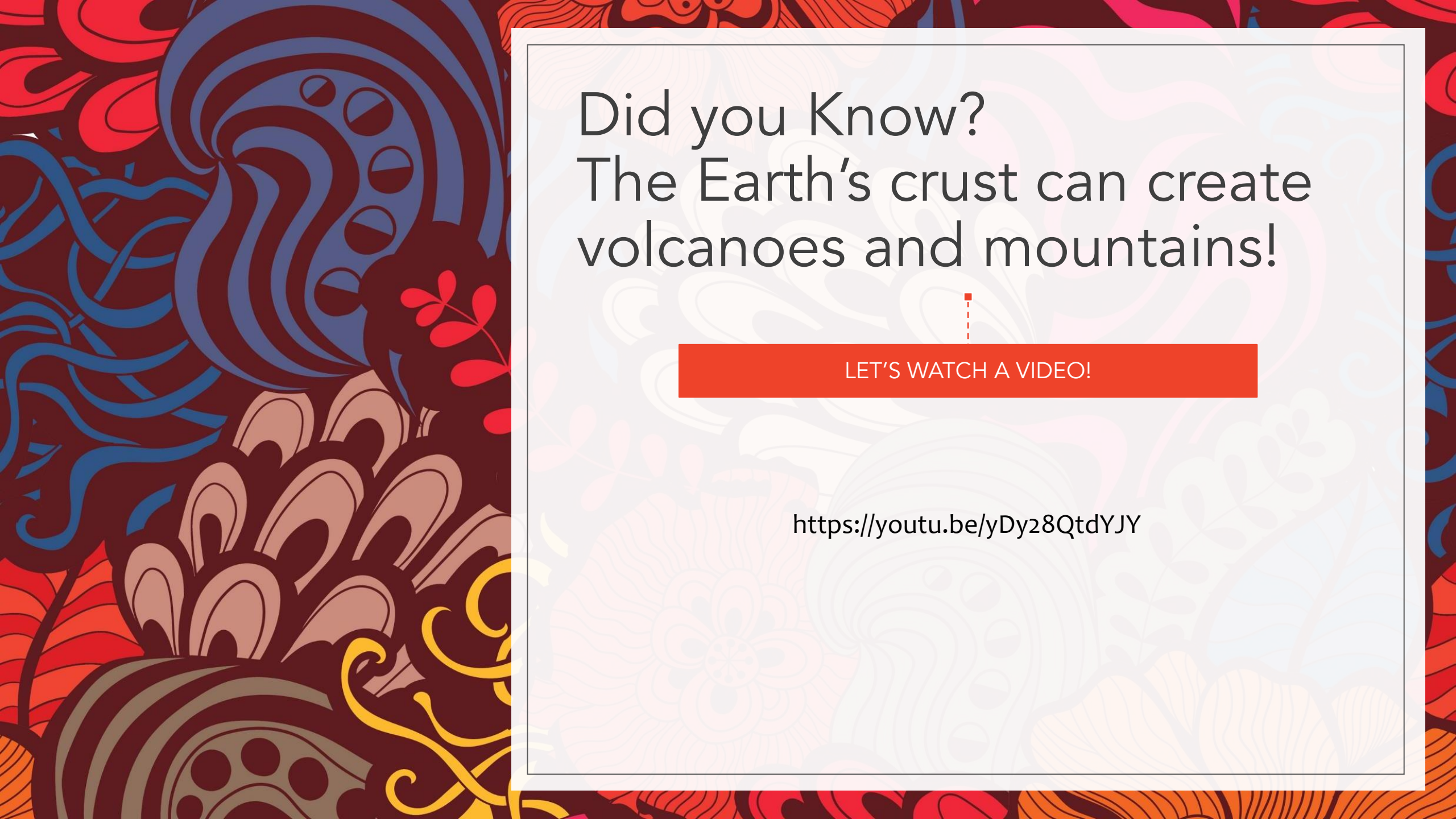




# BUILDING MOUNTAINS

The Science of how tectonic plates work  
This is suitable for grades 2-4

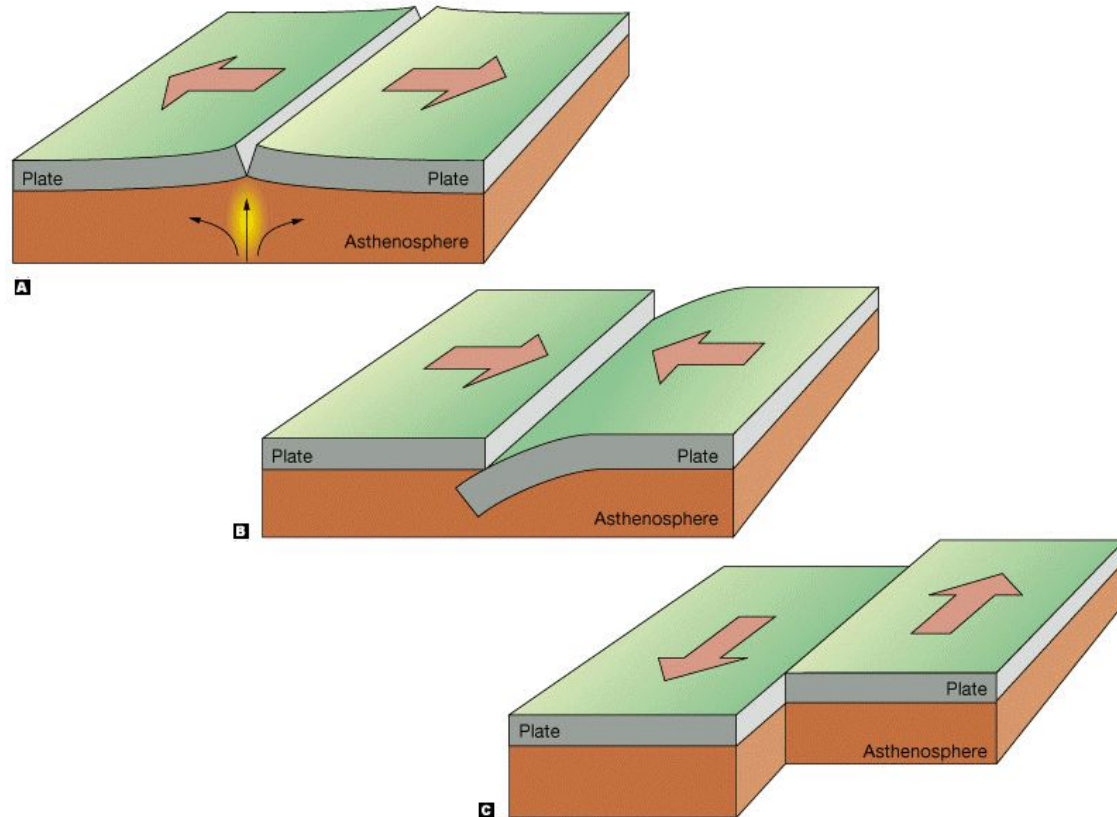


Did you Know?  
The Earth's crust can create  
volcanoes and mountains!

LET'S WATCH A VIDEO!

<https://youtu.be/yDy28QtdYJY>

# Do you know these words?



- Earthquake: an earthquake is when two chunks of the earth slip against each other and send energy through waves.
- Tectonic Plates: tectonic plates are a part of Earth's crust (the top layer of Earth). They are also known as the lithosphere! When they slip against each other they can cause mountains, earthquakes and volcanoes to form!
- Plate Boundaries: This is the spot where two plates meet! There are three general types of boundaries:
  1. Transform Boundaries
  2. Divergent Boundaries
  3. Convergent Boundaries



## Tools and Materials:

1. Graham Crackers
2. Marshmallow crème
3. A plate

# Putting it together!

- Put the marshmallow creme into the plate, be sure to cover the entire plate!
- Take one cracker and break it in two halves
- Put each graham cracker half on each end of the plate so they are on opposite ends.

# To do and Notice!

There are three different activities!

- Push your two graham cracker pieces together. Once the two crackers are touching, gently push down and apart so that the crème will poof up!
- Place two graham cracker pieces next to each other and rub them against each other in opposite directions.
- Get one side of one half of your cracker a little wet. Then put the two crackers at opposite sides of the plate and push them together. This time, when they meet in the middle, push the wet side of the graham cracker under the other half.



