

Comparing and Contrasting the Quelccaya Ice Cap Glacier

Subjects- Science, Language Arts

Grade Level- 3rd

Approximate Time- 6 class periods

NC Science Essential Standards-

- 3.E.2 Compare the structures of the Earth's surface using models or three-dimensional diagrams.
- 3.E.2.1 Compare Earth's saltwater and freshwater features (including oceans, seas, rivers, lakes, ponds, streams, and glaciers).

Common Core Language Arts Standards-

- CCSS.ELA-LITERACY.SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.
- CCSS.ELA-LITERACY.SL.3.1.B Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.

Materials-

- http://climate.appstate.edu/~perrylb/Pubs/Presentations/Seimon&Perry_Valdivia_2010.pdf (page 10)
- Padlet
- Media resources and books to answer students' inquiry (I wonder) questions
- Chart paper

Day 1 Whole Group-

- Teacher will show the two photographs on page 10 in the pdf above. One photograph shows the Quelccaya Ice Cap Glacier in 1931 and the other in 2005.
- Teacher will ask students not to say a word but to only analyze and observe silently.
- Students will then use Padlet to post 3 observations they have of the Quelccaya Ice Cap Glacier

Day 1 Partner Work-

- Students will do the Kagan Activity “Stand up, Hand up, Pair up” to find a partner.
- Students will then turn and talk to their new partner to share the 3 things that they notice about the Quelccaya Ice Cap Glacier pictures.
- Once students have shared, they will use a highlighter to physically highlight the three main observations that they have created.
- Pairs will also come up with 1 inquiry question (I wonder question) that they are thinking about.

Day 2 Whole Group-

- Teacher will have the class share as a whole group their observations of the photographs from the previous day.
- Once students have shared their observations, the teacher will ask the questions
“Why are the photographs different?”
“What do you think caused the difference?”
“Who do you think noticed the change first?”
“How can we tell the photographs are different?”
- After the discussion, the teacher will then have the students share their inquiry question (I wonder question).
- The teacher will then group the students so the class has a total of 4 inquiry questions (I wonder questions).

Day 2 Small Group-

- Students will work in small groups in order to research their inquiry (I wonder) questions.
- Students will first write their question at the top of the chart paper.
- They will then begin brainstorming where they could go to find out more information on their inquiry question. Students will write down on a sticky note the resources that they feel they should use.

Day 3 Whole Group-

- Teacher will have students come together to review their inquiry questions.
- Students will then gather up their books and media resources in order to research.

Day 3 Small Group-

- Students will research and take notes on their chart paper.

Day 4 Small Group-

- Students will research and take notes on their chart paper

Day 5 Whole Group-

- Small groups will share their findings of their inquiry questions.
- As a group, students will discuss any answers that they can come up with that would help put an end or slow down the constant change and melting of the Cordillera Vilcanota.

Day 6 Whole Group-

- Students will skype with a meteorologist to discuss the climate change, observations, and findings of the Quelccaya Ice Cap Glacier.