

Creating a Box Plot

- Box Plots can create a visual of the statistics for any set of data
- Enter data the same as we did for the last two activities
- Set up the three plots for a regular box plot
 - Press 2nd PLOT (Y=) and set up as illustrated.

```
Plot1 Off
Type: L1
Xlist: L1
Freq: 1

Plot2 Off
Type: L2
Xlist: L2
Freq: 1

Plot3 Off
Type: L3
Xlist: L3
Freq: 1
```

- Press 2nd PLOT to confirm the set up

```
2nd PLOT
Plot1 On
L1 1
2: Plot2 On
L2 1
3: Plot3 On
L3 1
4 Plots Off
```

To Enter Data

- Press LIST and enter C temperatures

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

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

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

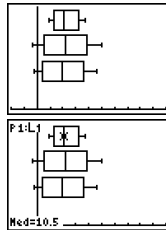
- Select a window that will view all temperatures (x – values)
- Select xscl = 5 to make reading the values easier
- Ymin = 0 and Ymax = 10 is an acceptable vertical window
- Yscl = 0 sets no tick marks on the y-axis.

```
WINDOW
Xmin=-10
Xmax=50
ΔX=.6382978723...
Xscl=5
Ymin=0
Ymax=10
Yscl=0
```

Viewing the Graph

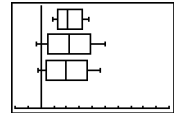
- Press GRAPH
- Press TRACE. The screen will describe the plot you are on, and the highlighted value.
- Gather the following information

	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			



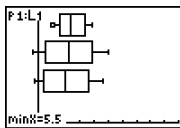
Think about this

- 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.



Extension Activities

- Suppose you chose Seattle as your city you would like to move to. Suppose 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.
- 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?

