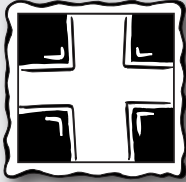


# Don't Be Scared - Be Prepared!

Living with a VOLCANO in Your Backyard  
MOUNT RAINIER



Grade Level: 2-12

## Learner Objectives:

Students will:

- Recognize the four steps for greater preparedness
- Possess materials that help prepare students, their class, and family for natural disasters

Setting: Classroom

## Timeframe:

*“Emergency Contact Paper”* –Homework Assignment: 20 minutes class

*“Home Treasure Hunt for Disaster Kit Supplies”* –Homework Assignment: 30 minute class

*“Assemble a Classroom Emergency Kit”* –Homework Assignment: 50 minutes class

*“Develop a Safety Plan for Your School”* – Homework Assignment: 50 minutes class



## Living with a Volcano in Your Backyard- An Educator's Guide with Emphasis on Mount Rainier

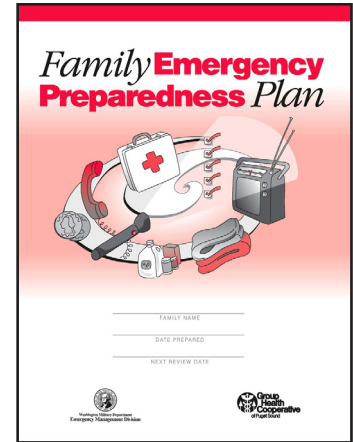
Prepared in collaboration with the National Park Service

U.S. Department of the Interior  
U.S. Geological Survey

**General Information Product 19**

## Overview

Students learn simple steps for developing preparedness by performing basic tasks with their class and family for natural disasters.



## Materials:

### *Visualizing Topography*

- “Family Emergency Preparedness Plan” (included)
- Aid from family members for development of contact list
- Literature distributed by American Red Cross and Emergency Management Departments, student contact information. (Optional)

### *Home Treasure Hunt for Disaster Kit Supplies*

- “Family Emergency Preparedness Plan” (included)
- Home resources for Family Disaster Supplies Kit

### *Assemble a Classroom Emergency Kit*

- “Family Emergency Preparedness Plan” (included)
- Materials for emergency kit

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Don't Be Scared

Chapter 3

## *Develop a Safety Plan for Your School Assemble a Classroom Emergency Kit*

- “Family Emergency Preparedness Plan” (included)
- Existing school safety plan

**Skills:** Interpret, apply, participate

**Vocabulary:** Cascadia Subduction Zone, Disaster Supplies Kit, Emergency Contact Information, Family Emergency Preparedness Plan, volcanic hazards

## **Benchmarks:**

### *Science:*

- 3 – Application: The student knows and applies science ideas and inquiry to design and analyze solutions to human problems in societal contexts. Scientific design process skills are used to develop and evaluate scientific solutions to problems in real world contexts. The application of an understanding of systems and inquiry is comprised of two components:
  - 3.1 – Designing Solutions: Apply knowledge and skills of science and technology to design solutions to human problems or meet challenges.
  - 3.2 – Science, Technology and Society: Analyze how science and technology are human endeavors, interrelated to each other, to society, and to the workplace and the environment.

## Teacher Background

Residents and visitors to the Pacific Northwest are at risk from a variety of potential natural processes—windstorms, floods, earthquakes, tsunamis and volcanic phenomena. Emergency officials recommend that families prepare to “shelter in place,” meaning reliance on home-stored supplies of food, water and medicine for a minimum of 72 hours. They recommend that each family prepare an emergency contact list and have knowledge of evacuation routes.

When families are adequately prepared, emergency officials can focus their efforts on larger issues of community recovery, such as performing necessary evacuations, coordinating emergency workers, and keeping transportation facilities and utilities intact. In this educator guide, we’re concerned primarily with volcanic hazards. However, if you are prepared for volcanic unrest with the procedures listed below, you will be ready for other natural hazard emergencies, as well.

In the accompanying document, *Family Emergency Preparedness Plan*, officials recommend the following four steps toward preparedness:

- ◆ Find out what disasters could happen to you.
- ◆ Create a disaster plan.
- ◆ Put your plan into action.
- ◆ Practice and maintain your plan.

### *How do I know if I am at risk from volcanic hazards?*

Hazard assessments have been assembled for many Cascade volcanoes. For an in-depth discussion of volcanic hazards and a hazards map of Mount Rainier, visit the activity **The Next Eruption of Mount Rainier**. Find references for volcano hazard assessments for other volcanoes on the **Internet Resources Page**.



*Studies by emergency managers show that information about preparedness that is discussed in the classroom does not always reach home and prompt improved home preparedness. Teacher assignments that require family discussion enhance family preparedness. In the words of emergency managers, development of an emergency contact list that involves all family members is the single most valuable preparedness homework that a teacher can assign.*

## Procedure

### Preparing Your Students

Write a journal entry about a volcanic eruption to assess knowledge of volcanic processes and terms.

1. Discuss the reasons for preparedness with your students, as noted in the teacher background above. Inquire about students' experiences with the listed natural hazards. Discuss the hazards that affect either your community or another nearby. If you have questions about hazards in your community, contact your local emergency-management agency.
2. Motivate students' thinking by asking them a series of questions about their present state of preparedness. For example, ask them to make a list of emergency measures that would be required if they could not leave their home for 72 hours. Ask how they would contact their family if they were unable to join or phone them at home. What items would they choose to take with them if they had reason to evacuate their home? Listen to students' perceptions of current preparedness in their homes.
3. Conduct Procedure *A* (below) and one or more of the other procedures, *B* through *D* listed below.

