

PROBLEM STATEMENTS

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How do scientists predict volcanic eruptions?

[One way is to monitor seismic activity around the volcano. The first evidence of an impending eruption is usually a series of seismic events or earthquakes. In order for an eruption to occur, lava must rise from its formation zone deep underground to near the surface. The lava must literally push overlying rocks aside to rise through them. The rocks are brittle and break as they are bent and twisted, releasing seismic energy that we record as earthquakes. By placing a number of seismic recorders around a volcano, the movement of the new mass of rising lava can be followed.

What will happen to the glaciers on the top before and during an eruption and where will the water go?

[As magma builds, the ground water supply heats up, and snow and ice may melt and cause increased water flow. I wonder if this can be used to predict an eruption.]

What are lahars, what are they composed of, and where will they travel?

[LAHAR- A flowing mixture of water - saturated rock debris that forms on the slopes of a volcano, and moves downslope under the force of gravity, sometimes referred to as debris flow or mudflow. The term comes from Indonesia. Lahars occurred at Mt. St. Helen's in 1980.]

What are pyroclastic flows?

[Ash flows are turbulent mixtures of hot gases and pyroclastic materials carried with such force and speed that they level anything in their paths. The French term, "nuee ardente," for "glowing cloud" is used to describe the intense heat carried through the air.]

What was the character of past eruptions in the Cascade chain?

[The mud flows from Mt. St. Helen's dumped more than 75 million cubic yards of sediment into rivers, valleys, and reservoirs. Several pyroclastic flows left about 0.05 cubic mile of deposits in this area. About 230 square miles were devastated by the eruption.]

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