When does Spring Spring? Comparing migrations and physical predictors of spring.

Phase 1 Gather trend data: Use the internet to gather data about the temperature, length of day, cloud cover, and precipitation (type and amount) in our town for the last five years before this year for the Monday's between January 1 and May 31. (Each member of your group should do one dataset) Prepare graphs to represent the trends you see (trend graphs are line graphs or X Y scatter plots).

Gather the same data for another town in an different state at the same Latitude. Add these lines to your graphs in a different color.

- For which types of data do the lines for each town have a similar shape?
- For which types of data do the lines for each town have a different shape?

Go to the website http://www.learner.org/jnorth/search/ This is an online data gathering sight for signs of spring. Look at spring for each of the past five years. Click on a species seen commonly migrating in spring, and look at the update maps for that date. Find the map where that species was first seen north of Heyworth in Illinois each year and north of your second city. Record this date as the date when migratory spring sprang that year for each location.

Recall that the day following the vernal equinox is the orbital first date of spring each year because of the Earth's position in orbit causing daylight to last longer than 12 hours each day. Find the exact date of the first day of spring for each of the past five years.

- Mark the first day of orbital spring and the first day of migratory spring as a vertical line on your graphs.

Phase 2: Analyze:
- What are the best predictors of migratory spring?
- Since latitude determines length of day, does latitude also determine the date of migratory spring? Explain.

Phase 3: Hypothesize:
- Plot the trend data for your best predictors' identified above for this winter beginning with January 1. Based on your previous data predict the exact date of migratory spring for this year for home and your second city.
- Write a paragraph describing your prediction and how it was reached.

Phase 4: Test:
Now you will wait and see how well you did. In the meantime your group will
1. monitor the progression of migrations using journey north
2. learn about the species you're working on for migratory spring
3. use sunlight data and clues to identify mystery locations including longitude and latitude.

Phase 5: Analyze and conclude: When your spring species arrives we will discuss all of your predictions and make recommendations for the best way to predict when spring springs.