

Activity 1 – Time Travel Across Earth’s Floor

Through interactive online games and activities, learn how the surface of the Earth has changed through time, and how plate tectonics form, destroy, and shape our world. With the Tectonic Plate simulator show your skill at making mountains, volcanic islands, and other awesome plate boundary features!

(These links may be best for 5th grade and above, but all can have fun!)

Suggested Activity Instructions

So here’s how this works. . . before each link there is a quick suggestion you can try at that web location. Read it, then follow the link.

1. The first link is the start of your journey. When you want to move on, come back to this document, read the suggestions for the next link, and then follow it.
2. You should try each link, but if one is uninteresting to you, it is ok to move on!
3. We are deliberately not giving too much information so that everyone has the opportunity to explore these activities for themselves! Feel free to ask questions by messaging us through Facebook!

Travel Back in Time

Visit the EarthViewer: <https://www.biointeractive.org/classroom-resources/earthviewer>

1. Click through the tutorial window if you like. You can spin the globe around with your mouse or finger (device dependant).
2. Press the “view button at the bottom and turn on “Coastlines”.
3. Find Connecticut. Press the reverse play button down in the bottom left.
4. What do you notice happens to the location of Connecticut as you go back in time?
5. The tracks at Dinosaur State Park were made about 220 million years ago. Move the timeline to about 220 million years ago. . .
 - a. What modern day continent is Connecticut near 220 million years ago?
 - b. Feel free to play around with the other options.

Investigating with Earth's Crust

Next, let's play around with some of the processes that cause these land masses to move.

Visit the Plate Tectonics simulator (Windows only and requires Java download):

<https://phet.colorado.edu/en/simulation/plate-tectonics>

(In order to use this simulator, it will need to be downloaded. Some newer computers may not be able to run this. While this is safe to download, please check with your adult before downloading it.)

Once downloaded and opened:

1. Click on the "Plate Motion" tab at the top.
2. Try to construct a divergent boundary between two continental crusts by clicking and dragging the "continental crust" cube to each side of the earth in the main screen.
3. Use the levers and pull in the direction of the RED arrow.
 - a. What do you notice happening to the continental crust?
 - b. In the "View" box, select "Both" and click "Show Labels" and "Show Seawater".
 - c. Where do see that seawater?
 - d. Why do you think that water appears in this location?
4. Press the "New Crust" button.
5. Construct a convergent boundary between two continental plates.
6. Use the lever and pull in the direction of the GREEN arrow.
 - a. What do you notice happening to the continental crust?
 - b. What geologic feature have you just created?
7. Press the "New Crust" button.
8. Construct a convergent boundary with an oceanic and a continental plate.
 - a. What do you notice happening at the plate boundary?
 - b. What features are created on the continental crust the longer the plates are converging?
 - c. Think about how this relates to what you saw in the previous EarthViewer!
 - d. What are some other events you notice happening due to plate tectonic action?
 - e. Experiment with other combinations of plate types creating convergent and divergent boundaries.

Continue the exploration with GeoScience Activity 2 – Awesome Events & Explosions

Post questions in the comments on our [Facebook page](#)!