Name:_____

Ocean Circulation Exploration

Resource #1 - Sea Surface Temperature

1. What color represents warm water temperatures?

2. Where are the warmest ocean temperatures?

3. Where are the coldest ocean temperatures?

Resource #2 - Sea Surface Salinity

1. What color represents high salinity?

2. Where is the area with the highest salinity?

3. What do you think could cause the low salinity in the Arctic (North Pole) area?

Resource # 3 - Sea Surface Density

1. What do you notice about the density of the sea surface around Antarctica (South Pole)? What do you think could be causing this?

2. Look at the Mediterranean Sea (circled on the map). How does its density compare to other areas of the ocean? What is causing this? Hint: Look back at the temperature and salinity maps in the same area.

Resource #4 - Ocean Circulation Reading

1. What factors impact surface currents?

2. What causes thermohaline circulation?

3. Why does freezing sea water at the poles increase salinity?

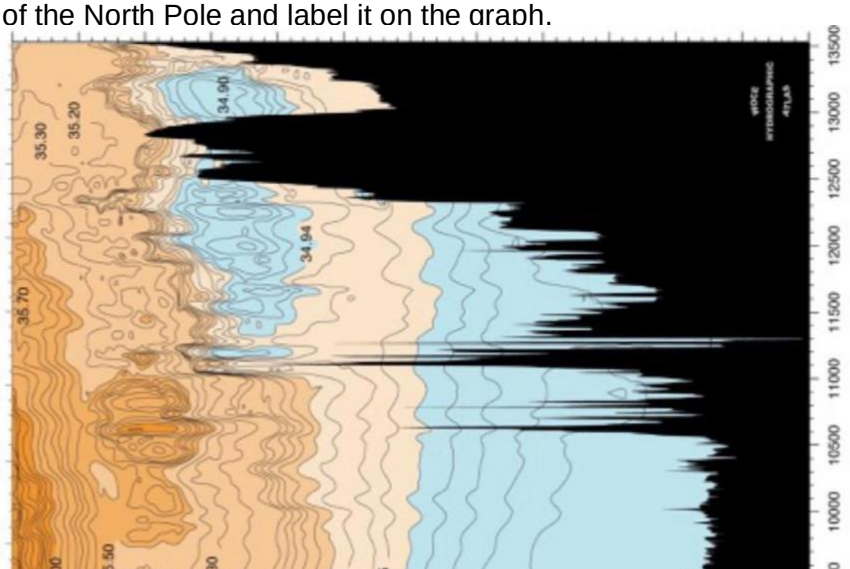
Resource #5 - Circulation Map

1. Where does the warm surface water go from the Pacific Ocean?

2. What happens to the warm surface water once it reaches the North Atlantic Ocean? Why does this happen?

Resource # 6 - Salinity Profile of Atlantic Ocean

1. Look at the axis on the top of the graph and label the following places. Hint: Use the map with lines of latitude to help identify the places.
    a. Find the latitude of the equator and label it on the graph.
    b. Find the latitude of the North Pole and label it on the graph.
    c. Find the latitu
2. What color represen
3. What color represen
4. Find the deepest loc
5. Find the most shallo



Milestone #1 - Circulation Prediction

Directions: On the salinity graph of the Atlantic Ocean above **add 2 different arrows** showing the movement of ocean water. In the blank space below the graph add an explanation for each arrow why you think the water will move in that direction. In your explanation make sure to **include information about the water's density and how that can change at different temperatures or salinities**. Your answers should be in complete sentences. You can use the sentence stems below to help you write your response.

Warm salty water is at the surface because _____ .

As warm, salty water moves north, the temperature _____ .

As the water cools, the density _____ .

Salty water sinks in the North Atlantic because _____ .

The water will move _____ because the density of water is _____ due to _____.