



## A Season to Remember

It's spring time again! The flowers are growing, the birds are chirping and the sun is shining.

Did you know that this year will be the 34th anniversary of the eruption of Mount St. Helens?

The morning of May 18, 1980, Mount St. Helens erupted. The eruption caused the largest **debris avalanche** ever recorded. A **debris avalanche** is a type of landslide caused by erupting volcanoes. It is made up of rock, soil, snow, trees, bridges, buildings, and anything else in its way. The Mount St. Helens's **debris avalanche** also contained **lahars**. **Pyroclastic flows** followed the debris avalanche.

What are **lahars** and **pyroclastic flows**?

**Lahars** are volcanic mudflows that feel something like pudding or wet cement. Lahars are created when a debris avalanche mixes with large amounts of melted snow and water.

**Pyroclastic flows** are a fluid-like mix that consists of solid pieces of earth and hot expanding gases that came from inside the volcano.

The Mount St. Helens eruption lasted nine hours. It caused a lot of damage to the mountain and



(photo from <http://volcanoes.usgs.gov>)

the land near the mountain. About 150 square miles of forest was destroyed.

The eruption also sent a large amount of volcanic ash into the atmosphere.



(photo from <http://volcanoes.usgs.gov>)

The wind spread the ash all over the Pacific Northwest. In Spokane, located about 250 miles away from the volcano, the sky became as dark as night in the middle of the afternoon. About half an inch of volcanic ash fell in Spokane. When the volcanic ash fell it looked like it was snowing. Ash was carried as far away as 930 miles from Mount St. Helens's.

### Volcanic Ash - Good and Bad

When a volcano erupts it blows out **tephra** (fragments of rocks and particles) into the atmosphere. Volcanic ash is made up of the smallest particles of tephra.

Volcanic ash in the air can cause eye, skin, and respiratory irritation in living creatures. Volcanic ash can cause machines to short circuit and it can clog air filters in engines. Thick volcanic ash can smother and kill plants.

But volcanic ash can also have good effects. Ash contains minerals plants need and it can keep more water at the plant roots. Many farmers in our area had better crops in 1980 because of the volcanic ash.

## Volcanoes and the Atmosphere

When a volcano erupts, tons of volcanic ash particles and gases are thrown into the atmosphere. This can cause changes to the weather and climate.



The main weather effect during a volcanic eruption is a lot of rain, lightning and thunder. This is because ash particles attract and collect water droplets. The force of the eruption and charged particles that are released can lead to thunderstorms. Also the large amounts of volcanic ash and gases can produce big, dark clouds and reduce visibility.

Another weather effect is vog, or volcanic fog. This is commonly found in Hawaii where ongoing eruptions cause lava to flow into the ocean. The volcanic gas, made up of mostly sulfur dioxide, mixes with the ocean water. The sulfuric acid droplets mix with water droplets and produce a volcanic fog that moves with the wind.

## The Cascade Range

The Cascade range is a mountain chain that stretches from the Fraser River in British Columbia to Lassen Peak in northern California. Five of the fifteen volcanic peaks in the Cascade range are located in Washington state.

The five volcanic peaks are Mount Baker, Glacier Peak, Mount Rainier, Mount St. Helens, and Mount Adams.

Mount Rainier and Mount St. Helens were named by Captain George Vancouver when he was on an expedition in 1792. Mount Baker was named after Joseph Baker, a British Third Lieutenant who accompanied George Vancouver on his expedition.

Mount Adams on the other hand was named after the second president of the United States, John Adams. Glacier Peak was named after the 11 glaciers that it has on its sides.



## Community Calendar:

**April 12 - 13 :**     **Bike Swap**  
Spokane County Fairgrounds  
9 a.m. - 3 p.m., admission fee

**May 31 :**           **Floods, Flowers, and Feathers Festival**  
Turnbull National Wild life  
Refuge 8 a.m. - 3 p.m.

**April 26 :**           **Earth Day**  
Riverfront Park

**Arbor Day**  
Finch Arboretum  
11 a.m. - 2 p.m.

Email us of photo  
of you at Earth Day  
or Arbor Day and  
you could earn 5  
points!

