

# THE BIG STORY - LASSEN PEAK ERUPTS

**SUMMARY:** While visiting the Hot Rock and Devastated Area in Lassen Volcanic National Park, students will "meet" historical figures who witnessed the volcanic events that occurred in May 1915. Students will listen to firsthand accounts and examine historical photos. Students will act as newspaper reporters, recording information and writing a newspaper article.

**GOAL:** To introduce students to the impacts of Lassen Peak's eruptions, mudflows, and pyroclastic blasts of May 1915 on the lives of local residents and the surrounding landscape

**OBJECTIVES:** Students will be able to (1) name at least two people that were affected by the volcanic events of May 1915 and (2) write a short newspaper article describing the events as witnessed by those individuals interviewed.

**GRADE LEVEL:** Fourth through twelfth

**TIME REQUIRED:** One to two hours

**LOCATION:** The first stop is at Hot Rock along the park road. The second stop is at the Devastated Area; students will then walk the Devastated Area interpretive trail.

**MATERIALS:** Reporter Question Sheets (one per student), pencils, paper, writing boards or cardboard (optional), Photo Pages of five historic photos, Quotes (Loomis's flood account, Wid Hall's story, Stockton Record Reporter's account of Lost Creek, Loomis's account of big eruption, and Frank Houston's story), and a park map (with Hat Creek and Lost Creek highlighted)

**SUBJECTS:** History, Social Science, Science, Language Art, Drama

**KEY WORDS:** Volcanic Eruption, Pyroclastic Blast, Mudflow, Devastated

**BACKGROUND:** Read and share with your class B.F. Loomis's book Eruptions of Lassen Peak. It contains historical information as well as interesting personal accounts, some of which are used in this activity. This book may be purchased from the Lassen Association by mail.

Lassen Peak's eruption sequence follows:

1. From May 1914 through early May 1915, approximately 170 small explosive steam-blast eruptions were recorded. These eruptions ejected only broken fragments of the old rock from Lassen Peak. On May 16, 1915 new hot black lava filled the open crater. During the night of May 18 or the early morning of May 19, large chunks of hot lava spilled over the crater rim and generated an avalanche of hot lava which melted snow on Lassen Peak. The combination of hot lava and melting snow avalanching down Lassen Peak created a debris

flow (often referred to as mudflow). This debris flow or mudflow consisted of melted snow carrying pieces of hot lava, uprooted trees, mud, and rocks down Lost Creek and Hat Creek.

As the mudflow slowed down depositing its debris, it left a flood of muddy water to continue down Hat Creek. This created a flood which washed out homesteaders on Hat Creek.

2. On May 22, 1915 B.F. Loomis and his party hiked to the Devastated Area and took photographs of the debris (mudflow). They ran out of film and left the area. Running out of film might have saved their lives!

3. A few hours after they left the area, the largest eruption occurred sending a pyroclastic flow (a mixture of superheated gases, pumice, and lava fragments traveling at speeds of over sixty miles per hour) down the already devastated area. This hot blast created additional mudflows knocking down and burning any remaining trees.

Note: You will notice that some of the information given by B.F. Loomis does not match the above eruptive sequence. Loomis was thought to be correct at the time, but scientists have clarified the event sequence since then.

### **INSTRUCTIONAL SEQUENCE:** **DAY BEFORE FIELD TRIP TO THE PARK**

1. Assign four students to read one of the quotes from the following characters: B.F. Loomis, Wid Hall, Stockton Record Reporter, and Frank Houston. Pass out the quotes to the students so that they can study their "parts." These will be used on the field trip at the appropriate time and place. Tell the students to act out the characters when they read the quotes. This will add more interest and fun to this activity.

2. Pass out Reporter Question Sheets (to all of the students), pencils, paper, and if desired, writing boards. Have students answer questions on separate sheet of paper. These are to be used the day before and the day of the trip. Have your students practice taking notes on the class portion of this activity titled "Editor's Request." This will make it easier for them to answer the questions on their Reporter Question Sheet.

3. Tell the students you want them to pretend to be newspaper reporters from their hometown. The date is May 25, 1915. They are on a field assignment and must write a newspaper article about the recent eruptions of Lassen Peak when they return to class. The day before and on the field trip, reporters will take notes and answer the questions on their Reporter Question Sheets as their investigation proceeds. It is important for everyone to listen very carefully to all that they see and hear. Remember to take good notes.

4. The teacher plays the role of the newspaper editor and reads the following to the students:  
**EDITOR'S REQUEST:** I imagine you've all heard some of the fantastic stories about Lassen Peak's eruptions and perhaps you've seen some of the exciting photographs. I want you to go there, see the devastation firsthand and come back with a detailed report.

