

Seafloor Ages Activity

Name _____

Materials:

Seafloor Ages Worksheet
Crayons or Colored Pencils

Introduction/Instructions:

Imagine you are an Ocean Explorer gathering information on the ages of the seafloor in the Pacific and Atlantic Oceans. You and your fellow scientists take the drill ship Resolution to many locations in the oceans and collect rock samples from each sample location on the map lettered 'a-gg'. The ages of each sample are determined in the lab and are listed on the worksheet next to the letter of the rock sample. Now you must color the map based on the ages of the rock samples to see the distribution of seafloor ages.

1. Color the legend on the worksheet with 7 different colors (use a different color for 0-10 Myr, 10-40 Myr, 40-70 Myr, 70-100 Myr, 100-120 Myr, 120-150 Myr, 150-180 Myr). The same legend is for both Pacific and Atlantic oceans.
2. Locate each of the lettered rock samples on the map and determine its age from the list. Color the entire section of the map for that rock sample with the color from the legend matching that rock's age.

Pre-Lab Questions:

What do you think the layout of seafloor ages is? Where do you think the youngest and oldest seafloor is located? Why?

Questions:

1. Where is the oldest seafloor?
2. Look at the Atlantic Ocean. Where is the *youngest* seafloor in that ocean?
3. What do you notice about the *age pattern* on the seafloor in the Atlantic Ocean (hint: look on each side of the middle)?

4. Africa and South America used to be joined together in Pangea, but are now separated by the Atlantic Ocean. Something must be happening between these continents to create new seafloor. Notice how the oldest crust is on the outside edges and the youngest crust is in the middle of the seafloor. How do you think an age pattern like this forms?