DIVERGENT  
BOUNDARY



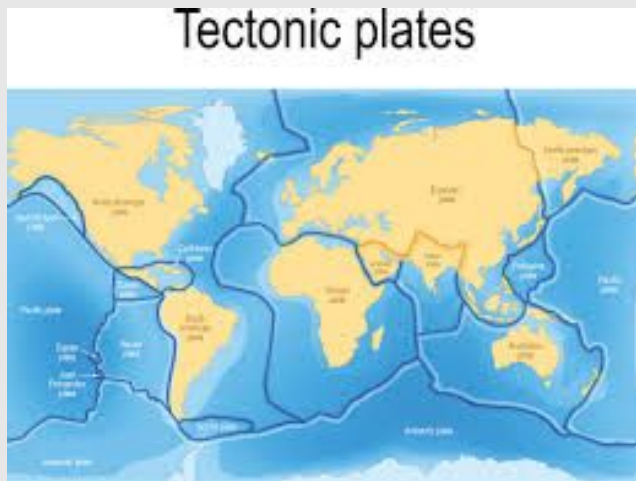
TRANSFORM  
BOUNDARY





CONVERGENT  
BOUNDARY

# What's going on?



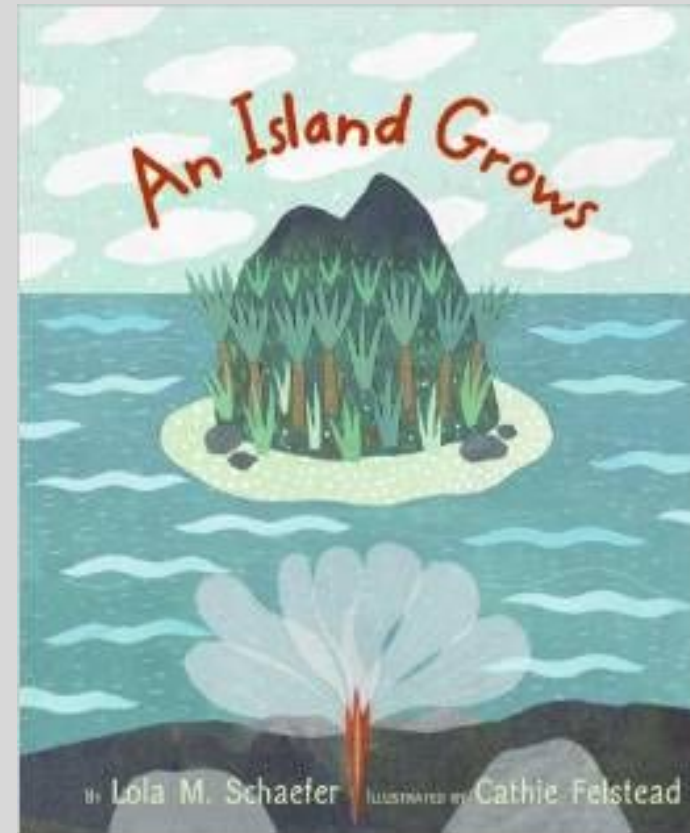
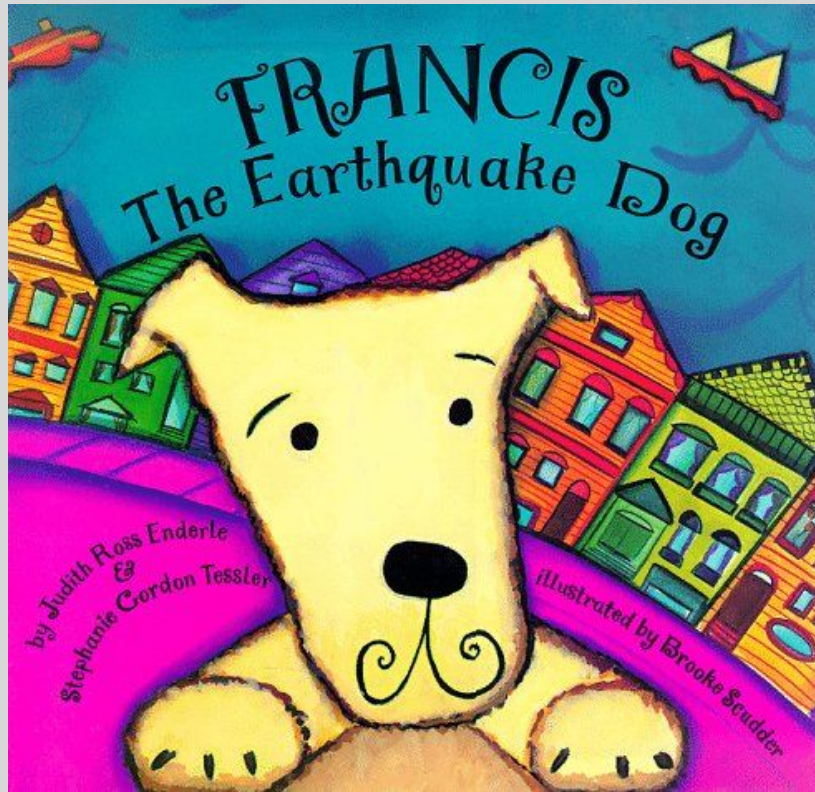
- The first activity you did was an example of a **Divergent Boundary**. Divergent boundaries open and slowly move apart, and then they fill with magma. The magma rises and forms new crust.
- The second activity you did represents a **Transform Boundary!** Transform boundaries often form earthquakes by moving in opposite directions and rubbing against each other!
- The last activity showed what a **Convergent Boundary** looks like. This is when plates are moving towards each other and literally crash into each other, just like the crackers! These ones create mountains!



