Ocean Floor Mapping

**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.

**PROCEDURE:**

1. Use a piece of your graph paper to plot a simple line graph using the data table. Turn your graph paper sideways so that it is horizontal.
2. Plot "OCEAN DEPTH in Meters” on the vertical axis, starting with Sea Level (zero meters depth) at the top of your graph.
3. Plot “DISTANCE from North America in Kilometers” on the horizontal axis.
4. Number the y-axis from zero at the top to 6000 at the bottom
5. Number the x-axis from zero on left, to 6000 on right
6. Use the data below to plot each point.
7. When all points are plotted, connect the dots

**DATA:**

|  |  |
| --- | --- |
| Distance from North America (m)  (x-axis) | Ocean Depth (m)  (y-axis) |
| 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 |

**ANALYSIS:**

1. Use your ruler to draw a *horizontal line* across your entire graph at *0 meters* depth to indicate the surface of the Atlantic Ocean.

2. Use a dark color such as black or brown and 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. Label this the Photic/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. Label this 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. Label this the Abyssal/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. With the help of your book or notes, 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 Abyssal Plains Mid-Atlantic Ridge**

**Volcanic Island Seamounts**

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