The Gulf Stream Voyage

Lesson #4 - Rising Up to Meet the Challenge

Name _____

How will the Gulf Stream affect sea surface level?

Hypothesis: _____

_____

Which type of data will better assist you in supporting your hypothesis? (Circle)

REAL TIME DATA **HISTORICAL DATA**

Conclusion:
Answer this after you have completed the activity

_____

_____

Real Time Data Directions and Questions

1. Print out a color copy, use overlay transparencies or simply click on the "Sea Surface Temperature & Height with Overlay" link to begin this activity. You will compare how sea surface height changes in relation to sea surface temperature along the 70°W Longitude line in the North Atlantic Ocean.

2. Use your Data Collection Table to collect sea surface temperature and heights. Graph these variables using a spreadsheet program.

3. Using your graph, explain the relationship between sea surface temperature and sea surface height. Is there a direct relationship?

Name_____

Gulf Stream Voyage (Lesson #4) Real Time Data Questions Continued

4. According to your answer for question #3, where in the North Atlantic Sea Surface Height Image will you see the **greatest** sea surface heights?

5. Return to the Sea Surface Height real time data link and see if your prediction was right. (Circle Answer)

   Always Most of the time Some of the time Never

6. On which side of the gulf stream (coastal or toward the sea) do you observe the largest gradient of sea surface height?

7. Looking at the side you answered for question #6, how does the gradient of sea surface temperature compare to sea surface height?

8. In nature, all things want to attain equilibrium. Sea levels at greater height want to "fall down" so to speak. Explain how the Coriolis Effect prevents the waters at elevated sea surface heights from rolling downhill.

Name_____

Gulf Stream Voyage (Lesson #4)

Historical Data and Directions

1. Describe how sea surface height differs from one year to another.

2. Look at the hint and record what caused the difference?

3. Is this a permanent or temporary occurrence?

4. When looking at sea surface heights, what factors must a scientist take into consideration when interpreting the data?

5. Use the month buttons on the web site to access archived data for Gulf Stream sea surface heights. How does your real time data compare to the archived image?

6. Are there any weather-related causes for major differences between the two images? If so, what are they?