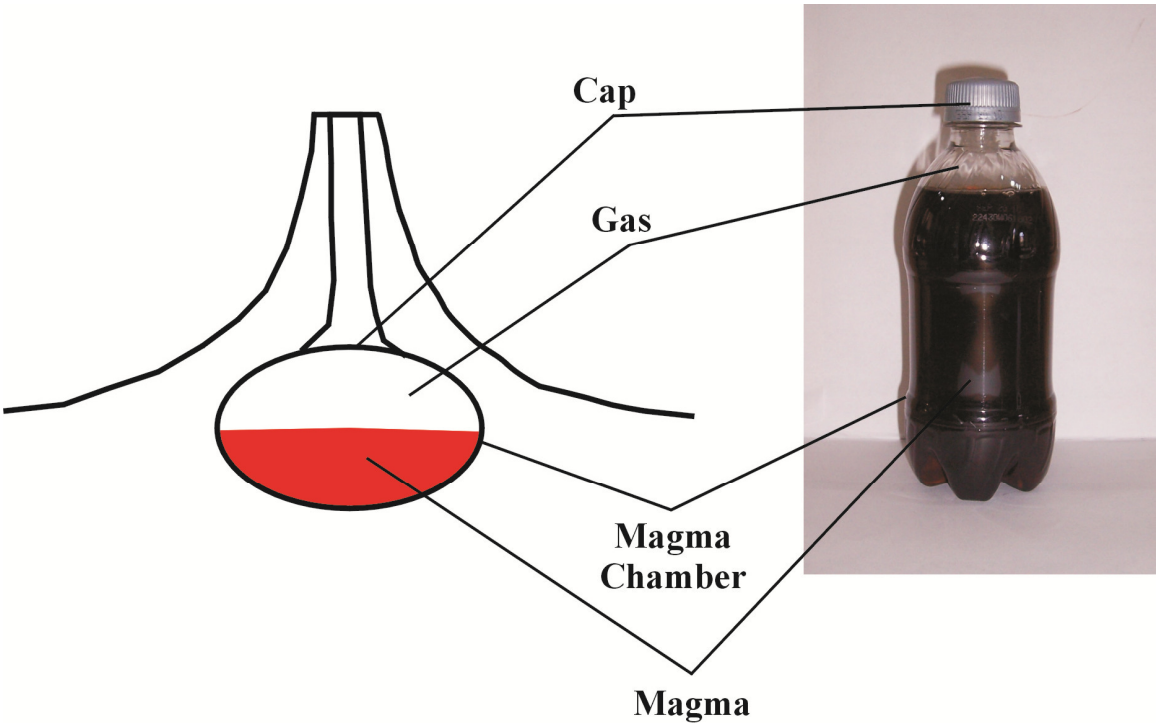
Demonstrating a volcanic eruption using a soda bottle
Geological Lesson

How is a magma chamber like a soda bottle? Well let's look at what a magma chamber is. A magma chamber is an enclosed space that contains magma as well as dissolved gases. The more gas that is dissolved into the magma the greater the pressure there is on the magma chamber. The magma chamber then is sealed in some way. This is usually by a previous lava flow, providing a lava "cap" on the chamber. When this cap is removed or broken the pressure is released and the gas forces the magma out of the magma chamber producing a volcanic eruption.

A soda bottle is an enclosed space with a cap. It contains liquid soda as well as carbon dioxide (CO_2) added into the mixture. When shaken up the CO_2 is mixed into the soda producing higher amounts of pressure on the bottle. When the pressure is release, either through removing the cap or puncturing the bottle in some way, the gas and the soda are forced out of the bottle.



So, a magma chamber is a lot like a shaken soda bottle. The shaking produces the same effect of having the gases dissolved in the magma. Although, there have been recent studies that have shown that the number of volcanic eruptions increase the following year after a major earthquake.

Step 1: Use a small bottle of soda. Shake the bottle up for a little bit (roughly around 5 minutes). Describe the similarities between a magma chamber and a soda bottle while you are shaking this up.

Step 2: Place the bottle on the ground and puncture the cap with something. I find a Phillips head screwdriver the best. You don't want to open the cap because then the soda will explode sideways, instead of upwards.