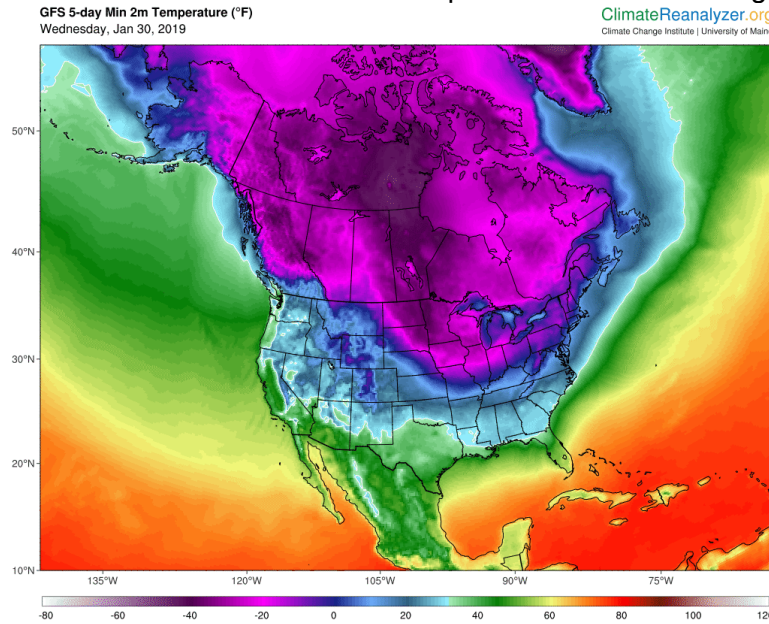


Vortex

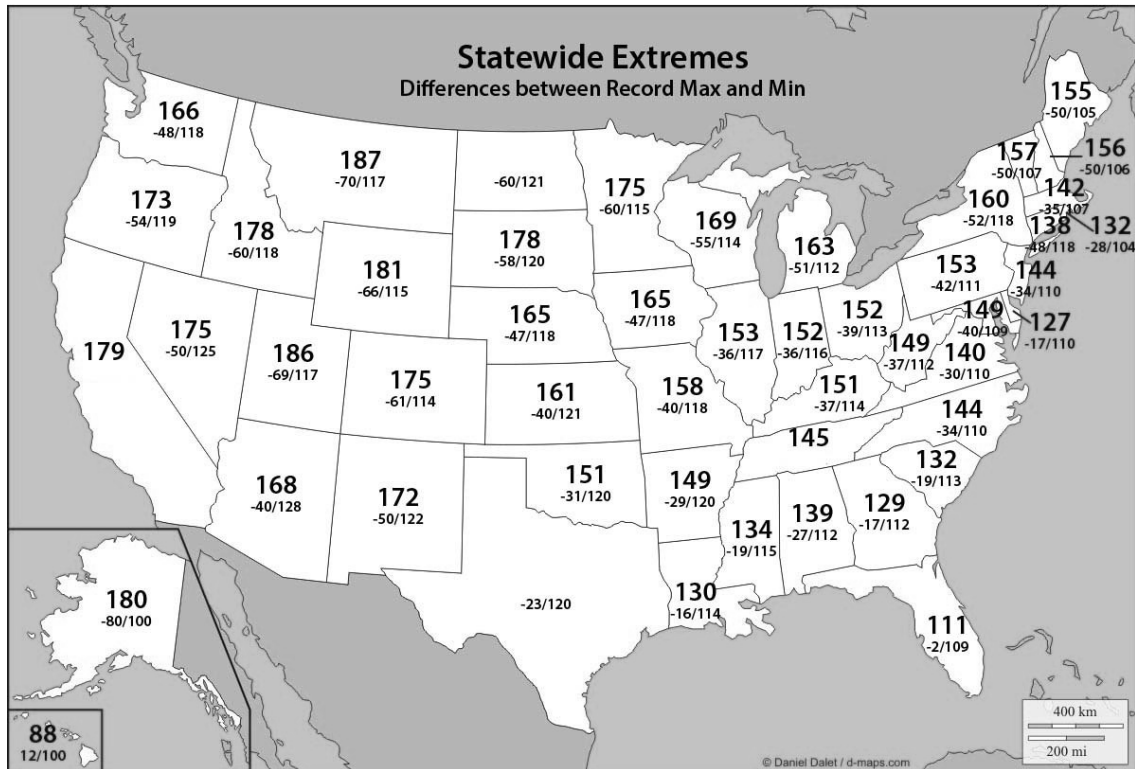
There are going to be some big temperature swings soon because of a shift in the polar vortex. Evidently the Earth retains cold air at our North and South poles because of low-pressure areas with counter clockwise rotations called Polar Vortices. During February we will be experiencing one of these distortions in circular motion which will allow the northern vortex to dip into more southern regions.



Earlier in January, in Red Wing, MN, the temperature seemed balmy at 46 degrees Fahrenheit. On Wednesday the temperature is expected to drop to -33° F. That is a long way for the temperature to drop. Sounds like math!

1. In the month of January how much will the temperature have fallen? Please show your work and explain what you did so that I can understand how to measure from 46° F to -33° F.
2. What is the subtraction process that you could use to figure out the difference between 46 and -33 and have your answer come out negative so that you could conclude that the temperature had fallen (If you hadn't noticed that it was getting colder). For instance, do you subtract the early temperature from the late temperature or vice-versa? Do you subtract the high temperature from the low temperature? Please explain.
3. In Spearfish, South Dakota, the temperature changed from -4° F to 45° F in only 2 minutes. What was the temperature range between these two minutes? Show your work.
4. The largest recorded temperature change in one place over a 24-hour period occurred on January 15, 1972 in Loma, Montana, when the temperature rose from -54 to 49° F. Show your work and describe this change.

I found this cool map that shows the ranges of high to low temperatures in each of the states in the U.S. As a puzzle for you, I've whited out some of the numbers.



- The map shows that Texas had a record low temperature of -23°F and a record high temperature of 120°F . What was the temperature range that I whited out?
- I also whited out North Dakota's range of temperatures. What should that be?
- California had a temperature range of 179°F . What could California's high and low temperatures have been?
- Take a guess on Tennessee's high and low temperatures and show your work.
- In your state or town, what are the coldest and warmest temperatures that anyone you know can remember?
- Judging from its temperatures and temperature range, which state would you like to live in?

Source: <https://www.accuweather.com/en/us/red-wing-mn/55066/january-weather/951>
https://climatereanalyzer.org/wx/fcst_outlook/