

## Sea Floor Spreading

Name \_\_\_\_\_

**Focus Question:** How does the age of the ocean floor provide evidence for seafloor spreading?

**Procedure:** Scientists have been able to establish the ages of areas of rocks on the ocean bottom. The pattern in the ages of the rocks across the ocean floor is used as evidence of sea-floor spreading. The diagram below represents the ocean floor in the North Atlantic ocean. The numbers on the map give the age (in millions of years) of the rocks on the ocean floor located along the lines.

**Step 1:** Find the United States, Africa, and Europe on the map. Shade them with a brown colored pencil. Then, look for the dashed line (- - -) in the middle of the map. This line represents the Mid-Atlantic Ridge. Trace it in red.

**Step 2:** Lightly shade in the age bands as listed below. (Some colors will have more than one age band in them.)

Mid-Atlantic Ridge - leave white

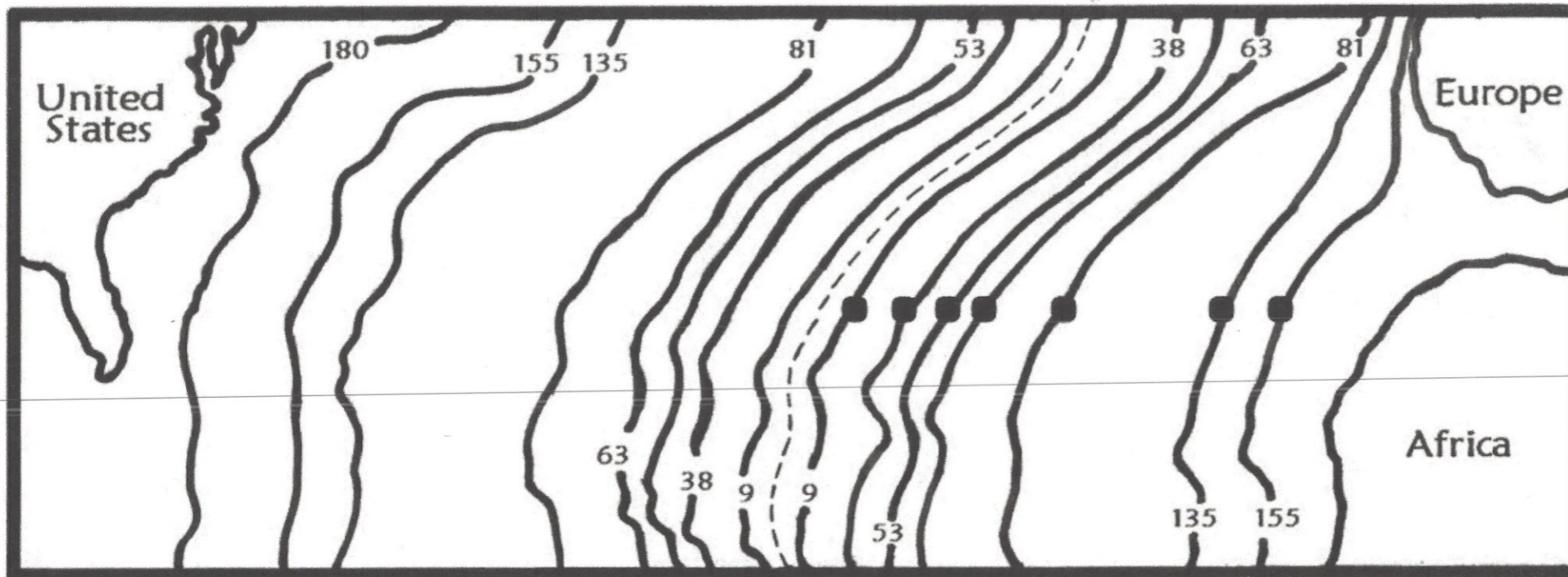
9-38 million years - purple

38-63 million years - blue

63-81 million years - yellow

81-135 million years - green

135-180 million years - orange



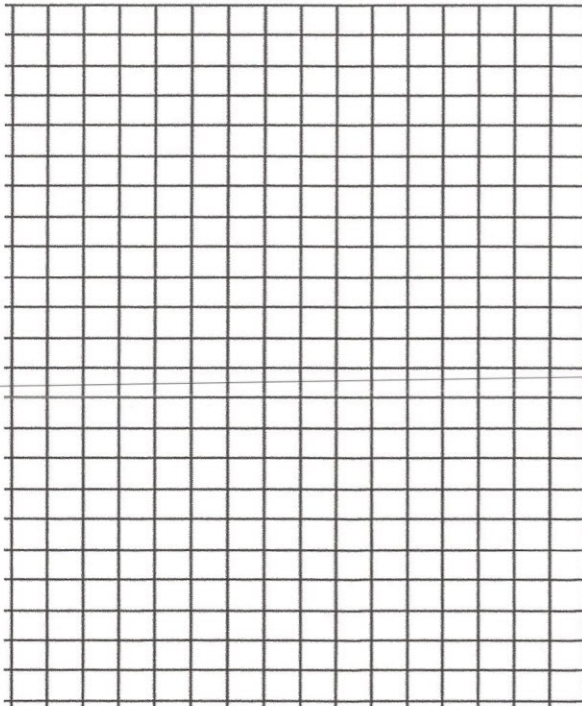
**Step 3:** Use a ruler to measure the distance in centimeters (to the nearest tenth) from the Mid-Atlantic Ridge to each of the positions shown by a dot (measure to the middle of the dot). Write the measurements on the data chart in Column B.

**Step 4:** Complete the rest of the data chart by calculating the actual distance in kilometers. On the map, 1 centimeter equals 700 kilometers. So, to find the actual distance, multiply the centimeters from Column B by 700.

**Step 5:** Graph the data in the chart to show the relationship between age (millions of years) and distance (km). You will be using the data in Column A and Column C.

- Label the X axis “Age (millions of years)”.  
(Each line represents 10 years.)
- Label the Y axis “Distance (km)”.  
(Each line represents 250 km.)
- Plot the data points and connect to make a line graph.
- Title your graph.

Column A	Column B		Column C
Age of Sea Floor (in millions of years)	Distance from Mid-Atlantic Ridge to Dot (cm)	Multiply Column B x 700 To Find Column C	Actual Distance (km)
9			
38			
53			
63			
81			
135			
155			



**Step 6:** Answer the following questions:

1. This graph represents the relationship between \_\_\_\_\_ and \_\_\_\_\_ from the Mid-Atlantic Ridge.
2. What does this information tell us about the *age* of rock as it gets further away from the mid-ocean ridge?
3. What do you notice about the banding on both sides of the Mid-Atlantic Ridge? How does this provide evidence for seafloor spreading?