**Step 1:** Obtain the most recent data from the following buoys. There are blank rows for you to add in data from 3 more North Atlantic buoys of your choosing. When obtaining data, scroll down the page to the previous 24-hr observations to record any 24-hr change. Be sure to fill out the chart completely before moving to Step 2.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Buoys | Latitude and Longitude | Date and Time | Air Temperature (ATMP) | Water Temperature (WTMP) | Has there been a change in WTMP > than 10º in 24 hrs? |
| Nantucket, Island, MA8449130 |  |  |  |  |  |
| East of Long Beach, NJ44066 |  |  |  |  |  |
| South Hatteras41002 |  |  |  |  |  |
| East Scotia Slope 44137 |  |  |  |  |  |
| West Bermuda41048 |  |  |  |  |  |
| Banqureau Banks44139 |  |  |  |  |  |
| South Bermuda410490 |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Step 2:** After you gather the buoy data, color code the Water Temperature Data using the following ranges.

|  |  |
| --- | --- |
| **Temperature Range** | **Color** |
| 95-86º F | Red |
| 85-77º F | Orange |
| 76-68º F | Yellow |
| 67-59º F | Green |
| 58-50º F | Light Blue |
| 49-41º F | Dark Blue |
| 40-30º F | Purple |

**Step 3:** Open Google Earth and add a placemark for each of these buoys. Change the color of the pushpin to match the water temperature color code.

**Step 4**: In Google Earth, attempt to draw a path that shows the location of the Gulf Stream Current. (NOTE: This is a prediction, you are not expected to be able to draw the exact location at this time.) Keep in mind that the Gulf Stream current is a warm water current. When you have all ten buoys marked and a path showing the Gulf Stream Current take a screen shot of the Atlantic Ocean and add it to a NEW blog post on your Weebly Science Blog.

**Step 5:** In your blog post complete the following questions.

1. Explain the picture for someone reading your blog for the first time.
2. Based on the buoy information collected, how easy is it to accurately determine the location of the Gulf Stream? Explain.
3. What could be needed to help a scientist map the location with more accuracy?

**Step 6:** Scientists will use satellites orbiting the Earth to take pictures of oceans in order to map the ocean currents. The orbiting satellites use infrared cameras to plot temperatures across the ocean. Sea Surface Temperature Data (SST) is used to create color-coded maps. Use the maps posted on SWS to answer the following questions in your blog post. (HINT: It may help you post the SST image next to your Google Earth image in your blog.)

1. Compare your path of the Gulf Stream to the path on the SST map. How close do the data sources compare? Explain.
2. How close was your path to the path depicted by the SST data? Explain.
3. With the availability of SST imagery, why do you think scientists continue to collect data from ships and buoys?

**Step 7:** SST Data is available for the entire year. Use the slide show of SST images of the Gulf Stream to answer the following questions.

1. Describe 3 ways the yearly sea surface temperature changes of the Gulf Stream Current in the Atlantic Ocean.

**Conclusion:** Complete your blog post and proofread for errors. Post it live when you are done and complete the Knowledge Builder Google Doc for this activity.