Be sure to find out as much information as possible. Apparently, there are some people who had seen and experienced the eruption firsthand. Be sure to interview them. Now, I imagine you are probably a bit worried about traveling to an active volcano, but don't forget, if you want to produce quality news reporting, you've got to get close to the action. Besides, I checked it out; you'll be safe.

Our newspaper staff has already gathered the following information. On the night of May 18, or in the early morning of May 19, residents in Hat Creek experienced a huge flood. There was lots of muddy water and some debris which swept rapidly down stream. Some think it might have come from Lassen Peak.

When Loomis went up to investigate, he found a huge area completely devastated. All the trees and topsoil had been swept away from Lassen Peak. Along the edge of the flow where some of the trees were still standing, high water had stripped the bark off to a height of eighteen feet. On May 22, the largest eruption yet was witnessed by hundreds of people. A huge mushroom shaped cloud formed over Lassen and was estimated to be 30,000 feet high.

Have the students now answer Question No. 1 on the Reporter Question Sheet.

#### DAY OF FIELD TRIP

1. Buses coming into the north entrance of the park should stop at the Loomis Museum or get a drink of water, and if desired, have a snack. Then proceed to Hot Rock.
2. Unload the students at the Hot Rock pullout along the park road. Gather the class away from the Hot Rock. Using a park map, orient the students to Lassen Peak, Hot Rock, the Devastated Area, and Hat Creek which flows out of Hat Lake. Explain that Lost Creek is located a short distance behind the Hot Rock.
3. After orienting the class, take them over to the Hot Rock. Introduce them to "B.F. Loomis." Remember the date is May 25, 1915. Have the student who has volunteered to be B.F. Loomis read the following with as much flair as he or she can muster up:

#### **LOOMIS'S FLOOD ACCOUNT:**

"We reached the head of Lost Creek about noon, where we found that about all the water had come from the crater in Lassen Peak, which ran down the mountain side like a river. There was a great slit in the rocks on the east side of the peak where the water came from mostly, and all the water ran down on the Lost Creek side. The land on the hillside was well covered with timber before the flood, but the flood carried everything before it and not a tree was left in the path of the flood where it came down the mountain side, and for a long way down the creek. This flood was from a few feet up to eighteen feet deep...as was evidenced by the mud on the trees, and also by the bark which was peeled off, and the trunks of the trees were battered up to that height by the floating debris, logs, trees, and stones as they went flying past. Apparently, about half of the water swirled around and went down Lost Creek, and the other half went down Hat Creek."

“It is no exaggeration to say that the volume of water and mud in the two creeks must have been equal to that carried in the Sacramento River opposite Anderson at flood tide or high water mark. At the lower end of the Adams' place on Lost Creek the valley is about two hundred yards wide and the mud on the trees showed that the mudflow was about twelve feet deep. All the meadow lands on both creeks are covered with rocks and debris, rendering them worthless, and none of the buildings or fences remain. Many large rocks, some of them hot, were thrown from the crater or torn off the lip of the crater on the west side, and carried down the creek by the raging torrents. The largest hot rock we saw was...about 18 feet wide, 20 feet long and I estimated it to be about 14 feet thick. It was carried four or five miles from the crater of Lassen Peak to where it now lies. And after forty hours from the time it left the crater it was still sizzling in the water. Only the largest trees were left standing in the track of the flood, and most of those had the bark peeled off up to high water mark on the side where it came in contact with the floating debris, logs, and trees.”

Show the students the Loomis photo "Hot Rock on Lost Creek" (Fig. 24 in Eruptions of Lassen Peak, Photo No. 1.)

**LOOMIS'S FLOOD ACCOUNT:** The Jessen place was once a fertile meadow, but now it is a waste of land, with not a vestige of buildings or fences to show where the place used to be.

Show the students the photographs of the Jessen meadow before and after the mudflow and flood (Fig. 38 and 39 Eruptions of Lassen Peak, Photos No. 2 and 3.)

4. Have the students finish their notes on their questionnaire. Give them a couple of minutes to examine the Hot Rock.

5. Students get back on the bus and unload at the Devastated Area. **IMPORTANT:** The Devastated Area trail is used by many people. To make sure your class has no negative impact on this area, it is essential that every student stay on the established trail. This will also promote student safety. Remind the students to continue to take good notes.

6. Gather the students by the large sign in the parking area explaining the eruption history. Read the sign out loud together as a class.

