Kristen Charbonnet
Social Studies (with an emphasis on science and geography)
Grade: 5
The Hawaiian Islands

Objective/Purpose:
The purpose of this lab is to teach the students how the Hawaiian Islands were formed. They will learn such things as what a volcano is, what kinds of rocks are formed from volcanoes, and what part of the earth lava comes from. The students will also learn more about the four layers of the earth. Lastly, they will learn more about the scientific method by applying it to the lesson.

QCC:
Earth Science 17 and 19.

- A lampshade that can be disguised as a volcano.
- Paint to make the volcano look like it is real.
- A cup to fit into the middle of the lampshade.
- Baking soda
- Vinegar
- A plastic board for the volcano to sit on.
- Play dough for each student in the classroom.

Time required:
One class period or 60 minutes.

Background Information:
The Hawaiian Islands are volcanic in origin. Each island is made up of at least one primary volcano, although many of them are composites of more than one. The primary volcanoes on each island are known as shield volcanoes. A volcano is a mountain that opens downward to a pool of molten rock below the surfaces of the earth. The lava from a volcano comes from the earth’s mantle and when a volcano erupts, the mantle produces igneous rocks.

Preparation:
Have the students clear off their desks to prepare for the activity. Hand the students play dough and ask them to build what they think a volcano looks like. While the students are constructing their volcano models, make sure that you are preparing the volcano eruption for the class. Before you perform the eruption, have the students apply the scientific method to the experiment. Discuss both the scientific method and their models. When the discussion is over, place a cup half filled with baking soda into the top of the volcano. Add a little but of vinegar to the cup at a time. This should cause the eruption. Make sure that you are not near anything that could get damaged. Most of the time, this experiment can get very messy. Make sure that all of the students are able to see the experiment and observe what happens.
Safety Issues:
Make sure that the students do not eat the play dough. Do not let the students eat or touch the baking soda and vinegar.

Activity Outline/Teacher Procedures:
Make sure to walk around as the students are building their volcanoes. Before you actually perform the volcanic eruption, make sure to have the students go through the steps of the scientific method. When you have completed the experiment, let the students discuss what they observed.

Possible Questions:
On the attached handout.

I evaluated this lesson based on how the students worked to build their volcanoes and how they reacted to the eruption. I found it rewarding for the students when they helped each other form the volcanoes. I think having this hands on lesson gave the students a better understanding of what a volcano is and what it does.
The Hawaiian Islands

This should be review for you:
Label the four parts of the earth including the inner core, outer core, mantle, and crust.

Do you know how the Hawaiian Islands were formed?

What is your definition of a volcano?

What kinds of rocks are formed from an erupting volcano?

What part of the earth does the lava form from?
Let's apply the scientific method to this lesson:

**HYPOTHESIS:** What do you think will happen to the volcano when I mix the baking soda and vinegar?

**EXPERIMENT:** Watch me perform the eruption and...

**CONCLUSION:** What happened? Record your observations.