

15. What geologic events would be expected in these places and explain why - EARTHQUAKES / VOLCANOES or EARTHQUAKES AND VOLCANOES (Choose one.)

B - Looking at Continent-Continent Collisions

16. In [this satellite image of the Himalaya Mountains](#), describe what you observe geologically

17. According to our [plate map](#), the type of lithospheric plate boundary occurring at the Himalayas is a DIVERGENT / CONVERGENT / TRANSFORM boundary. (Choose one.)

18. Draw and describe what is going on in this type of plate boundary. Need help? [Look here](#). Really, make a drawing and describe.

19. What geologic events would be expected in this place and explain why - EARTHQUAKES / VOLCANOES or EARTHQUAKES AND VOLCANOES (Choose one.)

C - Looking at Transform Boundaries

20. In this [satellite image of southern California](#) looking toward Soda Lake, describe what you see geologically. [This link](#) may help. [This article](#) about recent movement in a nearby fault will help, too. Wait for the images in the article to load. I think you'll like them.

21. According to our [plate map](#), the type of lithospheric plate boundary occurring at the San Andreas is a DIVERGENT / CONVERGENT / TRANSFORM boundary. (Choose one.)

22. Draw and describe what is going on in this type of plate boundary.

23. Tell which geologic events you would logically expect here and explain why - EARTHQUAKES / VOLCANOES or EARTHQUAKES AND VOLCANOES (Choose one.)

D - Looking at Divergent Boundaries

24. View this [satellite image of the Atlantic Ocean floor near Iceland](#) and this [satellite image of the Afar Triangle](#) in Africa. Describe what is happening geologically in both places. [This link](#) (Iceland) and [this link](#) (Africa) may help. The satellite view of the Afar Triangle may be a mystery until you look at the link to Africa. You've already seen some of this area in our film, Colliding Continents.

25. According to our [plate map](#), the type of lithospheric plate boundaries in the middle of the Atlantic is in Africa are DIVERGENT / CONVERGENT / TRANSFORM boundaries. (Choose one.)

26. Draw and describe what is going on in this type of plate boundary.

27. Tell which geologic events you would logically expect here and explain why - EARTHQUAKES / VOLCANOES or EARTHQUAKES AND VOLCANOES (Choose one.)

Plate Tectonics Lab Part 2

Name _____

Part 5 - Sea Floor Depth and Age via Google Earth

The seafloor covers about 71% of our planet and is marked by a variety of topographic features: mountain ridges with peaks higher than Mt. Everest, islands and seamounts, oceanic plateaus, plains and deep trenches. The seascapes are as diverse and varied as the landscapes on the continents. In this part of the lab we will use Google Earth and visualizations created by NOAA.

Objectives

1. Describe the distribution of seafloor depths and the relationship to spreading centers.
2. Describe how seafloor ages support the plate tectonics theory.

Instructions

A. Navigate to [Google Earth](#). (You may need to use Google Chrome.) In the left menu, select "Voyager," the third icon from the top and choose **LAYERS** at the bottom. Scroll down to "Seafloor Depth" and "Seafloor Age" in the main window. These are the two models we will be using.

B. Open the Seafloor Depth layer. Familiarize yourself with it. Move the globe in different directions.

1. Record 5 observations below about the sea floor in this view.

- a.
- b.
- c.
- d.
- e.

2. On the scale, the lowest (deepest) value for depth is _____ m or _____ feet.

3. On the scale, the color _____ represents the deepest parts of the ocean floor

4. What can you tell about the depth of the seafloor along the mid-Atlantic ridge, a mountain range? Is it deeper, shallower, or the same as its surroundings?

5. Draw a sketch that shows the depth of the ocean at the Mid-Atlantic Ridge and its surroundings. Your sketch should have the profile of a mid-ocean ridge and the relative motion of the plates.

C. Shallow seawater that extends for hundreds of kilometers outward from the shoreline make the continental shelves.

6. In the visualization, the color _____ best represents the continental shelves?

D. Go back to Voyager and select the Seafloor Age layer. Familiarize yourself with the model.

7. Record 5 observations or questions that you have related to the sea floor age.

a.

b.

c.

d.

e.

8. According to the scale of the seafloor age, the color _____ represent new crust and that crust is about

_____ years old.

9. The oldest crust is about _____ years old and is found _____. (Where?)

10. The oldest rocks exposed in the Grand Canyon are 1,840 million years old. However, the scale of this ocean floor visualization, the oldest rocks are only 300 million years old. Why are there no rocks older than 300,000,000 in the ocean crust?

11. Considering the south Atlantic basin, which of the following statements is true?

1 The seafloor depth reaches 10,000 m (35,000 ft) along the center of the ocean basin.

2. The seafloor depth is ~5,000 m (17,000 ft) along the center of the ocean basin.

3. The seafloor depth is deepest along the coast of South America and Africa

Explain.

12. The youngest oceanic crust in the south Atlantic basin is located _____. (Where?)
13. Using the colors for interpretation, which is spreading faster, the mid-Atlantic ridge or the east Pacific rise? How do you know?
14. If the mid-ocean ridges active today continue to produce new sea floor for another 100-200 million years, how will the appearance and location of oceans and continents be changed?

The Google Earth Layers link just in case.
<https://earth.google.com/web/>.

*Add [Scotese](#) / [Blakey](#)?
V 9/10/19*