Atlantic Ocean Floor Topography Lab.

**INTRODUCTION**:

Suppose you took a trip across the Atlantic Ocean and were able to check the depth of the water under your boat at regular intervals. The data table shows a record of the depth of the Atlantic Ocean measured by a research vessel travelling on course due East along 39ON latitude. Let’s turn these numbers into a graphic profile of the Atlantic.

**MATERIALS:** graph paper pencil or pen colored pencils/pens

**PROCEDURES:**

Use a piece of your graph paper to plot a simple line graph using the data table. Plot "OCEAN DEPTH in Meters” on the vertical axis, starting with Sea Level (zero meters depth) at the top of your graph. Plot “DISTANCE from North America in Kilometers” on the horizontal axis. Suggestion: turn your graph paper sideways and plot your graph horizontally.

**DATA:**

**ANALYSIS:**

1. Use your ruler to draw a horizontal line across the top of your entire graph at 0 meters depth to indicate the surface of the Atlantic Ocean.
2. Plot the data and use a dark colour such as black or brown to fill-in all the area below your line graph to indicate the Earth’s crust below the Atlantic Ocean.
3. Draw a second horizontal line across the entire graph at 200 meters depth to indicate the maximum depth of the Photic or Epipelagic Zone. Color water areas (not the crust) the areas on your graph between zero and 200 meters using a light green color.
4. Draw a third horizontal line across the entire graph at 2000 meters depth to indicate the maximum depth of the Mesopelagic Zone. Color the water areas (not the crust) on your graph between 200 and 2000 meters using a blue color.
5. Draw your last horizontal line across the entire graph at 6000 meters depth to indicate the maximum depth of the Abyssal or Bathypelagic Zone. Color the water areas (not the crust) on your graph between 2000 and 6000 meters using a light purple or medium blue color.
6. Label the following topographic features on your graph. Remember: both sides of the ocean basin may have the same topographic features but reversed! Continental Shelf, Continental Slope, Continental Rise, Abyssal Plains, Mid-Atlantic Ridge, Rift.
7. Add labels and arrows to show which crustal plates are involved in creating this topographic profile and what direction they are moving.

|  |  |
| --- | --- |
| **Distance from North America (km)** | **Depth (km)** |
| 0 | 0 |
| 160 | 165 |
| 200 | 1800 |
| 500 | 3500 |
| 800 | 4600 |
| 1050 | 5450 |
| 1450 | 5100 |
| 1800 | 5300 |
| 2000 | 5600 |
| 2300 | 4750 |
| 2400 | 3500 |
| 2600 | 3100 |
| 3000 | 4300 |
| 3200 | 3900 |
| 3450 | 3400 |
| 3550 | 2100 |
| 3600 | 1330 |
| 3700 | 1275 |
| 3950 | 1000 |
| 4000 | 0 |
| 4100 | 1300 |
| 4350 | 3650 |
| 4500 | 5100 |
| 5000 | 5000 |
| 5300 | 4200 |
| 5450 | 1800 |
| 5500 | 920 |
| 5600 | 180 |
| 5650 | 0 |