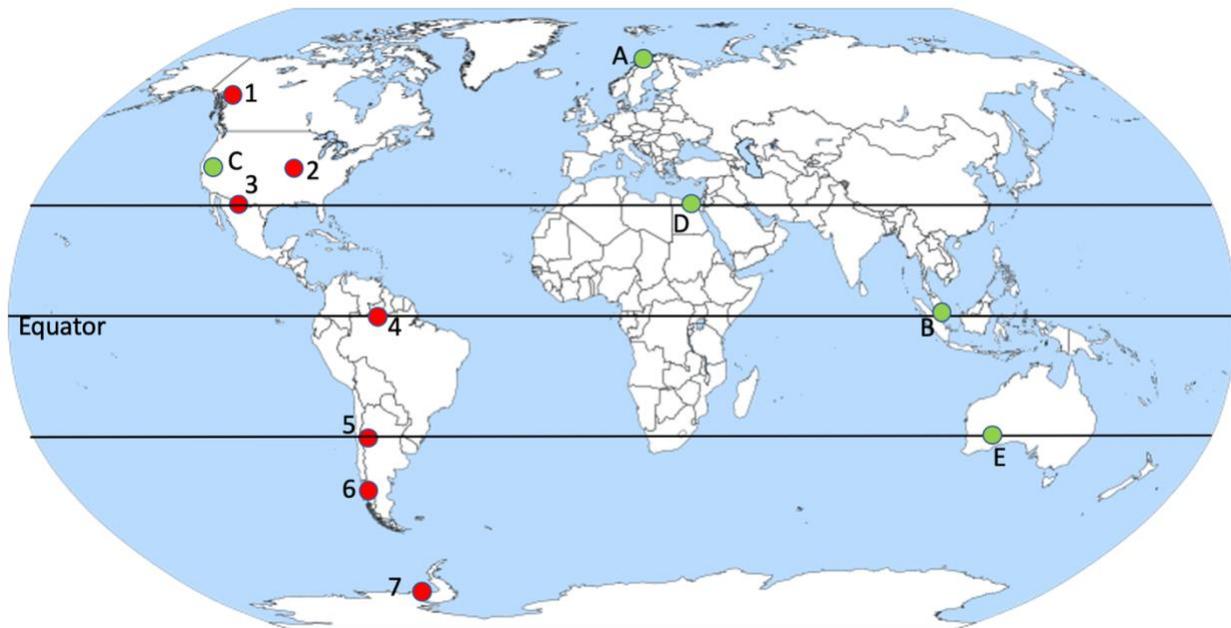# Climate from Pole to Pole

In this activity, you will compare **temperature** and **precipitation** data for a number of cities on the map. In the table, the temperature (°F) shows the average temperature for each city during the month of January. The precipitation data represent the average amount of rain or snow that city gets during the month of January.

	City	Ave. Temp. (°F)	Ave. Precip. (inches)
1	Whitehorse, Canada	5	0.5
2	Peoria, Illinois	25	2
3	Nuevo Casas Grande, Mexico	46	0.5
4	Manaus, Brazil	80	11
5	San Juan, Argentina	78	0.5
6	Puerto Montt, Chile	58	3.5
7	McMurdo Station, Antarctica	27	0.5

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I. Plot the temperature data for the locations 1-7 on the graph and answer the following questions.
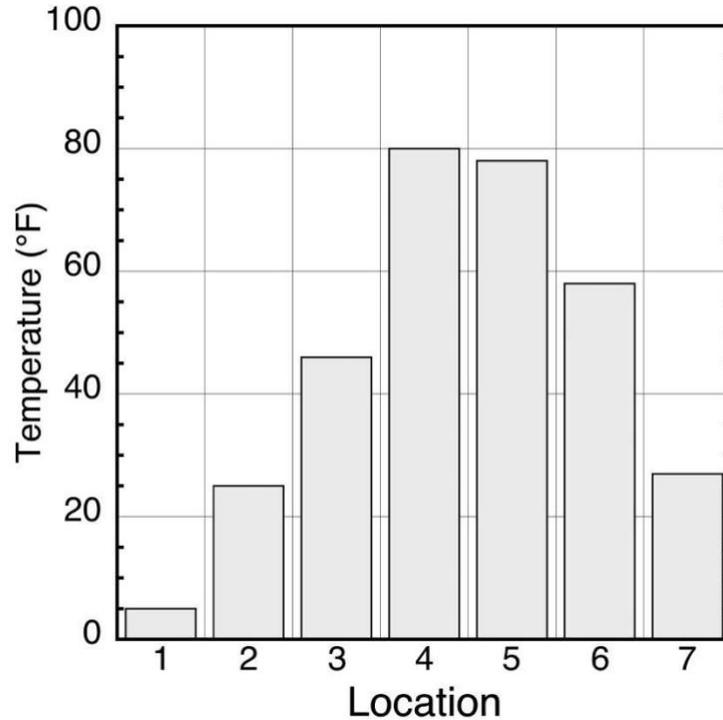
1. During the month of January, what season is it in the northern hemisphere?

