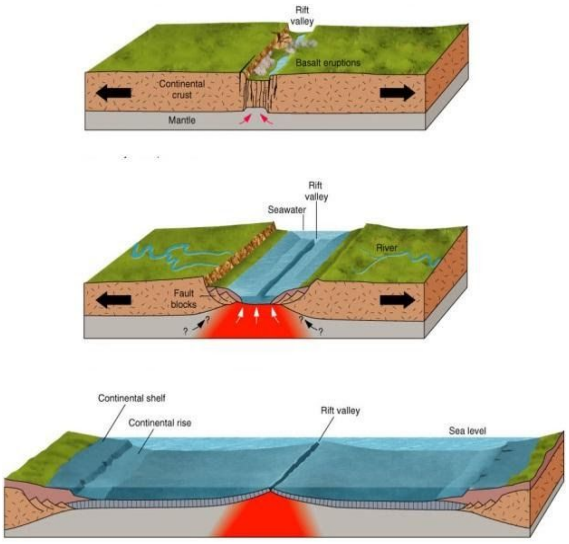
Try This at Home Science:
Volcanic Slime

Activity Overview:
Use slime to see how rift valleys release volcanic gases!

Materials:
- Slime of choice from the *All the Slime* activity guide
- Straw
- Plastic wrap
- Baking sheet
- Ziploc bag

Try this!
1. Make a batch of your favorite slime recipe from the *All the Slime* activity guide.
2. Cover the cookie sheet with plastic wrap to make clean-up easier.
3. Take the straw and place it on the baking sheet.
4. Place the slime on top of the straw.
5. Gently blow into the straw. Observe.
6. Continue to blow into the straw until the trapped air can escape. Where did it escape from? Could you feel the pressure build?
7. Repeat Steps 3-6, but increase the amount of slime sitting on top of the straw. Observe.
8. Repeat Steps 3-6, but decrease the amount of slime sitting on top of the straw. Observe. How thin can you make this layer?
9. Clean up by placing the slime in a Ziploc bag, dispose of the plastic wrap, and put the baking sheet away. Enjoy your slime for about a week!

What's happening?
By setting the slime on top of the straw we created a seal. Once there is enough pressure within the slime from blowing into the straw, the polymers of the slime start getting forced apart. The bubble grows until the pressure becomes too great and the bubble bursts. This is exactly what happens under the surface of the Earth as gases build under the crust. When the gas pressure builds up, the crust starts to shift allowing the gas to push its way to the surface. From there the crust splits and the gas is released, sometimes in an explosive manner!



How does this relate to green energy?

The gases and heat released from rift valleys is a source of green energy that is being harnessed throughout the world. However, the country of Kenya has utilized this natural resource to build a national grid; bringing electricity to rural communities by harnessing the geothermal energy in the rift valley. The country was able to triple the percentage of Kenyans who had access to electricity from 2010-2016. Additionally, geothermal energy harvested from the released steam is used to heat greenhouses for flower export, mineral pools for locals and tourists, and can be used year round as it operates independently from the weather unlike solar and wind power options.

Now try…

- Place a few pens or pencils on top of the slime to see if they affect how the gas can escape the slime. What do you notice? What happens if you add enough pencils to cover the entire top of the slime?
- Repeat the experiment, but add extra straws to see what happens when there are multiple gas pockets building pressure. Did adding straws make it easier or harder for the built up gases to escape?

Additional Information

For more information on green energy from geothermal resources click here National Geographic - Kenya and geothermal power

For information on the rifts in and around Michigan click here Using Lake Superior parks to explain the Midcontinent Rift

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