

Exploring the Environment – Volcanoes

Overview:

Welcome to the firm! As the director in chief of our consulting firm, Volcanoes-R-Us L.L.C., I'd like to welcome you on board and wish you luck in your first case. As a member of our consulting firm, you will be a member of a team of specialists and experts who work to identify problems, research the facts, and come up with real solutions to the problems our clients face. Currently we have 4 clients in desperate need of our services. Please touch base with me, your boss, to find out who you will be working with and who your client will be. Don't forget that our firm requires you, as a team, to present your full findings to our clients. We are counting on you.



Ms. Caldera with her motivational hammer

Yours truly,

Ms. Tephra Caldera

Director in chief, Volcanoes-R-Us, L.L.C

Your Job:

You will have to decide which job you would like to pursue. Be sure to notify Ms. Caldera a.k.a. your teacher of your job choice. Please see the following job descriptions that indicate the focus of each role in this project. (hint: do enough research so that you fully understand your role as described below)

Geologist: You are the expert on the internal causes of volcanoes. You are familiar with all the types of volcanoes and the types of magma and eruptions associated with each. You are well versed in the variety of dangers associated with volcanic eruptions. You have experience in seismology. You have experience with interpreting data used to predict volcanic eruptions.

Historical Geologist: You know everything a typical geologist knows but you focus on reading the rock record to see the eruptive history of a volcano. You are well versed in the variety of dangers associated with volcanic eruptions. You know about the past history of volcanoes and use this information to predict when and how a volcano might erupt next.

Risk Analyst: You are good friends with the geologists and know almost every thing there is to know about volcanoes. Your job is to determine the probability of danger to communities. You work with the Emergency Management Agency to determine the type and extent of damage a community might incur and the costs associated with those damages. Your job is to come up with possible solutions to help avoid catastrophe while saving everyone's money at the same time.

Technology Specialist: You are the technology guru and organized too. Not only are you good with using all kinds of software but you are talented in reading maps too. You spent a summer working with a geologist in the field setting up volcano monitoring equipment and studying satellite data. You love to study earth using Google Earth® and can learn new software too. You helped the geologists give presentations to the communities by overseeing the organization of their PowerPoint® presentations and reminded them of due dates.

Task:

Now that you have your team assignment, job role, and have been assigned to your first client, log onto the Volcano Module page to begin your project.

<http://www.cotf.edu/ete/modules/volcanoes/volcano.html>

1. Read your assigned situation to get an overview of the problem and focus of your research. Dig into the website fully to gain a better understanding of your situation. Be sure to read EVERY page!
2. Organize your efforts by viewing the attached PBL model. This will put your research efforts in sequence and guide you in your exploration.

3. Follow the timeline to complete this project on schedule for the meeting with your clients.

Day 1: Welcome to the firm

Job assignments, meet teammates, exchange contact information

All - Introduction to Google Documents

Create PBL document and share with group, Ms. B and Mr. T

Tech. Specialists – Mini Lesson on Google Earth

Google Earth – Find your volcano (3D, zoom, rotate, save jpg, etc..)

Review Volcano Module website (read, bookmark, etc...)

Day 2: Research Work session (PBL model# 1,2,3)

Continue Review of Volcano Module

Seismic Eruption – Earthquake and Volcano software introduction (see Mr. T's O Drive)

Google Presentation mini lesson

Create a Blank Google Presentation and share with group, Ms. B and Mr. T

Day 3: Research Work session (PBL Model items #1,2,3 continued AND complete #4)

Bubbl.us mini session

Team meetings – Set up time/date to meet w/ team outside of class or with Google Docs, discuss findings, progress

Report to Chief Caldera on problem statement and list of questions (10 points)

Day 4: Research Work Session (PBL Model items #1-6)

Essential Review/Lesson on Volcano Risks

Team Meetings – review research data, redefine problem, ask more questions

Day 5: Analysis Work Session

Team Meetings – Final decision-making, solutions to problem

Technology Specialists report to Chief Caldera on progress of team (10 points)

Day 6: Presentation Work session

Day 7: Presentation Work session

Day 8: Presentations to clients Groups # 1, 2, and 3

Day 9: Presentations to clients Groups # 4, 5, & 6 & Self / team evaluations

4. All team members should focus their attention on their job descriptions. If you are not really an expert in the described areas, become one by reading each of the provided links on the Volcano module page. All team members should be sure to know the following information in addition to the situations you are faced with. (include this in your presentations)

- Volcano types
- Where volcanoes form
- Volcano anatomy
- Impact of eruptions on climate
- Materials ejected from volcanoes
- Impact of eruptions on surrounding environment
- Topography of surroundings
- Risks & dangers associated with volcanoes

Evaluation:

The following will be used to determine your grade

1. Progress check ups (2) @ 10 points = 20 points (20% of grade)
2. Presentation – See attached Rubric 60 Points (60% of grade)
3. Peer Evaluations 5 points x 4 = 20points (20% of grade)

Presentation Rubric

You will create a PowerPoint presentation that will fully inform the client of the situation and what you recommend they do given the situation. The presentation should be 10 minutes in length and each member must have approximately equal time presenting.

	Poor (6 points)	Average (8 points)	Geologist! (10 Points)
Content	The problem is not well defined and information about the volcano is incomplete and/or inaccurate	Some discussion of the volcano is provided. The problem discussion lacks clarity and/or discussed solutions are unrealistic, unsupported, or unnecessary.	Background information and detail is given about the given volcano. The problem is thoroughly addressed and viable, realistic solutions are provided that are supported by relevant data
Design	Layout of slide is not consistent and poor use of transitions. Slides are too busy and/or difficult to read. 6x6 rule not followed.	Layout of slide is consistent and transitions add to the presentation. Some slides are difficult to read	Layout of slides is consistent and transitions capture interest in the topic being presented. Text has good contrast with background.
Media	No required media is utilized	At least 3 required media types are present	All 5 required media additions are included: pictures, Inspiration® concept map, video clip, external web links, and Google Earth® pictures
Presentation Delivery	Presenters just read from the slides and made little or no eye contact with audience	Presenters made some eye contact with audience	All presenters made eye contact with audience, spoke naturally, and elaborated fully on the slide content. Audience was engaged by the presentation
Timing	Presentation was equal to or less than 6 minutes	Presentation was under 8 minutes or over 12 minutes	Presentation fulfilled the 10 minute requirement (+ or - 1 minute)
Participation	One person dominated the presentation	One group member had noticeably less participation than the others and/or missed discussion of respective topics	All group members had equal participation in the presentation and discussed their respective topics