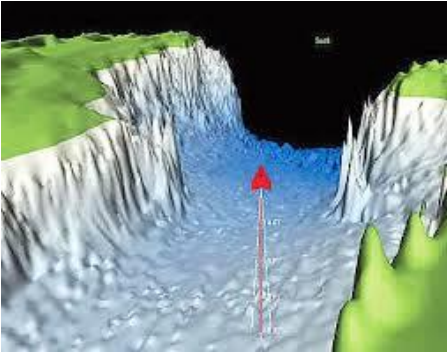# Contour of the Ocean Floor

(adapted from D.C. Heath and Company)

Purpose- To draw a profile of the ocean floor of the Atlantic Ocean from Cape May, New Jersey, to Cape Roca, Portugal along the Parallel 39⁰N

Background- Listed in the table below are echo surroundings giving the Atlantic Ocean's depth from Cape May to Cape Roca along the 39⁰ north parallel.

Ocean Depths from Cape May, New Jersey to Cape Roca, Portugal at 39⁰N
(distances from Cape May in km, depth of ocean in fathoms. One fathom = approx. 2 meters)

Distance (km)	Depth (fathom)	Distance (km)	Depth (fathom)	Distance (km)	Depth (fathom)
0[1]	0	2360	3000	4040	1000
160	100	2560	1600	4320	2000
200	1000	3040	2500	4480	2800
520	2000	3200	3100	5040	2700
760	2500	3440	1800	5280	2300
1040	3000	3520	1150	5440	1000
1440	2800	3560[2]	750	5480	500
1800	2900	3720[2]	700	5560	100
2080	3125	3920[2]	550	5600[4]	0
2280	2900	3960[3]	0		

*Figures based on U.S. navy Hydrographic Office charts of the Atlantic Ocean.

Procedure-

1. Construct your graph by plotting distance on the x-axis and depth on the y-axis. Remember that zero depth is at the <u>top</u> of your graph.
2. Label those marked with superscripts with the proper names.
   *superscript 1=Cape May
   *superscript 2= North Atlantic Ridge
   *superscript 3= Braciosa Island, Azores
   *superscript 4= Cape Roca
3. Connect the points with a relatively smooth line.
4. The **continental slope** is the steep drop from the edge of the **continental shelf**. The less-steep portion after the slop is the **continental rise**. The deepest portions of the ocean are the **abyssal plains**. **Seamounts** are peaks riding from the ocean floor that do not rise to the surface. **Label all such points on your diagram.**

Analysis Questions

1. The continental shelf extends from the shoreline to a depth of 70 fathoms. How many meters is this?
2. Approximately how wide is the continental shelf at Cape May, New Jersey, and at Cape Roca, Portugal?
3. Look at the wall map showing the physical features of the Atlantic Ocean. Compare the width of the continental shelf along the east coast of North America with the continental shelf of the west coast of Europe. Does this match up with your answer in question one?
4. Your map has different intervals for your x-axis and y-axis. How does this skew the image created?
5. Because of this vertical exaggeration, the slopes look much greater than they really are. Calculate the actual slopes of the continental slope in fathoms per kilometer at Cape May and Cape Roca. (slope=$^{depth}/_{distance}$)
6. What can be learned by studying features of the ocean floor?