# Grow Your Thinking!

- What are some other things you can think of that plates do?
- Is there more than just one type of crust?

Want to explore a little more? Here are some books!



# RESOURCES

- [https://www.youtube.com/watch?v=yDy28QtdYJY&list=PLB3bsw8h3-JdoD2QCStk1FFtIsSYtl7\\_y&index=34](https://www.youtube.com/watch?v=yDy28QtdYJY&list=PLB3bsw8h3-JdoD2QCStk1FFtIsSYtl7_y&index=34)
- [https://www.google.com/search?q=marshmallow+paste&rlz=1C1JZAP\\_enUS865US865&sxsrf=ALeKk000B--s6l\\_hHqd7wLlpnnuLr\\_kLEA:1603936755330&source=lnms&tbm=isch&sa=X&ved=2ahUKEwjSkayE2tjsAhUmGDQIHQk3BWYQ\\_AUoAXoECAwQAw&biw=1266&bih=561#imgrc=KILMM9jjCFU31M](https://www.google.com/search?q=marshmallow+paste&rlz=1C1JZAP_enUS865US865&sxsrf=ALeKk000B--s6l_hHqd7wLlpnnuLr_kLEA:1603936755330&source=lnms&tbm=isch&sa=X&ved=2ahUKEwjSkayE2tjsAhUmGDQIHQk3BWYQ_AUoAXoECAwQAw&biw=1266&bih=561#imgrc=KILMM9jjCFU31M)
- [.google.com/search?q=graham+crackers&rlz=1C1JZAP\\_enUS865US865&sxsrf=ALeKk01pA1piwStwHQgEfb77pa0tShz7ew:1603936731661&source=lnms&tbm=isch&sa=X&ved=2ahUKEwiXv4f52djsAhV5ljQIHAE8AWAQ\\_AUoAnoECA4QBA&biw=1266&bih=561](https://www.google.com/search?q=graham+crackers&rlz=1C1JZAP_enUS865US865&sxsrf=ALeKk01pA1piwStwHQgEfb77pa0tShz7ew:1603936731661&source=lnms&tbm=isch&sa=X&ved=2ahUKEwiXv4f52djsAhV5ljQIHAE8AWAQ_AUoAnoECA4QBA&biw=1266&bih=561)
- [https://www.google.com/search?q=tectonic+plate&tbm=isch&chips=q:tectonic+plate,g\\_1:diagram:PcaxUJxdbx0%3D&rlz=1C1JZAP\\_enUS865US865&hl=en&sa=X&ved=2ahUKEwj256-j2djsAhWOI54KHeINABEQ4IYoAHoECAEQFQ&biw=1249&bih=561#imgrc=YIf6wDSphxwo8M](https://www.google.com/search?q=tectonic+plate&tbm=isch&chips=q:tectonic+plate,g_1:diagram:PcaxUJxdbx0%3D&rlz=1C1JZAP_enUS865US865&hl=en&sa=X&ved=2ahUKEwj256-j2djsAhWOI54KHeINABEQ4IYoAHoECAEQFQ&biw=1249&bih=561#imgrc=YIf6wDSphxwo8M)
- [google.com/search?q=tectonic+plate+map&rlz=1C1JZAP\\_enUS865US865&sxsrf=ALeKk00tPkGSSRGaasGqHf4lwFL0Y0q6CA:1603938918132&source=lnms&tbm=isch&sa=X&ved=2ahUKEwj\\_kNOL4tjsAhVRLX0KHVmlB\\_0Q\\_AUoAXoECAMQAw&biw=1266&bih=561#imgrc=uS-VaeMv6gokYM](https://www.google.com/search?q=tectonic+plate+map&rlz=1C1JZAP_enUS865US865&sxsrf=ALeKk00tPkGSSRGaasGqHf4lwFL0Y0q6CA:1603938918132&source=lnms&tbm=isch&sa=X&ved=2ahUKEwj_kNOL4tjsAhVRLX0KHVmlB_0Q_AUoAXoECAMQAw&biw=1266&bih=561#imgrc=uS-VaeMv6gokYM)