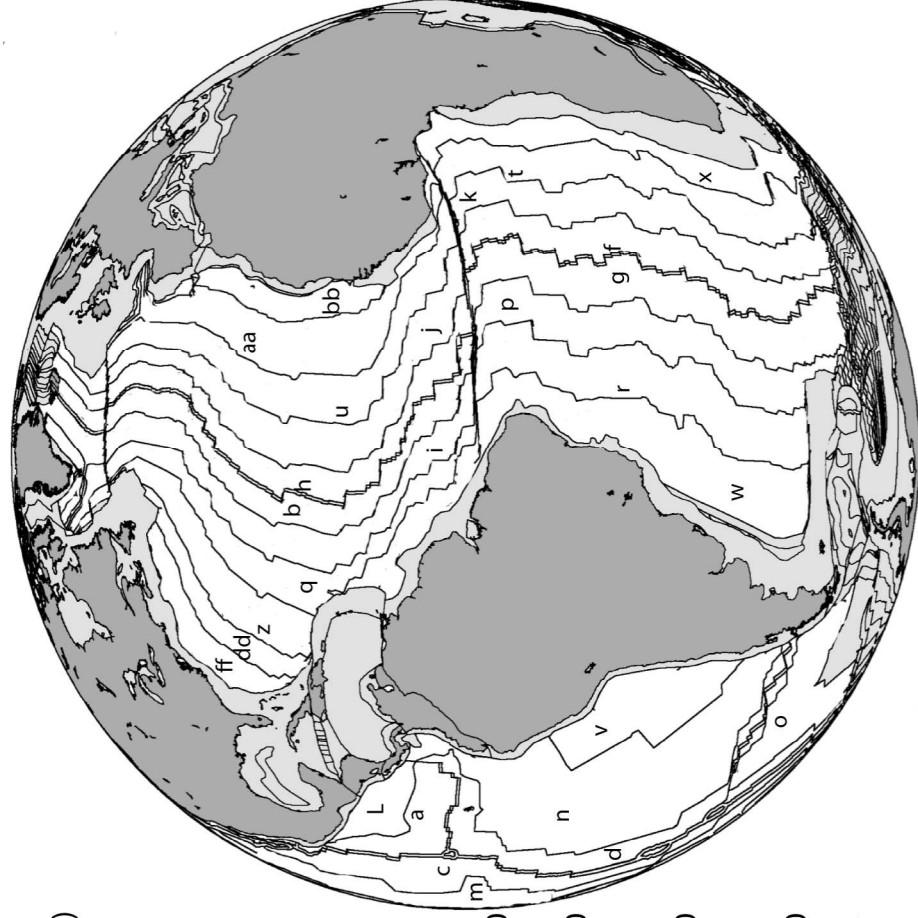
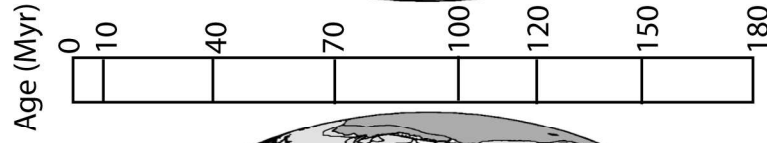
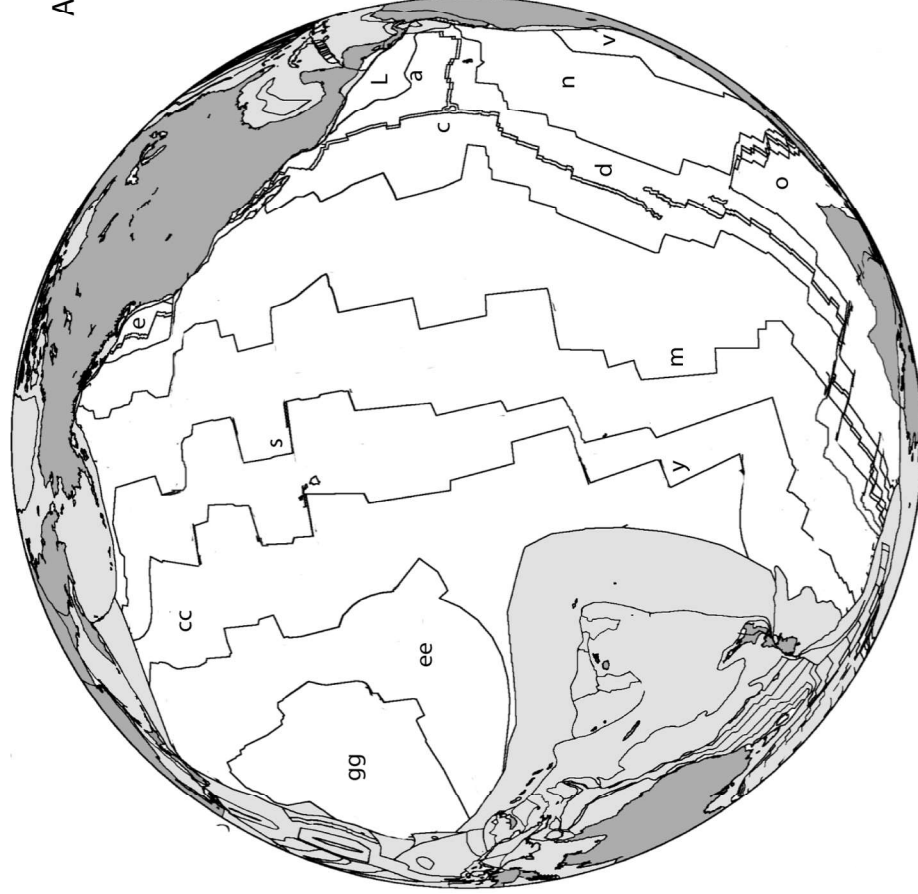
5. Now look at the Pacific Ocean seafloor ages. Where in the Pacific do you notice the same type of pattern as seen in the Atlantic?

6. The central and northern Pacific seafloor ages are more complicated. Where are the youngest ages of seafloor in this ocean? Are they in the center of the ocean basin?

7. In the Pacific, the seafloor on one side of the youngest crust gets very old, but the seafloor on the other side is much younger. How do you think the *location* of the youngest aged seafloor in the Pacific Ocean contributes to a more complicated age pattern in that ocean (hint: think about the distance of the youngest seafloor from the nearest continents on both sides of the ocean)?

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Rock Samples:

- | | | | |
|-----------|-----------|-------------|-------------|
| a) 5 Myr | k) 31 Myr | u) 51 Myr | ee) 143 Myr |
| b) 7 Myr | L) 12 Myr | v) 41 Myr | ff) 126 Myr |
| c) 2 Myr | m) 20 Myr | w) 88 Myr | gg) 175 Myr |
| d) 4 Myr | n) 16 Myr | x) 82 Myr | |
| e) 5 Myr | o) 19 Myr | y) 96 Myr | |
| f) 8 Myr | p) 31 Myr | z) 78 Myr | |
| g) 10 Myr | q) 55 Myr | aa) 71 Myr | |
| h) 6 Myr | r) 68 Myr | bb) 104 Myr | |
| i) 25 Myr | s) 43 Myr | cc) 117 Myr | |
| j) 27 Myr | t) 62 Myr | dd) 113 Myr | |