

VOLCANO WEBQUEST

WebQuest Description: YOUR MISSION: Volcano hunters wanted. Scattered across the continents are several volcanoes. Some of these volcanoes are active and others are dormant. You and your team have been hired to research a great deal of information about ONE volcano. This information will be used to create the mother of all volcano tours. Your main areas of research include GEOLOGY, ECOLOGY and TOURISM.

Grade Level: 9-12

Curriculum: Science

Keywords: Volcano, Geology, Ecology, Volcanology, Composite Volcano, Shield Volcano, Cinder Cone Volcano, Magma, Lava, Tephra, Atmosphere

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Introduction

You're Hired!!! Your team has been chosen to research one of the volcanoes listed below. The information you will uncover will be used to teach the world about one of the most majestic yet dangerous landforms on Earth; the volcano. Your team will select a volcano, choose roles, conduct research, organize your information into a report and plan a presentation. Step 1: Chose one of the following volcanoes. Volcanoes: St. Helens, Arenal, Vesuvius, Erebus, Mount Fuji, Kilauea, Marapi, Mayon, Rainier, Stromboli, Yellowstone. Clicking on each volcano above will take you to the Global Volcanism Program and a brief biography of your volcano. Step 2: Chose your role. ROLES: Geologist- What makes your volcano tick? You are responsible for researching the make up of the volcano. What causes it to erupt? What types of eruptions does it have? What type of lava? Etc. Ecologist- How has your volcano impacted the surrounding environment? You are responsible for researching how your volcano's eruptions have impacted the atmosphere, wildlife, human activity, soil, etc. Tour Guide- What makes your volcano unique? You are responsible for your volcano's biography. Where is it? How big is it? When has it erupted? Safety. etc.

Tasks

YOUR TASK: Your team must prepare for an expedition. You have been hired as the Geologist, Ecologist and Tour Guide for a 9th grade field trip. Before you can embark on your trip you must first RESEARCH information about your volcano, organize it into a REPORT and PRESENT this information to your class. Please follow the guidelines listed below: RESEARCH Use the websites provide on the Process page to research the information outlined below: Geologist Research 3 different ways volcanoes form. Explain each way volcanoes form, include how your volcano formed. Research at least 3 different types of volcanoes. Explain each type, include what type of volcano yours is and why. Research at least 2 different types of volcanic eruptions and different types of lava. Explain each type of eruption and type of lava, include what type of eruption your volcano has. Ecologist Research the consistency of the Earth's present day atmosphere. Explain the major gases that make up our atmosphere today. Research how volcanic activity can impact the atmosphere. Explain how volcanic eruptions impact the atmosphere, include how your volcano's impact. Research how volcanic eruptions can impact the surrounding wildlife, human activity and soil. Explain how volcanic eruptions impact the surrounding environment, include how your volcano's impact. Tour Guide Research areas of the world that are volcanically active and why. Explain what makes these areas so active and how your volcano is related to these areas. Research the location, size and volcanic history of your volcano. Explain where your volcano is, how big it is in comparison to other volcanoes and a descriptive history of its past eruption(s). Research safety precautions that should be taken when visiting or living near a volcano. Explain how you would keep a people safe who were on tour of your volcano with you, include how people who live near a volcano stay safe. REPORT Organize all of your research into a 2-4 page report following the requirements listed below: The paper must be 2-4 pages typed, double spaced, 12 pt. font. The paper must include an introduction, body and conclusion. The paper must include at least 2 pictures, maps or charts. The paper must explain all of the criteria outline in the research section. The paper should include a title page and bibliography. PRESENTATION Plan a 2-3 minute presentation that you will give to the class following the requirements listed below: The presentation must be 2 to 3 minutes long. Each team member must contribute to the presentation. Each team member must speak about as if they were their role. The presentation must include at least 1 visual aid. The presentation should be based on the information found during your research and organized in your report.

Process

The PROCESS: Follow the steps below to complete the webquest. This is a group assignment, each of you must contribute equally. Feel free to assist each other and ask your teacher if any problems arise. Step 1: Choose a Volcano. (Listed on Introduction page) Step 2: Choose a Role. (Listed on Introduction page) Step 3: Research (Use websites listed on this page) Step 4: Organize your information into a Report. (Requirements listed on Task page) Step 5: Plan your Presentation. (Requirements listed on Task page) There is a vast amount of information about volcanoes on the web. An organized list of some websites are listed below. Feel free to search the web for alternative websites, but only do so after you have viewed the websites below. Volcano Information Links: Wikipedia, Softpedia, Volcanoes and Society, United States Search and Rescue Task Force, Types of Volcanoes, Principle Types of Volcanoes, Environmental Information Links: Yahoo

Evaluation

Category and Score	Below Average 1 pt.	Average 3 pts.	Above Average 4 pts.	Exemplary 5pts.	Score
Research / Teamwork	Information was not sufficient. Team members did not work well together.	Information needs to contain more detail. Team members worked well together with few problems.	Information was sufficient. Team member worked well with each other.	Information was more than sufficient. Team members worked exceptionally well together.	%20
Report	The report lacked accurate information and data. The bibliography was missing or poorly done.	The report failed to meet all of the needed requirements.	The report met all of the requirements, was well organized and well written.	The report was excellent. All requirements were met with the addition of key information, visuals and data.	%50
Presentation	Presentation was not organized or pre-planned. Not all members participated, lacked visuals.	Presentation was not well organized or pre-planned.	Presentation met all requirements.	Presentation met all requirements. It was unique, energetic and entertaining.	%30
				Total Score	%100

Conclusion

By now you should be a volcano expert or Volcanologist. I thank you for all of your hard work. Hopefully, you had some fun in the process of learning. Upon completion of this activity students should be able to answer the following questions: How and where do volcanoes form? What makes volcanoes erupt differently? What are the different types of volcanoes? How do volcanic eruptions impact the surrounding environment? What are some strategies for volcano safety?

Teacher Page

Volcanoes have been cut or trimmed down from several school and state standards at the high school level. This activity is a way to teach an entire unit about volcanoes that is entirely student-centered. This is a difficult task that will require time, hardwork, student and teacher participation, collaboration, access to technology and planning by both the student and the teacher. Objectives: Students will understand how, why and where volcanoes form. Students will understand why volcanic eruption vary. Students will understand how volcanic eruption can impact the environment. Students will learn about several different volcanoes from around the world. Students will use internet resources to gather information. Students will organize their research into a report and presentation. Students will collaborate with other students and work successfully in small groups. Students will present information to the class. Time: This webquest will vary in length depending on the ability of your students. Upper level (2-3 class periods) Lower Level (4-5 class periods) Time can be given in an out of class to complete this assignment. Problems may present themselves (ie. student understanding, computer / internet access, systems crashing), a good teacher always adapts. Differentiation: Students can work independently as a long term project. The teacher can teach a volcano unit before beginning the webquest. Students can work in groups of 6 and roles can be shared.

Standards

Credits

Other