#### *A. Emergency Contact Information*

Students work with their family to prepare a list of family emergency contacts. Use the "Emergency Telephone Numbers" form in the accompanying "Family Emergency Preparedness Plan" as a guide (page 25 of the document). In the Pacific Northwest, emergency managers recommend that out-of-area contacts be chosen from areas outside the Cascadia Subduction Zone, the geologically active region that stretches from Vancouver, British Columbia, to just north of San Francisco, California, and from the Pacific coast to central Washington, Oregon, and California. After checking for completeness, make photocopies of the form—one for the student and the other for the family. Students should keep this list, or a version at reduced size (an index card works well) in their school folder or backpack.

#### *B. Home Treasure Hunt for Disaster Kit Supplies*

Using the Emergency Preparedness Checklist as a guide, go on a treasure hunt in your home to accumulate items for your family disaster supplies kit. Refer to recommendations on pages five through seven of the accompanying Family Emergency Preparedness Plan. Check off items you find and make a list of those your family needs to obtain to complete your emergency preparedness kit. Review your list with your family and prepare a plan to complete your kit. Also, review volcano-preparedness measures in the accompanying

# Don't Be Scared-Be Prepared continued...

list entitled Volcanic Ashfall—How to be Prepared for an Ashfall and determine your family's preparedness for a volcanic eruption. Place a copy of your community's volcano evacuation plan (if one exists) with your emergency plan. If these items are unavailable, contact the American Red Cross or your local emergency management agency to obtain copies or similar literature. Facilitate a class discussion about students' findings on their home treasure hunt to conclude the activity.

## ***C. Assemble a Classroom Emergency Kit***

Become familiar with your classroom's emergency preparedness kit and procedures that you will follow during a hazardous event, such as an earthquake, a volcanic eruption, or lahar. Discuss the value of a NOAA Weather Radio.

## ***D. Develop a Safety Plan for Your School***

Contact a member of a local emergency management agency and invite them to your classroom. Ask them how they would advise you to respond during a natural hazards emergency such as a windstorm, earthquake, flood, or volcanic eruption. Invite them to visit your school and prepare a list of questions to ask prior to their visit. Finally, develop a plan for how your class will respond to volcanic eruptions.

## **Adaptations**

- ◆ Volcano hazard workgroups have developed plans of action for other Cascade Range volcanoes. Perform an Internet search for them. In Washington, the plans are found on the Emergency Management Division website.
- ◆ Direct younger students to draw a picture of a volcanic eruption and label the drawing.

## **Extensions**

- ◆ Students and teachers can prepare wallet-sized emergency contact cards to be kept in wallets and backpacks, or in the inside jacket of book covers.
- ◆ Use library or internet resources to learn about a natural disaster and how people's preparedness, (or lack of it), helped or hindered their recovery from the event.
- ◆ Create a poster that encourages others to be prepared for natural disasters. Use paint, crayons, computer, etc. to produce your poster.

## Assessment

After completing this activity, students should be able to develop their own emergency contact list, disaster supplies kit, and a disaster plan. They should have an enhanced awareness of the procedures to follow during an emergency at their school. Assess each student's ability to record information in a practical form and then recall it.

## References

- Driedger, C., and Scott, K., 2002, Mount Rainier--Learning to live with volcanic risk: U.S. Geological Survey Fact Sheet 034-02, 4 p.
- Dent-Cleveland, Laurie, 1003, The beautiful mountain in the sky--How to be safe if a lahar flows down the mountain: Washington Military Department--Emergency Management Division, Elementary Edition K-6 Booklet: 24 p.
- Federal Emergency Management Agency and American Red Cross, 1993, Helping children cope with disaster: FEMA L-196, ARC 4499, 4 p.
- Harris, Stephen L., 2005, Fire mountains of the west: The Cascade and Mono Lake volcanoes: Missoula, Mont., Mountain Press Publishing Company, 480 p.
- Hoblitt, R.P., Walder, J.S., Driedger, C.L., Scott, K.M., Pringle, P.T., and Vallance, J.W., 1995, Volcano hazards from Mount Rainier, Washington--1998 volcano-hazards assessment report: U.S. Geological Survey, Open-File Report 98-428, 11 p.
- Kennedi, C.A., Brantley, S.R., Hendley II, J.W., Stauffer, P.H., 2000, Volcanic ash fall--A "Hard Rain" of abrasive particles: U.S. Geological Survey Fact-Sheet 027--00 (revised April 2002), 2 p.
- Myers, Bobbie, Brantley, Steven R., Stauffer, Peter H., and Hendley II, James W., 1998, What are volcano hazards? (revised April 2002): U.S. Geological Survey Fact Sheet 002-97, 2 p.
- Mount Rainier Volcano Hazards Work Group, 1999, Mount Rainier volcano hazards response plan: Pierce County Department of Emergency Services, 103 p.
- Prager, Ellen J., and Woodman, Nancy, 2001, Volcano!: Washington, D.C., National Geographic Society, 32 p.
- Washington Emergency Management Division, Group Health Cooperative, and Puget Power, 1996, Family Emergency Preparedness Plan, 25 pages. (Included with this activity)

# Don't Be Scared-Be Prepared continued...

Washington Military Department Emergency Management Division and U.S. Geological Survey, Cascades Volcano Observatory, 1999, Volcanic ashfall--How to be prepared for an ashfall: Washington Emergency Management Division and U.S. Geological Survey, 3-page tri-fold.



Refer to **Internet Resources Page** for a list of resources available as a supplement to this activity.