Will She Blow?

By Shirley Peters and Tammy Lashway

Grade: 1-4
Time Frame: four 30-minute lessons (plus field trip and optional activity)

Standards Addressed 4th Grade
Science Content Standard 1: Benchmark 1, 2
Science Content Standard 2: Benchmark 2
Science Content Standard 4: Benchmark 1, 2
Speaking and Listening Content Standard 1: Benchmark 2
Speaking and Listening Content Standard 2: Benchmark 2, 3, 4, 5
Speaking and Listening Content Standard 3: Benchmark 1

Focus: At the end of the lesson students will:

1. Be able to identify the characteristics of a volcano.
2. Be able to identify if a mountain is a volcano or not.

Summary: Students in the Deer Lodge valley are curious to know if Mt. Powell is a volcano. We will identify the characteristics of a volcano and discover whether Mt. Powell (or any other mountain) is a volcano.

Exploration:
Teacher: Looking at the mountains in this valley, do you think that we have a volcano? We will be learning what makes a mountain a volcano and discovering whether Mt. Powell is a volcano or not.

Discussion Questions:

1. Have you ever been to visit a volcano? What was it like?
2. What kinds of rocks would be found on a volcano?
3. Besides rocks, what else might be a clue that a mountain is a volcano?
4. Do you think Mt. Powell is a volcano or not? (this is an hypothesis).

Definitions:
Volcano- A volcano is a mountain toped with vents, holes and craters. When the volcano erupts lava, ash, cinders, dust and hot gas can pour out the top. Magma (when its deep in the ground) or lava (when it reaches the earth's surface) is very hot, liquid rock. When lava cools down, it turns into hard rock. Ash is a gray powder that results from material being burned in the volcano. Ash can be carried in the air for many miles.
http://www.42explore.com/volcano.htm

Craters- a bowl-shaped opening at the top of a volcano

Vents- An opening in the earth's crust permitting the escape of fumes, a liquid, a gas or steam.

Lava- Molten rock that reaches the earth's surface through a volcano or fissure.

Igneous Rock- The rock formed by the cooling and solidifying of molten rock.

Ash-consists of very fine rock and mineral particles that are ejected from a volcanic vent.

Cirque of a glacier- the head of a glacier where the ice is originally formed (starting point of a glacier).

Definitions of terms found at http://www.answers.com/topic/lava or http://volcanoes.usgs.gov/Products/Pglossary/volcano.html

Materials Needed:

1. Pictures of volcanoes
   http://volcano.und.nodak.edu/
   http://www.fema.gov/kids/p_vol.htm
   http://www.fs.fed.us/gpnf/mshnvm/
2. Igneous rock samples
3. Non-igneous rock samples
4. Rocks from mountain in question
5. Pictures of Mt. Powell (or mountain in question) and other mountains
   http://www.widerange.org/gallery.php?gallery=Favorites
   http://www.bondpix.com/djwilliamsphotography/Panoramic_Print_Shop/slides/Mt_Powel_Crater_panorama.html -Mt Powell
   http://earth.google.com -find your mountain
6. Ash sample if available
7. posterboard

Activity:

Day 1: Divide class into groups. Assign each group a vocabulary word to define (volcano, crater, vents, lava, igneous rock, ash). Each group will display their word, definition and provide an illustration (using poster board). Have each group present to the class.

Day 2: Examine pictures of various volcanoes and non-volcanic mountains. Look for characteristics of volcanoes (craters, vents, cone shape…) Determine which pictures are of volcanoes.

Day 3: Examine samples of igneous and non-igneous rocks. Determine which rocks are igneous.

Day 4: Examine photos of Mount Powell (or mountain in question) and rock samples from Mount Powell. (Optional—take students to the mountain to observe and gather rock samples). Determine if Mount Powell is a volcano or not from the clues discovered.

Optional Activity that students love!
Create a volcano model.
http://www.beloit.edu/~SEPM/Earth_Works/Modeling_a_Volcano.html - alka seltzer model
http://volcano.und.edu/vwdocs/volc_models/model.html-many options for building models