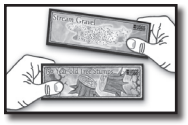
Student Page

Name _____

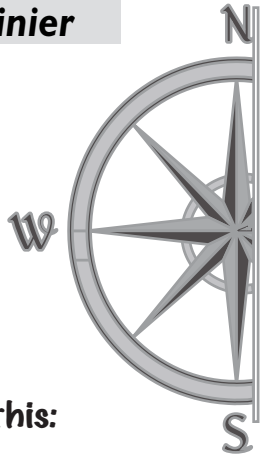


Explore Mount Rainier's History with Earth Blocks

Instructions: *Arrange the "Earth Blocks" in order—from oldest at the bottom to youngest at the top. Using the field notes below as your guide, answer all the questions on the following page. Use the "Law of Superposition."*

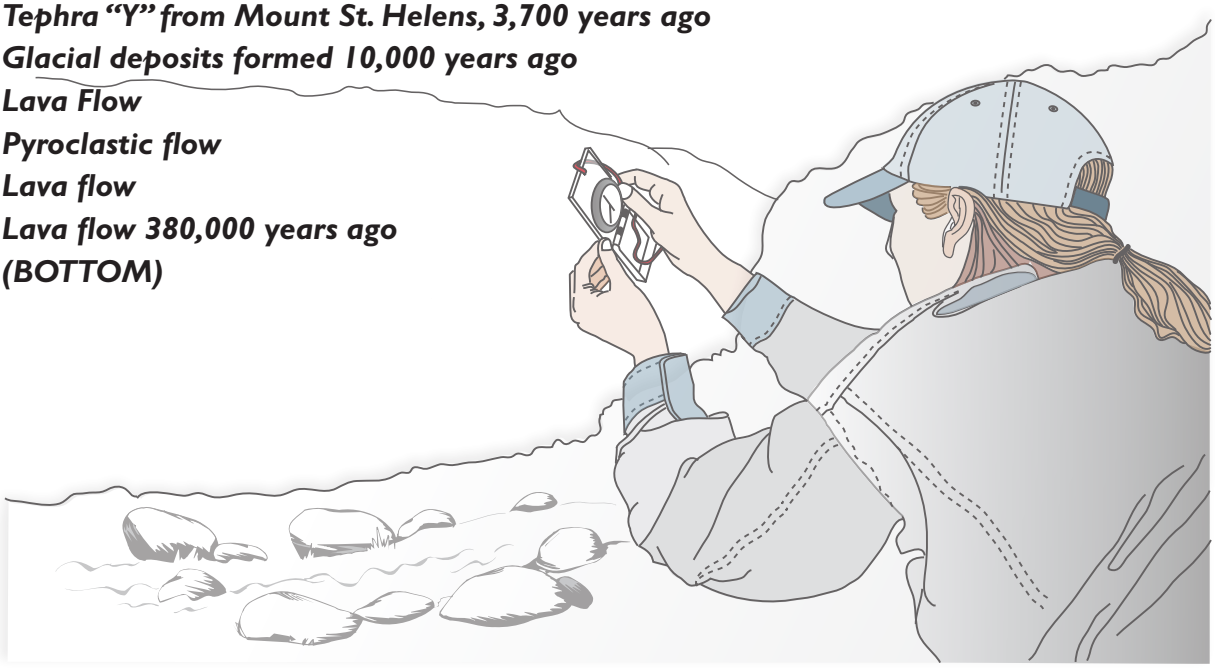
Observations on a High Mountain Ridge at Mount Rainier

August 23
Latitude: 46°50' N Longitude: 121°45' W
Elevation: 3,069 meters (10,070 feet) On a high ridge west of Nisqually Glacier. Clear skies but chilly 10° C (50° F.) Saw two mountain goats and a marmot. A small avalanche of unstable rock broke loose and tossed dust into the air—lucky I did not get hit by any rocks!



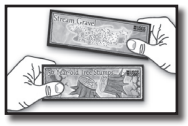
Exposure on ridge is 6 meters (20 feet) high and looks like this:

(TOP)
Forest floor
Glacial deposits
Tephra (age unknown)
Tephra "Y" from Mount St. Helens, 3,700 years ago
Glacial deposits formed 10,000 years ago
Lava Flow
Pyroclastic flow
Lava flow
Lava flow 380,000 years ago
(BOTTOM)



Student Page

Name _____



Explore Mount Rainier's History with Earth Blocks - continued...