Winter

2. Compare the temperatures for cities 1, 2 and 3 in the northern hemisphere.
   A. What pattern do you seen in temperature?
Temperature increases from station 1 to station 3 – from the north to the south.

   B. What do you think causes that pattern?
There is more "direct" Sun as you move toward the equator and more heating.

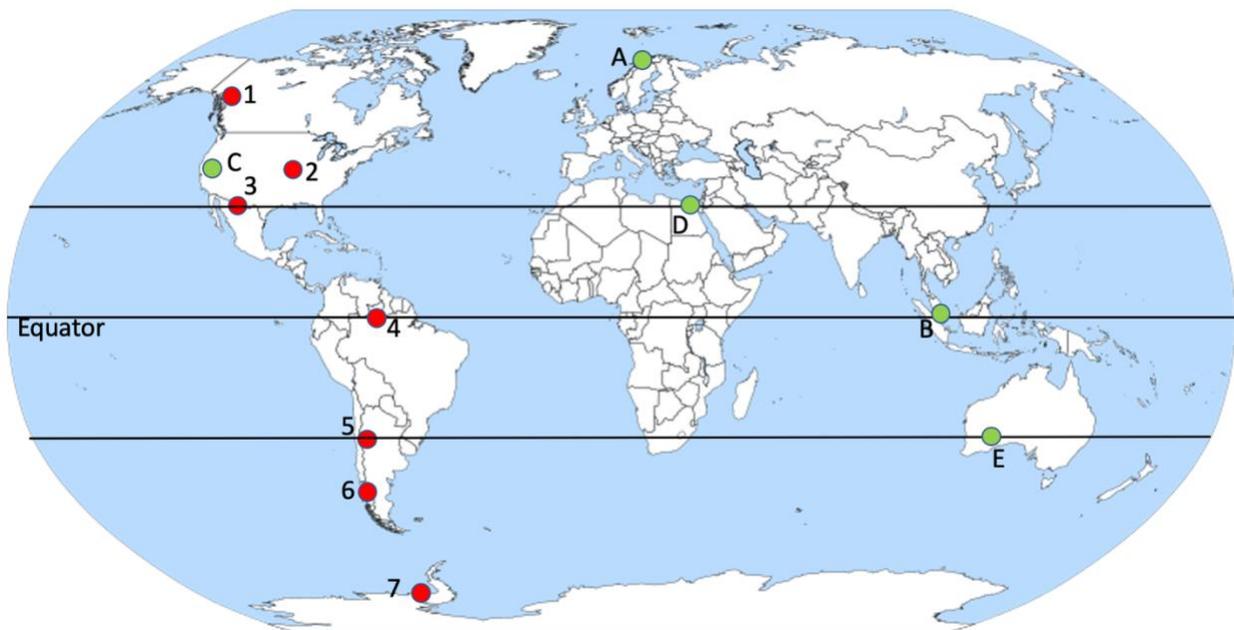3. During the month of January, what season is it in the southern hemisphere?

Summer

4. Compare the temperatures for cities 4, 5, 6 and 7.
   C. What pattern do you seen in temperature?
Temperature increases from station 7 to station 4 – from the south to the north.

   D. What do you think causes this pattern?
There is more "direct" Sun as you move toward the equator and more heating.

5. The tiny town of Alta (Location A) is located in Norway. Make a prediction about what you think the temperature will be in January. Will it be cold or warm? Why?

Alta will have a cold temperature since it is close to the North Pole (far from the equator).

6. The country of Singapore (location B) is located on the equator. Make a prediction about what you think the temperature will be in January. Will it be cold or warm? Why?

Singapore will be warm since it is very close to the equator. More direct Sun near the equator results in more heating.

II. Plot the precipitation data for the locations 1-7 on the attached graph and answer the following questions.
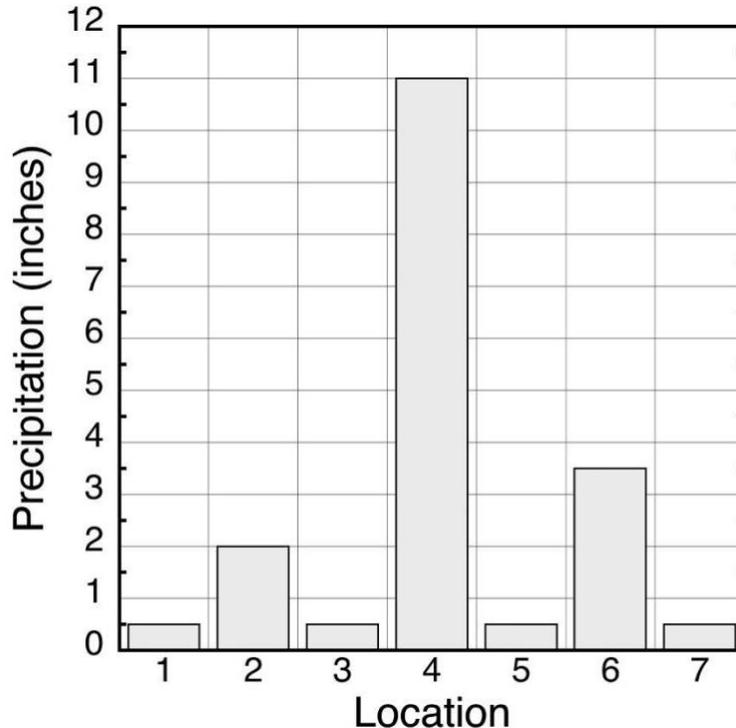
7. Compare the precipitation data for cities 3, 4 and 5. What pattern do you see in the precipitation?