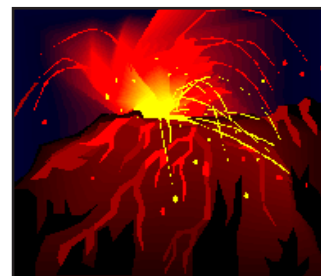
## Build a Volcano

### What you will need:

Empty plastic bottle  
Baking soda  
Vinegar  
Funnel  
Squirt of whipping cream  
Sand/dirt

Fill half of the plastic bottle with baking soda and add some squirts of whipping cream. Put the cap on the bottle. Now go outside and bury the plastic bottle with the cap on so that no dirt/sand will go in the bottle. Once you have created the mountain with the bottle in the middle take off the cap and add vinegar. Finally sit down and enjoy the show.

Members can earn  
5 points. Email us  
a photo of your  
creation!





# Fun & Games!

Unscramble these words to learn the names of mountains in Washington state.  
(See Cascade Range article for hints!)

Members can earn 5 points each by completing activities on this page!

TUONM NAIERI: \_\_\_\_\_

TMNOU TS. SHENLE: \_\_\_\_\_

MTONU BRAEK: \_\_\_\_\_

OUNMT ASMDA: \_\_\_\_\_

LRAGIEC KEPA: \_\_\_\_\_



Answers: Mount Rainier, Mount St. Helens, Mount Baker, Mount Adams, Glacier Peak

(photo from <http://volcanoes.usgs.gov>)

## Word Match!

Match the word to its definition. Draw a line to connecting the two.

1. Volcanic Ash

A. A fluid-like mix that consists of solid pieces of earth and hot expanding gasses that came from inside the volcano.

2. Debris Avalanche

B. Fine bits of lava that are shot out of the volcano when it erupts.

3. Lahars

C. A mixture of soil, snow and rock that happens when the side of a volcano or mountain caves in and slides down.

4. Pyroclastic Flows

D. Fragments of rocks and particles blown into the atmosphere by volcanos.

5. Tephra

E. Created when a debris avalanche mixes with large amounts of melted snow and

Answers: 1B, 2C, 3E, 4A, 5D



## EnviroKids' Club

EnviroKids' Club  
c/o Spokane Regional Clean Air Agency  
3104 E. Augusta Ave.  
Spokane, WA 99207

PRSR STD  
U.S. Postage  
**PAID**  
Spokane, WA  
Permit No. 722

**See inside for  
Activity Details!**

Members can earn 5 points  
by completing each special  
EnviroKids' activity that is  
marked with a gold star!

## EnviroKids'... caring for the Earth

EnviroKids' Club provides its 200+ members with information and activities to explore aspects of the environment: air, water, weather, garbage and recycling, plants and animals. The Club is open to all Spokane County residents who are in grades K-6.

Club members receive a newsletter in the mail four times a year. The newsletter contains activities to complete and ideas for activities at home or in the community. Members who are interested can complete activities and/or participate in some of the events to earn points. Earned points can then be used to trade-in for prizes. **Members need to participate in at least one activity per calendar year to receive newsletters.** For more information, visit [www.spokaneenvirokids.org](http://www.spokaneenvirokids.org).

**To earn points, mail your completed activities by June 30, 2014 to:**

EnviroKids' Club c/o National Weather Service  
2601 N. Rambo Rd. Spokane, WA 99224

Fill in this form with the activities page complete and send it back to us to earn your points! Do you have a friend or sibling who would like to join Envirokids' Club? Copy this page for them to send in and be added to our mailing list.

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Grade: \_\_\_\_\_ School: \_\_\_\_\_

Home Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ Zip Code: \_\_\_\_\_

E-mail Address: \_\_\_\_\_ Phone: \_\_\_\_\_

My child has permission to participate in EnviroKids' Club activities that I accompany him/her to and permission is granted to use his/her photo that may be taken at such event, for promoting the Club (newsletter, flyers, ads, website, etc.)

Parent Signature. Please print name, then sign and date

*EnviroKids' Club Partners: National Weather Service, Spokane Aquifer Joint Board, Spokane Conservation District, Spokane County Water Resources, Spokane Regional Clean Air Agency, and Spokane Regional Solid Waste System.*

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