- [https://www.google.com/search?q=grow&rlz=1C1JZAP\\_enUS865US865&sxsrf=ALeKk02BLID1dqOw-fihSvaWUsOjnSBEgg:1603939450749&source=Inms&tbm=isch&sa=X&ved=2ahUKEwj0x8-J5NjsAhUUJzQIHeODAuQQ\\_AUoAnoECAMQBA&biw=1266&bih=561](https://www.google.com/search?q=grow&rlz=1C1JZAP_enUS865US865&sxsrf=ALeKk02BLID1dqOw-fihSvaWUsOjnSBEgg:1603939450749&source=Inms&tbm=isch&sa=X&ved=2ahUKEwj0x8-J5NjsAhUUJzQIHeODAuQQ_AUoAnoECAMQBA&biw=1266&bih=561)
- [https://www.google.com/search?q=picture+books+about+volcanoes&tbm=isch&ved=2ahUKEwjAkLCa5tjsAhWomJ4KHwBeABQQ2-cCegQIABAA&oq=picture+books+about+vol&gs\\_lcp=CgNpbWcQARgAMgIIADIECAAQGDIIECAAQGDIIECAAQGDogCAAQCBAeUIH9AljChQNgtpEDaAFwAHgAgAFNiAGeApIBATSYAQcGAAQgqAQtnD3Mtd2l6LWltZ8ABAQ&sclient=img&ei=ti6aX8DdLY6x-gTgvlGgAQ&bih=561&biw=1270&rlz=1C1JZAP\\_enUS865US865#imgcr=2Em2STecR30f4M](https://www.google.com/search?q=picture+books+about+volcanoes&tbm=isch&ved=2ahUKEwjAkLCa5tjsAhWomJ4KHwBeABQQ2-cCegQIABAA&oq=picture+books+about+vol&gs_lcp=CgNpbWcQARgAMgIIADIECAAQGDIIECAAQGDIIECAAQGDogCAAQCBAeUIH9AljChQNgtpEDaAFwAHgAgAFNiAGeApIBATSYAQcGAAQgqAQtnD3Mtd2l6LWltZ8ABAQ&sclient=img&ei=ti6aX8DdLY6x-gTgvlGgAQ&bih=561&biw=1270&rlz=1C1JZAP_enUS865US865#imgcr=2Em2STecR30f4M)
- [https://www.google.com/search?gs\\_ssp=eJzj4tLP1Tcwy8oyNjcyYPTiT8xTyCzOScxLUUgvyi8vBgB40Aj8&q=an+island+grows&rlz=1C1JZAP\\_enUS865US865&oq=an+island+groe&aqs=chrome.1.69i57j46i13j0i13j0i13i30.5821j1j7&sourceid=chrome&ie=UTF-8](https://www.google.com/search?gs_ssp=eJzj4tLP1Tcwy8oyNjcyYPTiT8xTyCzOScxLUUgvyi8vBgB40Aj8&q=an+island+grows&rlz=1C1JZAP_enUS865US865&oq=an+island+groe&aqs=chrome.1.69i57j46i13j0i13j0i13i30.5821j1j7&sourceid=chrome&ie=UTF-8)
- <https://www.nextgenscience.org/pe/4-ess2-2-earths-systems>
- [google.com/search?q=graham+crackers+and+cream+experiment&rlz=1C1JZAP\\_enUS865US865&sxsrf=ALeKk00xON34\\_CRh53hksEtRRR54mlsUww:1604352868106&source=Inms&tbm=isch&sa=X&ved=2ahUKEwib1bCW6OTsAhVIHzQIHxgcCOoQ\\_AUoAnoECAgQBA&biw=1280&bih=578](https://www.google.com/search?q=graham+crackers+and+cream+experiment&rlz=1C1JZAP_enUS865US865&sxsrf=ALeKk00xON34_CRh53hksEtRRR54mlsUww:1604352868106&source=Inms&tbm=isch&sa=X&ved=2ahUKEwib1bCW6OTsAhVIHzQIHxgcCOoQ_AUoAnoECAgQBA&biw=1280&bih=578)