UJ

Plate Tectonic Simulation

Go to the following website: <http://phet.colorado.edu/en/simulation/plate-tectonics>. Click on “Run Now” for the simulation. When the simulation opens, in the upper left hand corner, click the “plate motion” tab. Drag continental crust to each side of the screen. In the “view” box at the bottom of the screen, select “both”.

1. Above one of the plates, click and hold the blue arrow.
2. What are the plates doing?
3. Use your vocabulary to determine what type of boundary this is.
4. Are there any features created (mountains, trenches, etc.)?
5. Click the “reset all” button. Put continental crust on each side again. In the view tab, click “both”. Above one of the plates, click and hold the green arrow.
6. What type of boundary are you simulating?
7. What surface feature(s) is/are being created?
8. Do you think there would be volcanoes or earthquakes here? Why or why not?
9. Click the “reset all” button. Drag young oceanic crust to both sides of the screen. Click and hold one of the red arrows.
10. What type of boundary is this?
11. Are there any features being created here?
12. What happens to the age of the rocks as you move away from this boundary?
13. “Reset all”. Put young oceanic crust on one side and old oceanic crust on the other. Check the “both” option from the view menu, as well as “show seawater”. Click and hold the green arrow.
14. What type of boundary is this?
15. What features form here?
16. What is happening to crust?
17. a) Hit the “Reset” button. How long did it take for the oceanic crust to start melting?
18. How long did it take before the first volcanoes formed?
19. Once the volcano formed, how long did it take for it to break the surface of the ocean?
20. “Reset all”. Put a continental and old oceanic plate in. Click “both” in the view section and “show seawater”. Click and hold the green arrow.
21. What type of boundary is this?
22. What features are being created?
23. What is happening to the crust?
24. a) From the start of the simulation, how long did it take the magma to reach the surface of the earth?
25. Approximately how long did it take for the volcanoes to become noticeable on the surface of the earth?
26. Thinking about what you saw in the simulations, how are volcanoes formed?