7. Walk students to a spot in the Devastated Area that gives them all a good view of Lassen Peak. Have the class sit down and face Lassen Peak. Tell them Hat Creek is directly behind them. Introduce them to Wid Hall, a homesteader who lives ten miles downstream in the Hat Creek Valley. Have the student who has volunteered to be Wid Hall read the following firsthand account of the flood with gusto. Remember, the story takes place ten miles downstream from where the students are sitting.

**WID HALL'S STORY:** Mr. Elmer Sorahan was a homesteader living in a tent about a mile and a half above here on Hat Creek. In the night his dog barked, raved, and stuck his paws against him in the bed to wake him up. Elmer thought it might be some kind of animal, a bear, or panther, so he got up and dressed, put on his high top boots and laced them up. He put his gun by the bed, then peeped out to see what the dog was barking at. He saw the mudflow coming like a wave about twelve feet high with what looked like a white streak on top. The flood made a roar something like a gale of wind in

the trees, with a crash and boom of the logs and rocks as they came tumbling along in the flood. He realized that it must be a flood coming, so without waiting for his gun, he left everything and ran down the creek to awaken those who lived below him on the creek.

It was about eleven or twelve o'clock when the flood reached our place. Elmer came with a rush, and he was perhaps five minutes ahead of the wave that struck our house. He gave a yell that startled us, and we all jumped up in a hurry. Frank Bartlett happened to be staying there that night but he was sleeping in the barn across the creek, 150 yards distant. Elmer then ran across the creek to awaken him, and just got back across the creek when the bridge went out. Frank remained on the other side. As soon as Elmer returned he took the two girls, one by each hand, and beat it for higher ground. The older girl, Marian, was fairly well dressed, but the younger one was too slow and had no shoes on, and in their haste she stubbed a toe nail off. The crash and roar of the flood was so intense that you could hardly hear one yell even at a short distance. About three o'clock we tried to get back to the house which had moved 53 feet and lodged against a tree and the yard fence, but could not reach it at that time...

8. Have students finish notes on what happened at Wid Hall's place.

9. Take the class as a group around the Devastated Area interpretive trail. Stop to read the signs along the way. Students can take notes and fill in information on their Reporter Question Sheets as they go. Make it clear to all students that they are to stay on the trail and not disturb anything along the trail. Note: If you have a large class you may wish to break them into two or more groups to walk the trail. This would require that the students reading the quotes be stationed at their appropriate stop and share their story and photos with the student groups as they pass by.

10. Stop at the Giant Boulder sign and introduce the reporters from the Stockton Record. The Reporter is excited about a story he/she just heard and are generous enough to share it with you. Have the student who volunteered to be the Stockton Reporter read the following:

#### **STOCKTON RECORD REPORTER ACCOUNT OF LOST CAMP**

We hit Lost Creek at Lost Camp, or rather where Lost Camp used to be.

Now it is truly lost. Lost Camp was the mountain range used by A.J. Herbert. Fortunately, owing to the lateness of the season (there was still too much snow), he had not moved in for the summer, else he might not have been so fortunate as the family of Wid Hall, ten miles farther down from the peak. We found parts of Herbert's house jammed in between two big pines in the middle of a big pond of hardening mud two hundred yards below the spot where it formerly stood.

**TEACHER** adds: "Herbert was a stockman who used this area for summer grazing. Not any more!"

11. At the Hot Blast sign, stop and read the interpretive sign. Ask the students if you were standing here on May 22, 1915 at 4:00 p.m., would you have survived the eruption?

12. Stop the class at the Loomis Hot Rock sign. The students see Mr.Loomis again who now shares a little about the eruption on the afternoon of May 22 and shows them the Hot Rock

photograph taken by Loomis the morning of May 22, 1915 (Fig. 22, Eruptions of Lassen Peak, Photo No. 4.) Loomis reads:

### **LOOMIS'S ACCOUNT OF BIG ERUPTION**

On our way home that evening when we reached the Manzanita Chute...we witnessed the largest eruption of Lassen Peak which ever occurred. The eruption came on gradually at first, getting larger and larger until finally it broke out in a roar like thunder. The smoke cloud was hurled with tremendous velocity many miles high, and the rocks thrown from the crater were seen to fly way below the timberline before they were followed by a comet-like tail of smoke which enabled us to tell definitely the path of their flight. For a short time the smoke cloud ran down the mountain side, melting the snow very fast, and the water could be seen running down the mountain side in a rush twenty feet wide. But soon after the cloud lifted going straight up so the amount of water running down our direction was slight.

Show the students the photograph of the Big Mushroom Cloud (Fig. 32, Eruptions of Lassen Peak, Photo No. 5.)

