

Name:

Date:

## Climate Investigation

### Guiding Question:

- Will the weather and climate patterns I observed in the local data continue into the future?
- How do the local climate patterns I investigated compare to other regions of the world?

### Definitions:

- **Anomaly** is the departure from the average climate over a certain period. For example, a positive temperature anomaly indicates that the observed climate was warmer than the average climate, while a negative temperature anomaly indicates that the observed temperature was cooler than the average climate.
- **Climate Normal** is an average of some climate variable over a 30-year period.

### Planning Phase:

1. What is the latitude and longitude of the location you are investigating? Use the values you reported in the *Weather To Climate Investigation*, or use the Carbon Mapper tool or Google Maps to find this information.

Location	Latitude	Longitude

2. How do you think this location will be impacted by climate change? In particular, how might the climate variable you investigated in the *Weather to Climate Investigation* change over time?

3. What data/information do you need in order to answer your research question?







**EXTENSION: How do the local climate patterns I investigated compare to another location?**

1. Based on your investigation, choose a 2<sup>nd</sup> location you are interested in studying in more depth.
  - a. What location did you choose? Why did you choose this location?
  
  
  
  
  
  
  
  
  
  
  - b. Using the Carbon Mapper or Google Maps, record the latitude and longitude of your second location below.

Latitude: \_\_\_\_\_

Longitude: \_\_\_\_\_

10. Navigate to the *Single Site Climate Data* and click on *Climate Change Comparisons*.
11. Follow the instructions to enter the latitude/longitude for your initial location and the second location you chose above.
12. Click on the ‘Google Motion Chart’ link. When the page loads, select the boxes next to both latitude/longitude pairs in the panel on the right, and click the play icon (below the graph).
13. Use the graph animation to answer the following questions:
  - a. Which variable is on the x-axis? Which variable is on the y-axis?
  
  
  
  
  
  
  
  
  
  
  - b. Which color represents your first location?
  
  
  
  
  
  
  
  
  
  
  - c. For your first location, how do temperature and precipitation change over time?



d. Do you observe the same patterns in climate in your second location? How are they similar or different?

e. Do the data points for the two locations you chose overlap at all? If so, what are the years for each location that are they overlapping?

14. Based on your investigation, do you expect that these locations will respond similarly to climate change? Explain your reasoning.

