Name(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**How Has Temperature Varied Regionally Since the Industrial Revolution?**

**Exploration 2: A Comparison of Northern and Southern Hemisphere Temperatures**

In the last exploration, you learned about land and ocean temperature anomaly trends. In this exploration, you will analyze the temperature anomaly trends for the Northern and Southern Hemispheres.



Use the [**interactive, time series graphing tool**](http://www.ces.fau.edu/nasa/module-3/regional-temperature/exploration-2.php) to answer the following questions.

1. Make a few hypotheses before you begin to compare the 130-year Northern and Southern Hemisphere temperature anomalies.
2. Do you think Northern and Southern Hemisphere temperature anomalies will both show a warming trend?

\_\_\_\_\_ Yes \_\_\_\_\_ No

1. Do you think that the more recent decades will show an increased rate of warming for both Northern and Southern Hemisphere?

 \_\_\_\_\_ Yes \_\_\_\_\_ No

1. Which do you think will have a greater range between high and low temperature anomalies?

 \_\_\_\_\_ Northern Hemisphere \_\_\_\_\_ Southern Hemisphere

1. Which do you think has more variable temperature anomalies over time?

 \_\_\_\_ Northern Hemisphere \_\_\_\_\_ Southern Hemisphere

1. Uncheck the box next to *Global* and check the *Northern* and *Southern Hemisphere* boxes to display the temperature anomaly data for 1880-2010. Describe the general temperature anomaly trends over this time period.

1. To analyze the Northern Hemisphere temperature anomaly variation, click on *the Southern Hemisphere* box below the graph to uncheck it. Then click on the *Northern Hemisphere* box. You should see the Northern Hemisphere temperature anomaly data.
2. Describe the general temperature anomaly trend over this time period.
3. What is the lowest temperature anomaly recorded during that time period? What is the highest? What is the range of temperature anomalies (lowest to highest)?
4. To analyze the Southern Hemisphere temperature, click on the *Northern Hemisphere* box below the graph to uncheck it. Click on the *Southern Hemisphere* box. You should see the Southern Hemisphere temperature anomaly data.
5. Describe the general temperature anomaly trend over this time period.
6. What is the lowest temperature anomaly recorded during that time period? What is the highest? What is the range of temperature anomalies (lowest to highest)?
7. Now zoom into the graph for the last 25 years (1985-2010).
8. Describe the change in the Northern and Southern Hemispheres temperature anomalies.
9. Which hemisphere is showing more of a warming trend?
10. Which hemisphere shows more variation in temperature anomalies?
11. You previously learned that land warms more quickly than the ocean. Use the map of the Earth to the right and discuss how this relates to your answer in question 5.