

Building From Home: week 10—REVIEW

Mr. Lee's Technology class—App Creators, Computer Science for I&M, Design & Modeling, Automation & Robotics
Name: _____ Date: _____ Class Period: _____

Introduction: REVIEW

40 years ago today, Mt. St. Helens blew up. It was massive. A huge mudslide erased valleys, rivers, and anything standing for over 230 square miles. The volcano erupted for nine hours, putting out a 15-mile high ash cloud that was 10 miles across at the base and 40 miles across at the top. Everything stopped in our state. 57 people died. Eastern Washington was covered in 1 to 2 inches of ash. It rained ash in Spokane for several days. People stayed indoors, school was canceled for a short time, and everyone wore masks when they went outside.

Familiar, but different. We have been here before, but differently. On closer review, it reminds us how strong we are.

Remember: you can choose to do PLTW activities for App Creators or CSIM online. See the instructions in Teams. You can do these activity pages as work to keep you engaged in problem solving. You can also do the alternative assignment that just posted in Teams as well. Remember to read carefully. Whatever you do, it will improve your grade.

DIRECTIONS:

Pick one of these activities to start with. Then do another one. Do a third, then more if you have time.

Activity 1: MAKE SOMETHING (building challenge)

1. Your challenge is to make a volcano. If you have some materials like: a cup, some dirt, baking soda, and vinegar.
2. Use a SMALL amount of baking soda and vinegar at first. Then slowly add more until you find the right balance.
3. This is a super basic science experiment that shows what happens when you mix acids and bases. (Hint: energy, gas, and matter are all transferred in this open system. (Plus it's an endothermic reaction. (Look it up.)))
4. Challenge: make a rocket. Tape 3 pencils or straws to the outside of a soda bottle, near the opening. You want the pencils to be above the opening about an inch. Wrap baking soda in a piece of toilet paper. Pour in vinegar, drop in baking soda packet, and put a cork loosely in the opening. Quickly turn it over and set it down. Get back.
5. BE CAREFUL. This can pop quickly and shoot off any which way. Make sure you get permission from your adult.
6. Post a picture of what you do in the WORK section of the student conversation in Teams.

Activity 2: SOLVE SOMETHING (brain work)

1. **Problem** of the week: Move only one glass to make an alternating row of empty and full glasses. (Be careful not to spill any juice.)
2. **Try:** [The Fish Riddle](#) at Ted Ed—watch the video, then answer the questions in the "Discuss" section.



Activity 3: READ SOMETHING (and then summarize)

1. Find a magazine—any article, even online—then read it on your own or to someone else. Then write a summary.
2. Or: read and summarize the article on the back—make sure to include the following in your summary:

• Who is the article about	• What is the article about	• When did it take place
• Where is the action happening	• Why did this event happen	• How was it completed
• Problem or challenge in story	• Result (success or failure)	• Lesson that was learned

Activity 4: DO SOMETHING (for this class)

1. PLTW. You can now do App Creators (MIT App Inventor) or Computer Science for Innovators and Makers (MS Makecode) online. Send me screenshots of code you finish. This week, focus on:
 - a. App Creators: finishing up 1.6 and starting 1.7.
 - b. Computer Science for Innovators and Makers: finishing up 2.2 and starting 2.3.
2. Email me. Let me know what you're working on, any struggles you are having, or materials you may need. I can have Ms. Maddy check out micro:bits or other materials to you during lunch pickup.

Mount St. Helens: The blast that shaped a region

Tue, May 18, 2010 By Jim Camden The Spokesman-Review

MOUNT ST. HELENS NATIONAL VOLCANIC MONUMENT – Whether he’s talking about cottonwoods or huckleberries, salamanders or elk, ecologist Charlie Crisafulli discusses life’s return to the blast zone in almost poetic terms.

Species invade, thrive and crash. A pile of elk dung or a mound of thatch ants are islands of food for a hungry landscape. Nature constantly surprises and shatters the theories of mere humans.

But as he walked down the monument’s Hummocks Trail last week, across from the gaping maw of the crater left by one of last century’s seminal geologic events, he tossed out a bit of detail to give visitors pause.

“This is essentially the insides of the volcano that we’re walking over,” he said of ground that crunched underfoot. “Or at least it was 30 years ago.”

