Investigating Temperatures at the Same Latitude

The table below shows average monthly temperatures for three different cities in the United States. These cities are all located at approximately the same latitude.

Data Table

City	Latitude/ Elevation	Average Monthly Temperatures (in °F)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
San Francisco, CA	38° N/ 52 ft	57	60	62	63	64	66	67	68	70	69	63	57
Colorado, Springs, CO	39° N/ 6,035 ft	43	45	52	60	69	79	85	82	74	63	51	42
St. Louis, MO	39° N/ 466 ft	39	45	55	67	75	83	87	86	79	68	56	42

1. Make a line graph to plot the temperature data from this data table. Draw one line in a different color for each city. Make sure to use dark colors that you can see well on paper, or use the colors your teacher assigns you. (See the instructions on page 2 for making a line graph.)

2. What temperature patterns do you notice in your line graph? What similarities and differences do you observe when you compare the temperatures of the three cities?

> *Patterns I noticed:*

How to Make a Line Graph

A. Review the data on the data table and decide how to represent the information on your line graph. Which data should be represented on the *x*-axis, and which data should be represented on the *y*-axis? Because you want to compare the temperatures of the three cities, you'll need to plot the temperature data on one axis and the time of year (in months) on the other axis.

B. Once you decide which data will be plotted on the *x*-axis (the horizontal line) and the *y*-axis (the vertical line), label each axis using these headings: "Average Temperature (in ºF)" and "Time of Year (in Months)."

C. Add tick marks for each month along the axis you selected for plotting the time of year. Then add a label for each month along the axis (Jan, Feb, Mar, etc.).

D. Based on the data, determine the highest and lowest temperatures you'll need to plot on the graph and create tick marks along the axis you selected for plotting temperature data. Label the lowest temperature on one end of the axis and then add temperature labels every five degrees (or tick marks) until you reach the highest temperature. For example, if your lowest temperature is 30 ºF, write that number at one end of the axis, and then count five tick marks along the axis and write 35 ºF. Continue writing temperature labels every five tick marks (40 ºF, 45 ºF, 50 ºF, and so on) until you reach the highest temperature label (80 ºF).

E. Give your graph a title so everyone will know what it's about.

F. Then plot the data from the data table on your graph.

   1. Decide which city to plot first and choose a color for that city.
   2. Beginning with January, read the temperature for that city on the data table.
   3. On the graph, trace your finger along the line from the label for January until you reach the spot that represents the temperature shown on the other axis.
   4. Make a dot, called a **data point**, at that spot.
   5. Repeat these steps for the remaining months for that city.
   6. Finally, draw a smooth line that connects all the dots for that city.

G. Repeat steps 1–6 for the remaining two cities. Make sure to use a different color for each city.