

21CLD Learning Activity Description

1. Title of Learning Activity & Average Age of Students

Title: Olympics Site Selection

Average Age of Students: 13

2. What did you hope your students would learn from this learning activity?

The theory of plate tectonics explains the formation, movement and destruction of the Earth's surface. The Earth's geosphere interacts with other Earth systems. Geologic events can occur quickly or over a long period of time.

I also wanted students to practice logical thinking and writing a persuasive letter.

3. Did you have learning goals from more than one discipline (for example, literature and history, or science and math) for this learning activity?

This activity has learning goals in science and language arts.

For science, students compared and contrasted the geology, seismology and volcanology of three different sites and based on their assessment they recommended a specific site.

For language arts, students are asked to practice their skills for writing a business letter by writing a letter to the Olympic Committee which states their reasons for recommending a specific site.



4. Were students required to work in pairs or as a group on any part of this learning activity?

- No
- Working in groups was *optional*. Please describe below the work that students did together.
- Working in groups was *required*. Please describe below the work that students did together.

Each student took on a role within a small group: seismologist, volcanologist, and geologist. They had to work separately on researching their particular field and also come together to make conclusions based on the perspectives of all three scientists.

5. Were students allowed to work with technology (ICT) such as computers or digital cameras for any part of this learning activity? Please describe.

- No technology was used for this learning activity.
- Students *could* use technology for this activity
- Students were *required* to use technology for this activity

Students used the Internet for research.

6. What criteria did you use to judge the quality of students' work on this learning activity? Were students aware of the criteria in advance of completing the learning activity?

For this activity, I developed a rubric for each one of the scientist roles, which outlined what I expected the students to accomplish in their roles, including how well their letter of recommendation (from the perspective of their scientist role) is written. I also included a rubric about their team-work efforts.

7. How long did their learning activity take?

- a. Completed in a single class period
- b. Completed in 2-4 days
- c. Required one week or more to complete

8. What verbal instructions did you give to students?

The final product will be a business letter to the International Olympic Committee recommending a site for the 2003 Winter Games. Each team will also produce a chart showing the strengths and weaknesses of each of the four given locations.

9. Is there any other information you would like to include to help another teacher using this learning activity be successful?

PLEASE REMEMBER TO INCLUDE:

- *Instructions for the learning activity*
- *Handouts and materials*
- *Grading rubrics*



OLYMPICS SITE SELECTION

- You are a member of a team comprised of a seismologist a volcanologist and a geologist which has been hired by the International Olympic Committee (IOC) to help them choose a safe site with appropriate geologic features for the 2030 Winter Olympic Games. Your choices are Tokyo, Japan; Sao Paulo Brazil; Banff, Ontario, Canada; and Jacksonville, Florida.
- Each team member is a specialist in his field, and will research the four sites to determine the advantages and the disadvantages of each location. Be sure to find current information on the internet to make sure that current environmental trends are taken into account. The team will then compile its findings and determine the best location for the Olympic Games.
- The seismologist will report on any past and present earthquake activity i, and determine the risk of any possible future earthquakes at each location.
- The volcanologist will report on any past and recent volcanic activity, and determine the risk of any possible future volcanic eruptions at each location.
- The geologist will report on the types of rocks and geologic landforms found near each location.
- The final product will be a business letter to the IOC recommending one site for the Games. The letter will discuss team findings with respect to all three sciences. The team will also produce a chart showing the strengths and weaknesses of each location.



| | Tokyo, Japan | Sao, Paolo, Brazil | Banff, Alberta, Canada | Jacksonville, Florida |
|---------------|----------------------|---------------------------|-------------------------------|------------------------------|
| Volcanologist | <u>Advantages</u> | <u>Advantages</u> | <u>Advantages</u> | <u>Advantages</u> |
| | <u>Disadvantages</u> | <u>Disadvantages</u> | <u>Disadvantages</u> | <u>Disadvantages</u> |
| Seismologist | <u>Advantages</u> | <u>Advantages</u> | <u>Advantages</u> | <u>Advantages</u> |
| | <u>Disadvantages</u> | <u>Disadvantages</u> | <u>Disadvantages</u> | <u>Disadvantages</u> |
| Geologist | <u>Advantages</u> | <u>Advantages</u> | <u>Advantages</u> | <u>Advantages</u> |
| | <u>Disadvantages</u> | <u>Disadvantages</u> | <u>Disadvantages</u> | <u>Disadvantages</u> |



Name: _____

Teacher: _____

Date: _____

Title of Work: _____

| | Criteria | | | | Points |
|------------------------------|---|--|--|--|--------|
| | 1 | 2 | 3 | 4 | |
| Volcanologist | Research shows no evidence of knowledge of volcanism | Research demonstrates some knowledge of volcanism, but leads to an incorrect recommendation | Research demonstrates solid knowledge of volcanism, and may or may not lead to a recommendation | Recommends a site than is safe according to volcanic activity | |
| Seismology | Research shows no evidence of knowledge of seism | Research demonstrates some knowledge of seism, but leads to an incorrect recommendation | Research demonstrates solid knowledge of seism, and may or may not lead to a recommendation | Recommends a site than is safe according to seismic activity | |
| Geology | Research shows no evidence of knowledge of geologic landforms | Research demonstrates some knowledge of geologic landforms, but leads to an incorrect recommendation | Research demonstrates solid knowledge of geologic landforms, and may or may not lead to a recommendation | Recommends a site than is safe according to geologic landforms | |
| Team Chart | Chart is missing more than six boxes of information | Chart is missing between four and six boxes of information | Chart is missing no more than three boxes of information | Chart is completely and correctly filled out | |
| Recommendation Letter | Letter is incoherent and doesn't give a recommendation | Letter is not well written, and the site recommendation is inappropriate | Letter is well written, but the site recommendation is inappropriate | Letter is well written and clearly recommends a viable site | |
| | | | | Total → | |

