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NASA Lessons From the Ocean

Content Option 4 Mini-labs

Mapping the Ocean

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Mapping the Ocean
data sheet

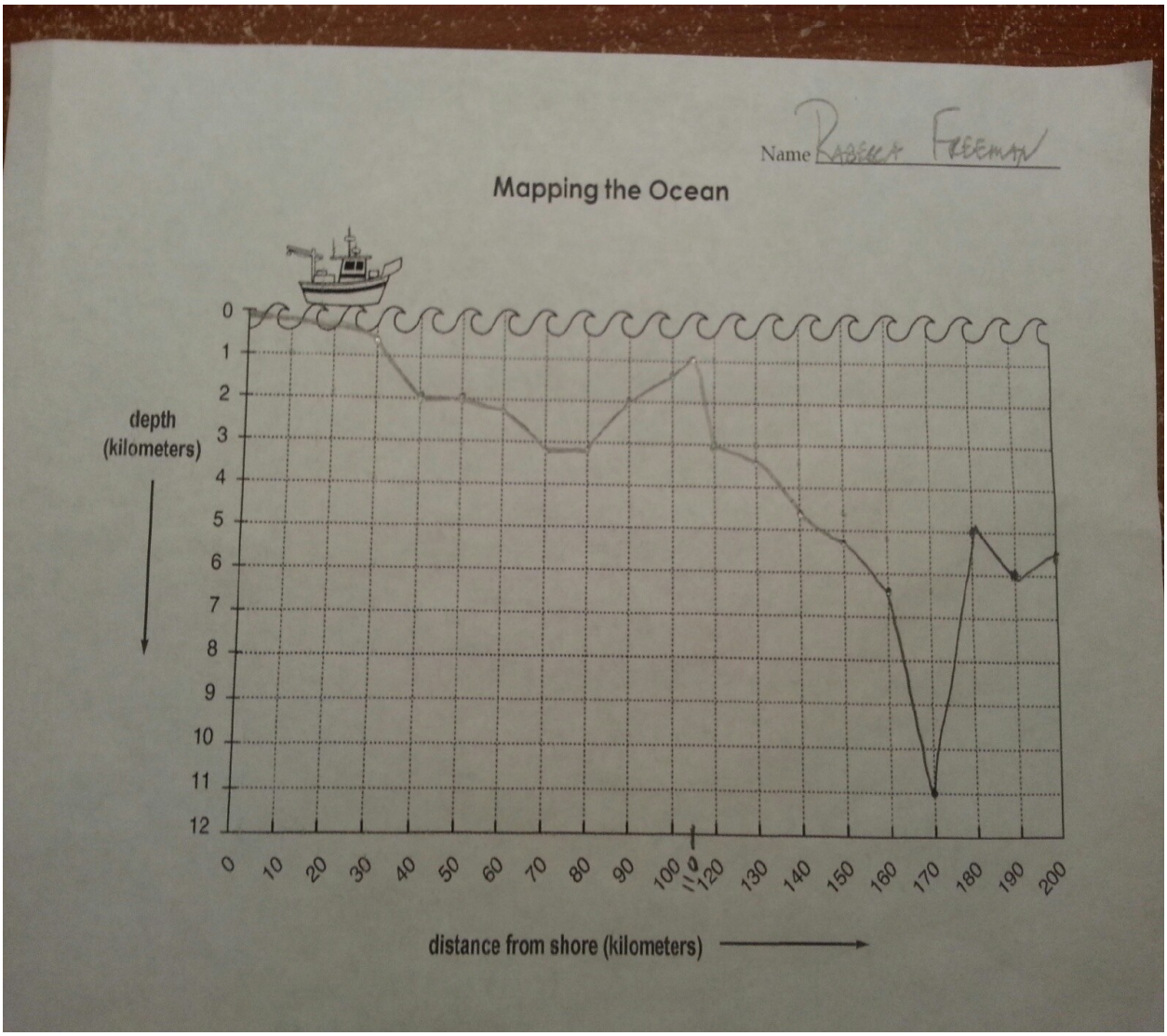
FORMULA FOR MEASURING OCEAN DEPTH

$D = V \times \frac{1}{2} T$

D = depth (in meters)
T = time (in seconds)

V = speed of sound in water
= 1,507 meters per second

distance from shore (km)	time (sec)	depth (m)	depth (km)
10	0.13	100	0.1
20	0.27	200	0.2
30	0.53	400	0.4
40	2.65	2,000	2.0
50	2.65	2,000	2.0
60	2.92	2,200	2.2
70	4.25	3,200	3.2
80	4.25	3,200	3.2
90	2.65	2,000	2.0
100	1.86	1,400	1.4
110	1.33	1,000	1.0
120	3.98	3,000	3.0
130	4.51	3,400	3.4
140	6.10	4,600	4.6
150	6.90	5,200	5.2
160	8.49	6,400	6.4
170	14.60	11,000	11.0
180	6.64	5,000	5.0
190	7.96	6,000	6.0
200	7.43	5,600	5.6



This was a great mini-lab. It gave me the opportunity to perform calculations with the calculator as well as change the depth from meters to kilometers. Once the calculations were done, I was able to graph it. This was fun because it gave meaning to the calculations. I feel that this mini-lab also helps students attend to precision. They have to be precise in their mathematical calculations as well as where they are putting their points to graph it on the map. They will have to pay close attention to what they are doing. This was a great learning experience. I was able to see the purpose behind the math. I really enjoyed this mini-lab activity and would recommend it in the future.

Reference

http://mjksciteachingideas.com/pdf/MappingMedium.pdf

http://www.us-satellite.net/nasa/endeavor/resources/oceanlinks.cfm?cat=oceanminilabs