

NGSS Standard: 2-ESS1-1



Adventure Description:

In this adventure, you will think like a volcanologist and make observations of two volcanoes.



Activity

Step 1: Background on Volcanologists and Volcanoes (5 minutes)

- Play [Video: Traveling to Volcanoes](#).
- As a class, discuss the difference between active and dormant volcanoes. Discuss how active volcanoes change quickly because they erupt. A volcanic eruption happens very quickly! Dormant volcanoes change slowly. For example, it takes a long time for a volcano to grow!

Step 2: Building an Active Volcano (10-15 minutes)

- Explain to students that they will first build an active volcano that erupts.
- Divide students into groups of 2-4.
- Provide each group with [Handout: Volcanologist's Notepad](#). Explain to groups that they will fill out the first page (Active Volcanoes). Explain to groups that they will each make a prediction about how long it takes for a volcanic eruption to occur. Have groups write down their prediction.
- Next, give students [Handout: How to Make an Active Volcano](#) and the following supplies: disposable pan or bowl, 1/4 cup of baking soda, 4 drops of food coloring, 2 Tablespoons of vinegar, and a stopwatch.
- Have groups follow Step 1 on [Handout: Steps to Make an Active Volcano](#). Groups should put baking soda into the pan and add 4 drops of food coloring.
- Next, groups should follow Step 2. One person should get the stopwatch ready and say "go!" The person in charge of the stopwatch will tell the group when to start the volcanic eruption. They will time how long it takes for the volcanic eruption to occur.

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Traveling to Volcanoes

- Next, groups should follow Step 3. When "go!" is stated, another person should pour the vinegar on top of the baking soda. Be sure to have students time the eruption until it completely stops!
- Groups should fill out [Handout: Volcanologist's Notepad](#) with their results.

Step 3: Building a Dormant Volcano (10–15 minutes)

- Explain to groups that they will now build a dormant volcano. The only rule is that the dormant volcano must be at least 12 inches tall.
- Have groups write their prediction down on [Handout: Volcanologist's Notepad \(Dormant Volcanoes\)](#).
- Provide students with [Handout: How to Make a Dormant Volcano](#). Read through steps as a class.
- Have groups follow the steps to build their volcano and complete the handout.

Step 4: Class Reflection (5–10 minutes)

- As a class, discuss how long it took the active volcano to erupt and the dormant volcano to be built. Which one took longer? Discuss how some events occur quickly (active volcano erupting) and some events occur slowly (building an active volcano).

Materials List

Provided online:

- Video: Traveling to Volcanoes
- Handout: How to Make an Active Volcano
- Handout: Volcanologist's Notepad
- Handout: How to Make A Dormant Volcano

Not provided (each group needs)

- Stopwatch
- Ruler
- Disposable bowl or pan
- 1/2 cup of baking soda
- 2 Tablespoons vinegar
- 4 drops food coloring

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