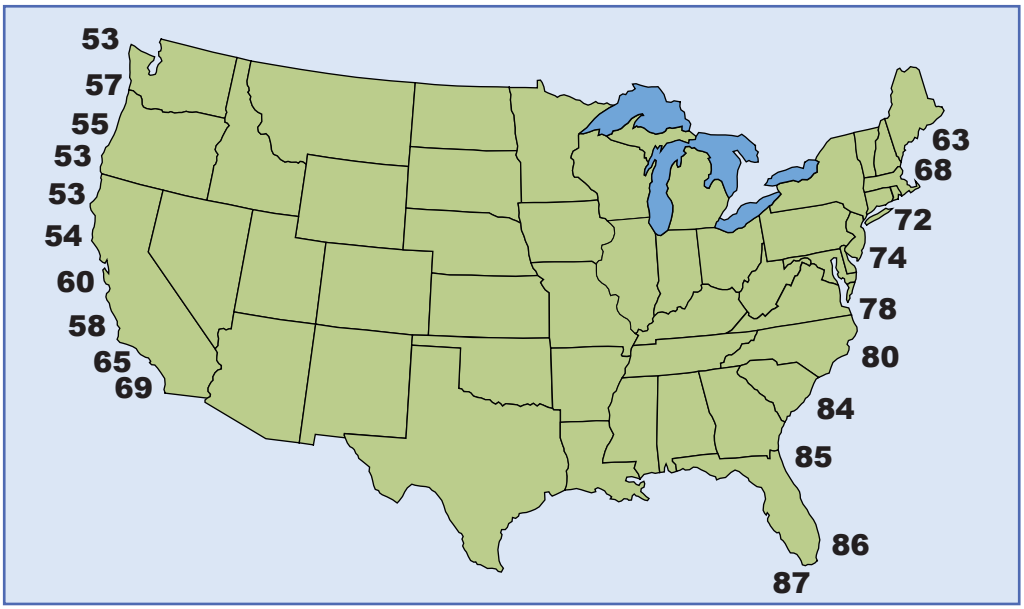
Ocean Currents and Water Temperatures

This map shows the average water temperature at 20 places in late summer.
The measurements were made a few miles offshore - temperatures can be higher in shallow water or protected areas near the shore.



Here is how east-west winds can make north-south ocean currents.

- Between Florida and the equator, the wind blows mainly from the east.
- The **easterly** winds (called **trade winds**) push water against the east coast.
- That water has to go somewhere, so it flows north along the coast.
- This water flowing from south to north is warm.

- Up near the border with Canada, the wind blows mainly from the west.
- The mid-latitude **westerly** winds push ocean water against the west coast.
- When it hits the coast, some of that water flows south, toward the equator.
- This water flowing from north to south is cold.

The whole thing looks like a giant whirlpool - water flowing north along the east coast, east across the ocean, south along the west coast, and back west across the ocean.

In this investigation, you will look at some consequences of this process.
Start by calculating the temperature difference between places that are at the same latitude on opposite coasts.

Central Oregon 55 is 8 degrees cooler than Maine 63.
Northern California _____ is _____ than New Jersey _____.
Central California _____ is _____ than Virginia _____.
Southern California _____ is _____ than South Carolina _____.

Now finish this generalization: "Compared to a place on the west coast of the U.S., a place at the same latitude on the east coast has a water temperature that is . . .