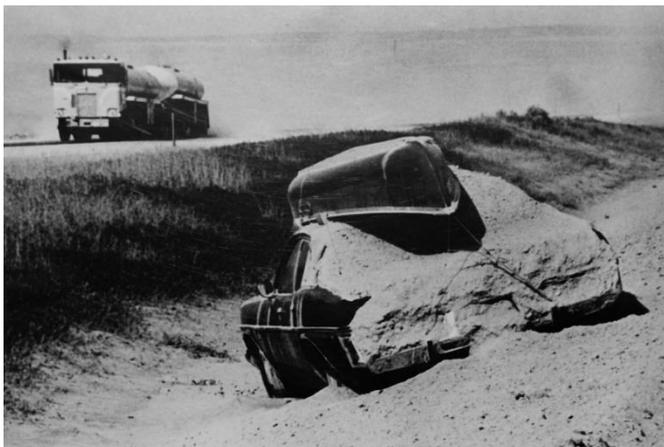
Totally gray

After several months of seismic buildup, Mount St. Helens’ eruption on May 18, 1980, may have been among the most anticipated in modern history. But the size and force of the blast, the landslide and mudflow from superheated snow were far beyond expectations.

A magnitude-5.1 earthquake below the volcano triggered a blast that blew out the top 1,300 feet of the volcano, pushing some 3.7 billion cubic yards of debris to the north and west. Temperatures in the blast zone reached an estimated 600 degrees Fahrenheit. Trees were snapped off and laid down like dominoes. An avalanche of debris rushed down the North Toutle River, raising it as much as 600 feet in some spots, wiping out bridges and burying roads. Fifty-seven people died.

A cloud of ash rose an estimated 15 miles into the atmosphere in less than 15 minutes and was pushed east-northeast by the winds. In two hours it reached Eastern Washington and North Idaho, and by the next morning it had spread across Wyoming, Colorado and the Dakotas, the western edge of Minnesota and the northern edge of New Mexico.

Ross Graham, a Weyerhaeuser forester in the area, remembers flying over the blast zone two days later: “It was totally gray, as far as the eye could see, with a lingering sulfur yellow in the air. I couldn’t even tell where we were. My initial thought was we’ll probably just have to walk away from this.”



The ash from the Mt. St. Helens eruption blankets the region.



Going outside after the eruption of Mount St. Helens meant wearing some type of mask to filter out the swirling clouds of ash during the months after the May 18, 1980 event. (S-R)

But by late spring the first signs of life were already returning, he recalled. Sword ferns were poking through the ash. Later that summer, fields of fireweed sprung up.

World’s largest lab

Crisafulli arrived in the blast zone in July 1980, a 22-year-old environmental scientist who had studied the desert Southwest, the closest thing anyone could compare to it. He didn’t expect to stay long, but serendipity presented him with the chance of a lifetime.

“Being at the right place at the right time can shape your life. This place left an imprint on every aspect of my life,” he said.

“This place” is the national volcanic monument, some 110,000 acres of protected land around the volcano, where the middle

third is dedicated to the world’s largest ecologic laboratory studying the way nature reclaims the land. Three decades of research have wiped away old theories of a linear progression of smaller to larger plants and animals, showing that many species colonize a blank slate like the blast zone at the same time. Studies in the monument have spawned hundreds of research papers. Researchers get called for advice or assistance with other eruptions, and even some man-made messes like the cleanup of old mines.

“St. Helens gives us a look into the window of natural forces that have shaped not only the Cascades but areas around the world,” Crisafulli said. “The more we know about the processes that shape our world, the better stewards we’re going to be.”

Research vs. resource

Driving into the monument from the west on state Highway 504, a visitor passes miles of firs reaching 50 feet or more into the sky on Weyerhaeuser tree farms that bear signs stating when they were planted and when they’ll be harvested. The company had 68,000 acres affected by the blast; after the eruption it swapped some land closer to the volcano for government land elsewhere but replanted 7,000 acres with seedlings that its foresters fertilized and nurtured.

Some stands are so thick they must now be thinned, with logs being turned to lumber or wood chips. In the early spring, crossing over from the thick green of the tree farms to the more open spaces of the monument can be jarring to a visitor. It’s also annoying to some local residents, like Sam Gardner, who thinks the federal government should replant much of the blast zone the way Weyerhaeuser did, and open as much of the area as possible, as quickly as possible.