

Comparing Cities With Box Plots

You may choose to work with degrees C or degrees Fahrenheit.

Place the average monthly temperatures for Seattle, WA in L1.

Average Monthly Temperature in Seattle, WA

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
°C	4.5	6.3	7.5	9.5	12.8	16.0	18.4	18.6	15.8	11.5	7.3	4.7	11.1
°F	40.1	43.3	45.5	49.1	55.0	60.8	65.1	65.5	60.4	52.7	45.1	40.5	52.0

Place the average monthly temperatures for Salt Lake City, UT in L2.

Average Monthly Temperature in Salt Lake City, UT

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
°C	-1.7	0.9	5.2	10.1	14.9	20.4	25.2	24.1	18.4	11.6	4.6	-0.3	11.1
°F	28.9	33.6	41.4	50.2	58.8	68.7	77.4	75.4	65.1	52.9	40.3	31.5	52.0

Place the average monthly temperatures for Denver, CO in L3.

Average Monthly Temperature in Denver, CO

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
°C	-1.2	0.7	3.8	9.0	14.0	19.3	23.0	21.8	16.8	10.7	3.8	-0.5	10.1
°F	29.8	33.3	38.8	48.2	57.2	66.7	73.4	71.2	62.2	51.3	38.8	31.1	50.2

Select a window that will view all temperatures (x – values).

Select $x_{scl} = 5$ to make reading the values easier.

$Y_{min} = 0$ and $Y_{max} = 10$ is an acceptable vertical window. $Y_{scl} = 0$ sets no tick marks on the y-axis.

To view the graph press GRAPH.

Press TRACE. The screen will describe the plot you are on, and the highlighted value. Gather the following information.

	Seattle, WA	Salt Lake City, UT	Denver, CO
median temperature			
lower quartile value			
upper quartile value			
range of data between the upper and lower quartile			
minimum monthly temperature			
maximum monthly temperature			

Based on the information you have collected do the monthly temperatures seem close together or varied? Explain your reasoning based on the box plot.

If you were looking to move to a city where the temperatures varied over the year, which city would you recommend. Support your reasoning based on the box plots.

Suppose you chose Seattle as the city where you would like to move to. If all the average monthly temperatures rose by 1 degree C, how would this change the information about this city.

Press LIST and move to the top of that list and enter L1+1 and ENTER.
Press GRAPH to view the box plots.

Trace along the graph to see what has changed. What information changed? Why did it change? What information did not change? Why didn't it change?

Would you still want to move to Seattle? Why or why not?