from one part to the next, with clear captions, titles, and figure numbers for the various parts. A Good rating for Legibility means that most text can be read easily from ~1 meter away (3 feet). A poster will be rated Good in Spelling & Grammar if it contains only 2-4 errors, Excellent if it has 0-2 errors, and Fair or Poor if it has more than 4. (This standard is less strict for people who are not native speakers of English.)

Finally, Overall Appearance will be used to judge the creativity of the poster, as well as the care and neatness used in putting it together. This is a more qualitative measure but is still important.

The sample posters in the Geology building have grades and comments to help you make your poster and understand how it will be graded.

Poster Display Number 18 Title The Front Line of Sea Level Rise: Key West, Florida

I. REQUIREMENTS

Does the poster have a data table? Yes / No Does the poster have a summary? Yes / No

How many of each of the following elements are present on the poster?

3 Graphs 5 Pictures 1 Maps 6 References

II. CONTENT

Yellow = 1/4 point each

Purple = 1 point each

Is the topic of the poster appropriate for a geology class? Explain.

Yes, the topic is appropriate because we studied climate change in class. The poster explores how sea level rise is affecting and will affect Key West, FL. It examines average and extreme high and low tides and mean sea level.

Does the data table appear to have been produced by a classmate using Excel (not simply printed from the Internet)? If not, explain.

Yes, the data table seems to be produced by Excel, except that one column heading is printed vertically.

Circle the answers below to show whether the graph is properly annotated:

What type of graph is used on the poster? Bar or column / Scatter / Pie chart / Other

Were the axis scales chosen so that the data points fill the entire chart area? Yes / No

Does the graph have a figure number? Yes / No Do the X- and Y-axes have titles? Yes / No

Does the graph have a title or caption? Yes / No Are the units on the Y-axis labeled? Yes / No

Is the legend informative? Yes / No / NA Are the units on the X-axis labeled? Yes / No

What is the most interesting thing you learned from this poster? (Write "N/A" if none. Note: If you use N/A too often in your reviews, you will lose points!)

As sea level rises, the Florida Keys and the Everglades could be flooded. The poster has 4 pictures showing different amounts of sea level rise.

III. PRESENTATION

Is the lettering easy to read? Yes / No Are the figures clearly numbered? Yes / No

Does every graph, picture, or map have a complete caption? Yes / No

Describe the overall appearance of the poster: Is it attractive? Are you eager to do more than glance at it? Is it well-organized and easy to follow?

The poster is hard to read because there is not enough contrast between foreground and background and the font size is too small. The organization is odd because the graphs come before the table.

What is the most creative idea used on this poster? (Write "N/A" if none)

The background is a light-colored map of the Florida Keys instead of just a solid color.

IV. POSTER EVALUATION

Rate the overall quality of this poster: Excellent Good Fair Poor

Students receive the rest of these pages at the Poster Review Session.

Introductory Physical Geology

Final Project: Poster Display and Review

Date

NAME _____

DISPLAY NUMBER FOR YOUR POSTER _____

READ THESE DIRECTIONS THOROUGHLY!

1. Check-In

When you arrive, pick up a numbered label and place it on the front of your poster. **WRITE the Display Number** on this sheet, below your name at the top of the page. **Important:** if you omit this step, the instructors will not know which poster is yours!

- a) **IF** you want to keep your poster, then inform one of the instructors so that they will grade it promptly.
- b) If you do not choose to keep your poster, you may leave it here after you finish your reviews.
- c) If you leave your poster, will you grant permission for the instructor to scan it and put it online as an example for future semesters?

Yes / No

2. Set-Up

Take 2-3 pins from the registration table. Find an open space on the display boards and pin your poster to the board.

3. Poster Reviews

Choose five (5) posters to review. Using the attached sheets, fill out one page for each poster. **Do not** review your own poster.

You should spend 5-10 minutes per poster. Parts of the review sheets can be answered with a check mark or a number, and others require 1 or 2 sentences. The more detail you provide in your reviews, the higher you will score. Remember that the reviews count as 5% of your course grade, so complete them carefully.

Reviews will be graded based on the thoughtfulness and thoroughness of your answers. Note: If you use "Not Applicable (N/A)" too often in your reviews, you will lose points!

If a poster does not contain all the required information, record the lack and rate it accordingly. Note that **your ratings of other students' posters do not** affect their grades. They are included only for comparison. Posters are evaluated for grades independently by the instructors.

4. Wrap-Up

Complete the brief evaluation form on the last page, separate it from the other pages, and leave it on the registration table. Hand in your poster reviews, on the table or to one of the instructors. You may claim your poster **IF** its label has been tagged with a check mark. This means your poster has been evaluated by an instructor. **DO NOT** remove your poster before it has been evaluated. Any posters not removed by 11 AM will be appropriated by the instructor!

Poster Display Number _____ Title _____

I. REQUIREMENTS

Does the poster have a data table? Yes / No Does the poster have a summary? Yes / No

How many of each of the following elements are present on the poster?

_____ Graphs _____ Pictures _____ Maps _____ References

II. CONTENT

Is the topic of the poster appropriate for a geology class? Explain.

Does the data table appear to have been produced by a classmate using Excel (not simply printed from the Internet)? If not, explain.

Circle the answers below to show whether the graph is properly annotated:

What type of graph is used on the poster? Bar or column / Scatter / Pie chart / Other

Were the axis scales chosen so that the data points fill the entire chart area? Yes / No

Does the graph have a figure number? Yes / No Do the X- and Y-axes have titles? Yes / No

Does the graph have a title or caption? Yes / No Are the units on the Y-axis labeled? Yes / No

Is the legend informative? Yes / No / NA Are the units on the X-axis labeled? Yes / No

What is the most interesting thing you learned from this poster? (Write "N/A" if none. Note: If you use N/A too often in your reviews, you will lose points!)

III. PRESENTATION

Is the lettering easy to read? Yes / No Are the figures clearly numbered? Yes / No

Does every graph, picture, or map have a complete caption? Yes / No

Describe the overall appearance of the poster: Is it attractive? Are you eager to do more than glance at it? Is it well-organized and easy to follow?

What is the most creative idea used on this poster? (Write "N/A" if none)

IV. POSTER EVALUATION

Rate the overall quality of this poster: _____ Excellent _____ Good _____ Fair _____ Poor

Optional Project Evaluation

Please complete this brief survey. Tear this page away from the rest of the handout, and turn it in separately at the front table. Do not write your name on this page (the survey is anonymous).

1. a. What did you like about preparing your own poster presentation?

b. What did you dislike about it?

2. a. What did you like about reviewing other students' poster presentations?

b. What did you dislike about it?

3. Would you have preferred a comprehensive final exam similar in format to the midterms?