

# Plate Tectonics Simulation

**Estimated Time:** 20-40 minutes

## SUMMARY

Plate tectonics is an important concept but it can be hard to visualize. Use this powerful simulator to learn about it and see the impact of plate tectonics on your very own planet!

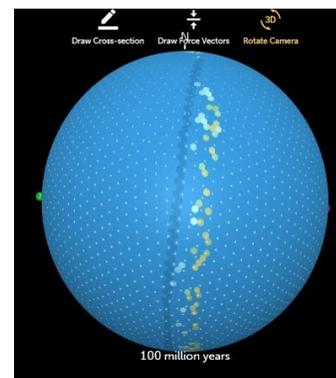
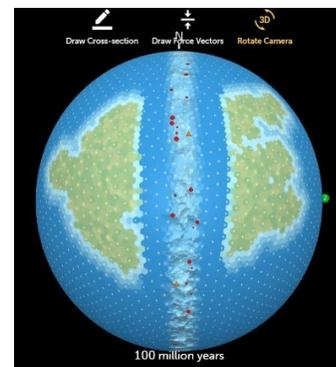
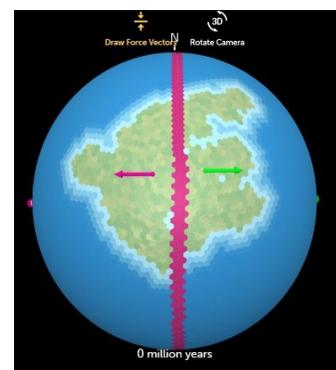
## WHAT YOU'LL LEARN

- About forces and vectors.
- The behavior of plates and the characteristics of plate boundaries.

Materials Used	Resources Used
<ul style="list-style-type: none"> <li>• Computer</li> <li>• Pencil and paper for notes (optional)</li> </ul>	<ul style="list-style-type: none"> <li>• Tectonic Plate Simulator: <a href="https://tectonic-explorer.concord.org">https://tectonic-explorer.concord.org</a></li> </ul>

## WHAT TO DO

1. Using the simulator site Tectonic Explorer (<https://tectonic-explorer.concord.org/?planetWizard=true>), set up a planet with two plates. Once the model loads you will have a planet that has a pink line down the middle, showing a split in the planet's crust.
2. Draw a landmass that crosses the split, a single piece of land that is actually two separate land masses (like Eurasia and India on Earth). An example of this can be seen to the right.
3. When you finish drawing, click "Next" to set the *force vectors* for the plates. These are the arrows that show how the plates are being pushed by the planet's mantle.
4. Make a prediction about how the surface of the planet will look after 100 million years. Think about the movement of the plates and where their edges are.
5. Click "Next" again until you reach the page where the plates begin to move. Let it run for 100 million years and then pause. Compare the result (which should resemble the middle image to the right) to your prediction and see how well you did.
6. Use the "Rotate Camera" option at the top of the simulator to rotate to the opposite side of the planet (the bottom image to the right). You should see new land being formed there, even though you never drew land on this side of the planet! Why is land forming here all of a sudden?



### TIPS

- This simulator has many different options that can be extensions for interested learners. From this simulation of a divergent boundary, students can run different simulations for convergent and transform boundaries simply by changing the orientation of the force vectors. Other options with more plates and even showing earthquakes and volcanoes can be found under the Menu.