Name: _____ Period: _____ Date: _____

Seafloor Spreading Simulation

Part I: *Answer the following questions based on your seafloor spreading model.*

1) Let's assume the *oldest* oceanic crust formed when Pangaea started to split apart.
   - Label these two lines with their age: 200 million years old
   - Estimate the ages of the other lines and label them as well on your paper model. The ages should get progressively younger towards the ridge (which would be zero).

2) The oceanic crust is made of **(granite / basalt)** while the continental crust is made of **(granite / basalt)**
   Circle one. *Circle one.*

3) Based on your model, the oldest oceanic crust is colored _____ and the newly forming crust is colored _____.

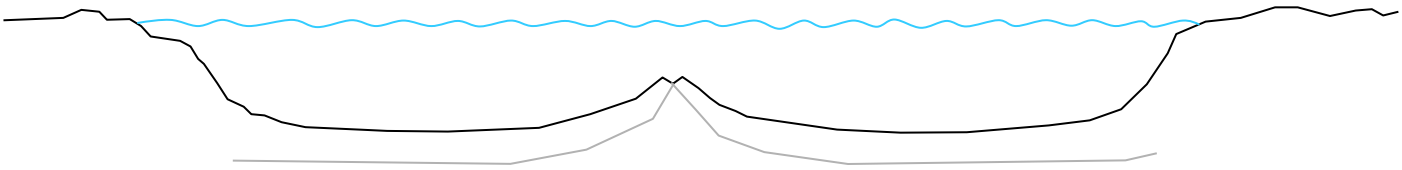
4) In general, the youngest oceanic crust is found along the _____, while the oldest is found near the _____.

5) Are the colored stripes actually visible along the ocean floor? _____

6) Through the process of seafloor spreading, more oceanic crust keeps getting added onto each plate because hot magma from the _____ is continually pushing up through the lithosphere. (*HINT → Which layer is breaking through the rift in the ocean floor?)*

7) Pick any two lines of the same color. Where were these lines when they first solidified into new sea floor?

8) The diagram below represents a cross-section of the ocean floor. Label anything you can:



9) Within the oceanic crust, draw two arrows pushing apart from the ridge to demonstrate seafloor spreading.

10) Use colored pencils or markers to color code the crust according to its age (just like on your paper model).

Part II: *Answer in complete sentences.*

11) Imagine that your hands represented two continents pulling apart as Pangaea broke up due to sea floor spreading. We have talked about why Wegener's theory of Continental Drift was originally rejected. How does this model help to provide strong evidence for plate tectonics?

12) Why do the lines drawn on your paper model create a symmetrical pattern?

13) The Earth is 4.6 billion years old. Based on observations of your sea floor spreading model, why do you think the oldest rocks on the ocean floor are only around 200 million years old? In other words, what happened to all the old oceanic rock?