Questions for Observations on a High Mountain Ridge at Mount Rainier:

1. What is the age of Tephra layer Y?

2. Find the pyroclastic flow layer.
Is the pyroclastic flow older or younger than Tephra layer Y? Explain your choice.

3. Find the tephra layer of unknown age. What can you learn about its age?

4. Are the lava flows and pyroclastic flows related? Explain how.

5. Write a paragraph about the geologic processes that occurred on this high mountain ridge.

Student Page

Name _____

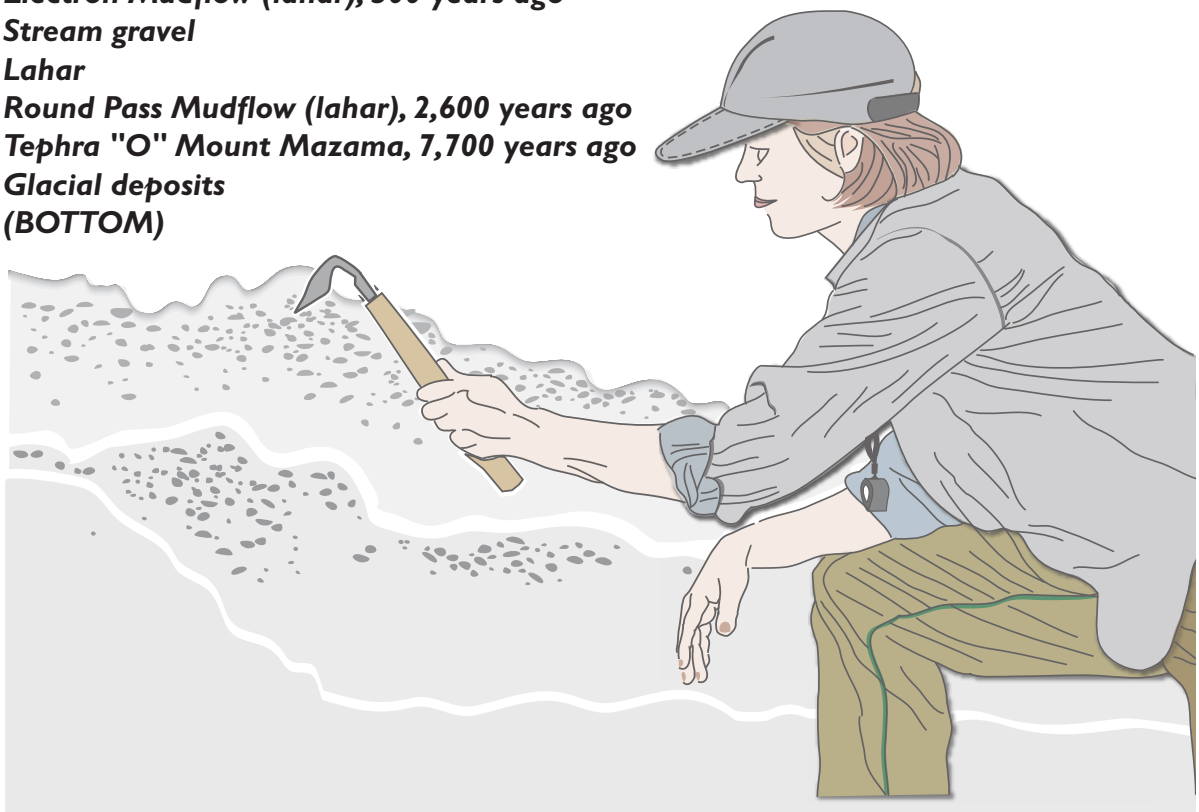
Explore Mount Rainier's History with Earth Blocks

Observations of a Valley Riverbank at Mount Rainier

August 25
Latitude: 46°44' N Longitude: 121°60' W
Elevation: 427 meters (1,400 feet) In the west side riverbank, Nisqually River valley just upstream of the Longmire bridge crossing. The river is low for this time of year. Lots of deer and mosquitoes!

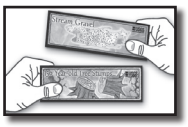
Riverbank is about 4.5 meters (15 feet) high:

(TOP)
Forest Floor
Stream gravel
Lahar
Stream gravel
Lahar
Stream gravel
Electron Mudflow (lahar), 500 years ago
Stream gravel
Lahar
Round Pass Mudflow (lahar), 2,600 years ago
Tephra "O" Mount Mazama, 7,700 years ago
Glacial deposits
(BOTTOM)



Student Page

Name _____



Explore Mount Rainier's History with Earth Blocks - continued...

Questions for Observations of a Valley Riverbank at Mount Rainier:

1. The age of the undated lahar between the Round Pass Mudflow and the Electron Mudflow is ____ years to ___ years old.

2. Name the principal geological process that follows after lahars (mudflows). Explain why.

3. Count how many lahars occurred in this valley between the Electron Mudflow (include it) and the present.

4. Write a paragraph about the geologic processes that occurred in the valley.

5. Summarize the similarities and differences between volcanic layers on the ridge and in the valley riverbank.

6. Rearrange your earth blocks into some new pattern. List the events from bottom to top. Write a paragraph that describes the events that formed these layers.