

Old Faithful Experiment

Geysers are tube-like openings in the Earth's surface that run deep into the middle of the earth. The tube is filled with water. Near the bottom of the tube is very hot rock called **magma**, which heats the water, making it dangerously hot. As the water begins to boil, a portion of the water is forced upward. Some of the water turn to water vapor – a gas. The vapor and water rises rapidly toward the top and explodes out of the hole in the earth's surface. Which explode out of the hole on the earth's surface. After the release of the pressure, the water slowly seeps back into the hole and the process begins again. The most famous geyser in the United States, Yellowstone National Park's Old Faithful, erupts about every 50-100 minutes.

YOU WILL NEED

- Water
- Liquid soap
- Empty bottle with a narrow neck (like old fashion soda bottles)
- Alka Seltzer tablets
- Large container, basin or tub
- Paper towels and sponges (for clean up)
- Safety glasses or goggles
- Parental assistance

STEPS

1. Before beginning, have all participants put on their safety glasses. If you do not have safety glasses, make sure you step at least 6 ft away to observe this experiment.
2. Place the empty bottle into the tub or basin.
3. Fill the empty bottle with warm water almost to the top.
4. Add a few drops of liquid soap in the bottle with the water.
5. Break up an alka seltzer tablet and drop a small piece into bottle. With a parent or guardian's help, IMMEDIATELY place the palm of your hand over the top to seal the bottle.
6. Lift your hand off top of bottle and step back at least 6 ft to observe your geyser in action from a safe distance. What do you hear? What do you see?
7. Enjoy the "pop" and eruption!
8. Repeat the steps above to conduct this experiment again. Try adjusting the variables of this experience to see how it affects the reaction of your geyser. Does the size of your alka seltzer affect your eruption? Was the eruption smaller or larger? Does the amount of water in your bottle affect your experiment? Try this experiment using less water. Try this experiment using 3 drops of soaps to begin with. What happens if you add 10 drops of soap? 15? 20? Record your observations.

