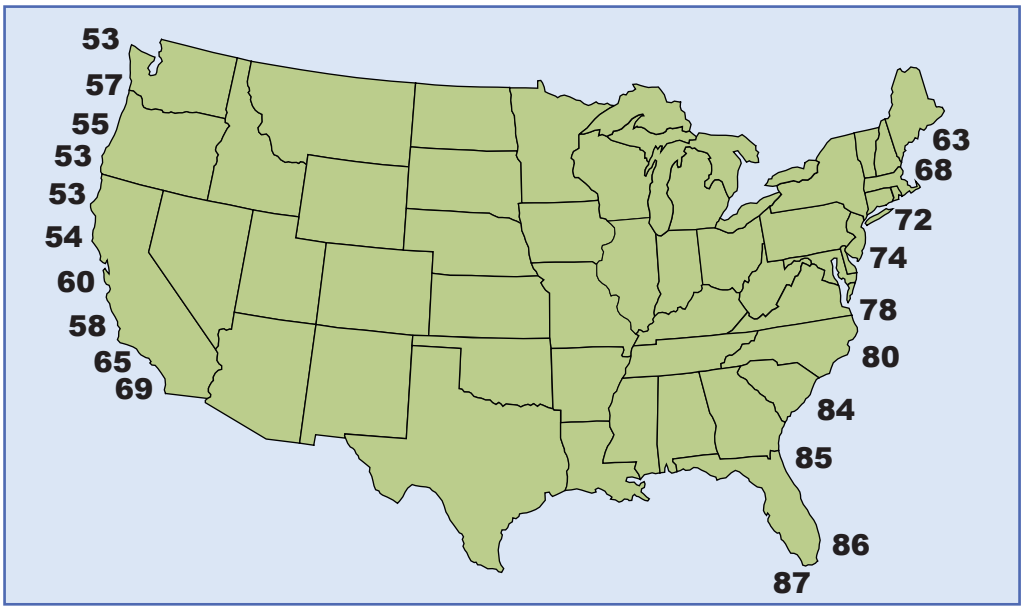
Ocean Currents and Water Temperatures

This map shows the average water temperature at 20 coastal locations in late summer. The measurements were made offshore - temperatures can be higher in shallow lagoons and other protected areas near the shore.



Here is a brief description of how east-west winds can create north-south ocean currents.

- About 15 degrees north latitude, the wind blows mainly from the northeast.
- The **northeasterly** winds (als called **trade winds**) push water against the east coast.
- That water has to go somewhere, so it flows north along the coast.
- The warm water makes the coast warmer than it otherwise would be.

- About 45 degrees north, 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.
- That cool water makes the west coast colder than it otherwise would be.

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.

Your task in this investigation is to make a generalization about the consequences of this process. Start by calculating the temperature difference between places that are at the same latitude on opposite coasts.

Maine 63 minus 55 (central Oregon) equals 8

New Jersey _____ minus _____ (northern California) equals _____

Virginia _____ minus _____ (central California) equals _____

South Carolina _____ minus _____ (southern California) equals _____

Now finish this generalization: "In general, when compared to a place on the west coast, the water temperature at a place on the east coast of the United States is . . .