13. Have the students finish taking notes on Loomis's story.

14. Stop at the Rock and Roll exhibit sign and introduce Frank Houston. Have the student who has volunteered to be Houston read the following:

### **FRANK HOUSTON'S STORY:**

At the time of the big blowout, on May 22, 1915, I was running a little mill on Hat Creek, about thirty miles north of Mt. Lassen. There came a flood on the twenty-first of May but it was cloudy and stormy so we could not see the mountain. So, four of us, George Hector, Frank Burnell, Roy Houston, and myself, went up the creek to see what the trouble was.

We went to Big Springs that day, where we stayed over night. The next day we crossed Lost Creek and the water was not over four inches deep. But after following up the creek for half a mile we could not go any further with the team on account of the mud that had come down in the flood, so we left the team there and went the balance of the way on foot. We had gone about a mile when the big blowout came on. We stood where we were watching the eruption until we heard the flood coming, and we had to cross the creek to get home, so we started on a run for the team about two miles further down the creek. We then had to drive to Twin Bridges to cross, but when we got there, the flood had beat us, and we could not cross.

We waited for the water to go down, and we had to stay there until about nine o'clock the next morning, and then the water was up to the horses' sides and to the bed of the wagon. Then we went down to Big Springs and got our breakfast, the first we had eaten since the morning before.

Mrs. Bramhall was there and wanted me to take her out, so we packed up her things and went over to Logan Lake, and there we met Wid Hall and family. They said the flood had wrecked their house and barn, so we went down there to see what we could save, but we couldn't get anything, the mud was too deep. So we came back and stayed at Logan Lake that night, and went home the next day.

15. Have the students finish notes on Frank Houston's story.
16. Have the students finish walking the Devastated Area trail and read the rest of the display signs to obtain additional information for their articles if there is time.
17. Gather the class together back in the parking area. Review the information they have heard and noted. Have student reporters share their information with other student reporters. Have the students finalize their notes. This is the end of the activity.

Note to teacher: If you run out of time have the students share their information back in class.

**EXTENSION/ENRICHMENT:**

(1) The events of May 1915 were similar to the events of Mount St. Helen's eruptions. Read articles about the Mount St. Helen events and compare them to the Lassen events. How were the events the same? How were they different? Why was there such a big difference in the amount of lives lost? (2) Find newspaper articles, books, etc. showing and telling about Lassen's eruptions. (3) Did the eruptions have any affect on the town you live in? If so, what? (4) The location where people settle might mean the difference between life or death. Look at topographical maps of Lassen. Where do you think the affected homesteaders lived? Were all their neighbors equally at risk? Why or why not? (5) What natural disasters could happen in your home area? Can you tell who might be affected and who probably wouldn't? Do you think predictions would always be correct? Are there places you would definitely not build a house? (6) Find out as much as you can about your town in 1915. Read old newspaper articles, look at old pictures, get old timers to come and talk to your class. What was different? What is the same?

**ASSESSMENT:** (1) Have the students give an oral presentation describing the events or scenes of the eruption as reported by the eye witness accounts. (2) Have the students turn in their Reporter Question Sheets, written articles, and notes. (3) Have the students write a short article about the recent volcanic activity as seen by one of the people they have "met." (4) Have the students compare the historical accounts of May 1915 with their impressions of the area as it looks today.

## REPORTERS QUESTION SHEET

1. What have you already heard?

What happened on May 18 and 19?

What did Loomis find?

What happened on May 22?

2. Who did you talk to at the Hot Rock?

Where did he think the water came from?

How deep was the mudflow?

What happened to the trees?

What happened to the Adams' place?

How did the Hot Rock get here?

What happened to Jessen Meadow?

Could it still be used as summer pasture?

3. Who woke Elmer Sorahan up in his tent on Hat Creek?

What did he do when he realized a flood was upon him?

Write notes about what happened at Wid Hall's place.

4. What happened to A.J. Herbert's house and property?

Will he be moving up to graze his animals this summer?

5. If you were standing in the Devastated Area on May 22, 1915 at 4:00 p.m., would you have survived the eruption?

6. Write notes on the eruptions Loomis witnessed on the afternoon of May 22.

Why did he leave the Devastated Area?

Were any lives lost? Why or why not?

7. Write notes from Frank Houston's story.

8. What other information about Lassen Peak's eruption have you learned from walking the Devastated Area interpretive trail?





PHOTO 1 - HOT ROCK ON LOST CREEK



**PHOTO 2 - JESSEN MEADOW BEFORE 1915 ERUPTION MUDEFLOW**



**PHOTO 3 - JESSEN MEADOW AFTER ERUPTION AND MUDFLOW**



PHOTO 4 - HOT ROCK