Station 4 is right on the equator and gets a lot of rain. Stations 3 and 4 are further from the equator and get little rain since they have an arid environment.

8. Make a prediction about how much precipitation Cairo, Egypt (location D) will get. Do you think it will be very wet or very dry? Why?

Cairo will be very dry since it is the same distance from the equator as other arid places such as Nuevo Casas Grande, Mexico (location 3) and San Juan, Argentina (location 5). It is the band of arid environments.

9. Make a prediction about how much precipitation the city of Kalgoorlie, Australia (location E) will get. Do you think it will be very wet or very dry? Why?

Kalgoorlie will be very dry since it is the same distance from the equator as other arid locations. It is located in the band of arid environments.

10. Make a prediction about how much precipitation Singapore (location B) will get. Do you think it will be very wet or very dry? Why?

Singapore will be very wet since it is so close to the equator where there is a band of tropical rainforests around the world.

III. Description of Climate
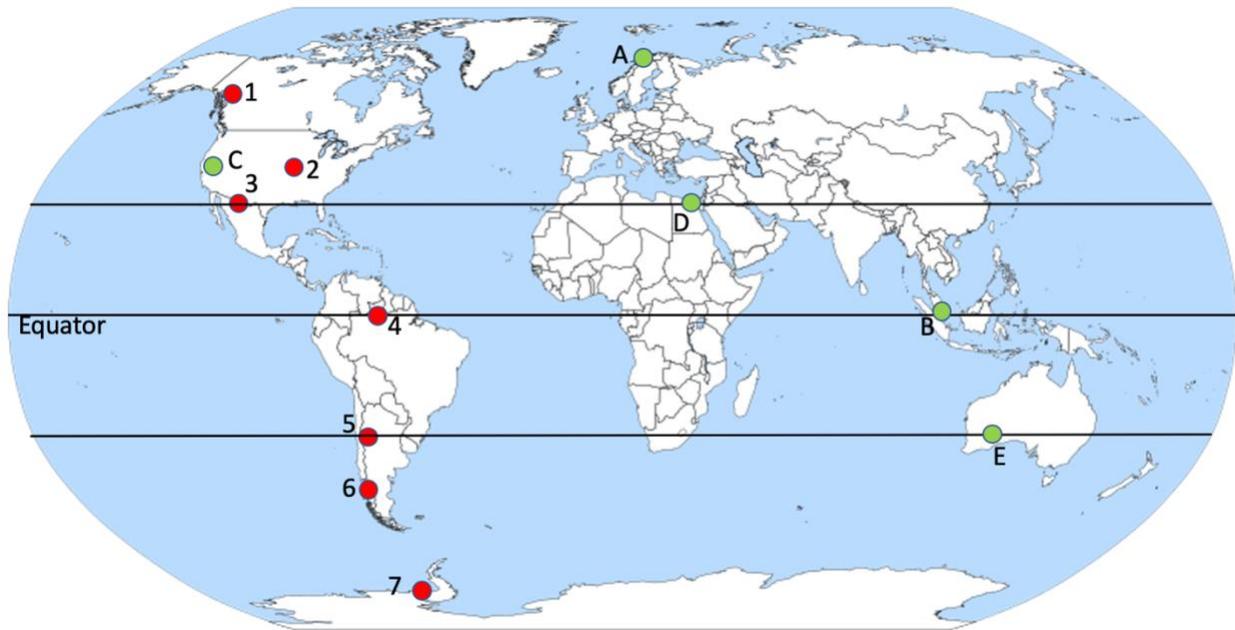
11. Using the temperature and precipitation data in the table, how would you describe the climate for San Juan, Argentina (location 5)?

Warm and dry

12. Which city in North America do you think that the climate of San Juan, Argentina is most similar to?

Nuevo Casas Grande, Mexico (location 3). There are both in the band of arid environments.

13. Using the temperature and precipitation data in the table, how would you describe the climate for Whitehorse, Canada (location 1)?

Cold and dry. It is so cold because it is very close to the North Pole.

14. Which city in the southern hemisphere do you think the climate of Whitehorse, Canada is most similar to? Remember that there are different seasons in the northern and southern hemisphere.

It would be similar to Puerto Montt, Chile (location 6) and McMurdo Station (location 7). They are all close to the Earth's poles.

15. Using the temperature and precipitation data in the table, how would you describe the climate for Manaus, Brazil (location 4)?

Warm and wet. Manaus is close to the equator, so it is warm and is in the global band of tropical rainforests so it is wet.