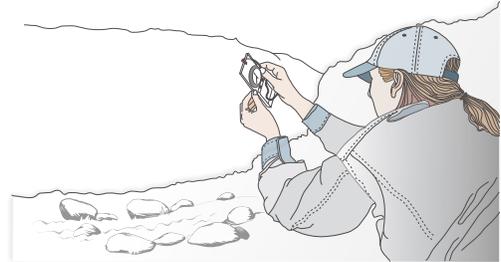


## Explore Mount Rainier's History with Earth Blocks - Answers

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

1. What is the age of Tephra layer Y?

**Tephra layer Y fell to the ground during an eruption 3,700 years ago.**



2. Find the layer of rock rubble left behind by a pyroclastic flow. Is the pyroclastic flow older or younger than Tephra layer Y? Explain your choice.

**We know that the pyroclastic flow is older because it is a lower layer than Tephra Y.**

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

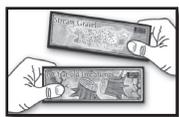
**The age of the undated tephra is between 3,700 years and the present.**

4. Explain how the pyroclastic flows and lava flows are related.

**Both formed during an eruption. The pyroclastic flow formed when hot gas-rich lava flows broke apart and tumbled down the sides of the volcano.**

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

**Volcanic eruptions caused two lava flows. Collapse of hot ash clouds, or lava flows caused pyroclastic flows. Another lava flow covered the pyroclastic flow. A glacier spread loose rock over the ridge. Tephra from an eruption of Mount St. Helens covered the ridge. A second tephra layer formed. A glacier left behind loose rocks on the valley floor. Soil from the forest floor covers all of the layers underneath.**



## Explore Mount Rainier's History with Earth Blocks - Answers

### *Questions for Observations of a Valley Riverbank at Mount Rainier:*

1. The age of the undated lahar layer between the *Round Pass Mudflow* and the *Electron Mudflow* is \_\_\_\_ years to \_\_\_\_ years old.

**The tephra was formed between 2,600 and 500 years ago.**



2. Name the principal geological process that follows after lahars (mudflows). Explain why.  
**Stream water transports loose sediments and redeposits it as layers of stream gravel.**

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

**Three lahars (including the Electron Mudflow) occurred.**

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

**Glacial deposits were first to form. Later, tephra from Mount Mazama covered the glacial deposits. The Round Pass Mudflow and another lahar covered the valley floor. This surface was buried by gravel carried there by stream flow. The Electron Mudflow covered the valley floor. It was followed by more stream flow, which left stream gravel on the surface. Twice more, lahars flowed down valley and stream gravel covered the valley floor. Now a forest covers the valley floor.**

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

**The ridge top consists of lava flows and tephra layers, while the valley riverbank principally consists of lahar and stream gravel layers. Both areas have been fashioned by a variety of geologic processes.**

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.