**Name_____ Date_____**

**Lab # _____**

# Weather Analysis

**Objective:** The objective of this laboratory activity is to determine how weather variables can be used to predict the weather.

**Vocabulary:**

**Air pressure -**

**Temperature-**

**Dew Point-**

**Relative Humidity-**

**Station Model-**

## *Problem:*

(1) What is the relationship between temperature, dew point temperature, and humidity?

(2) What is the relationship between temperature and pressure?

# Weather Analysis Lab

In this activity, you will use observations of weather data to try to determine any patterns and relationships that can be used to predict weather. Your lab report should include the following:

- **Cover Page**
- **Vocabulary, Problem Statements, & Hypotheses**
- **Data Table & Station Models**
- **Graphs**
- **Written Analysis**
- **Conclusions**
- **Evaluation**

## *Procedure:*

1. Use your weather observations to construct at least two station models for the data **you collected** for the past two days. Construct 4 other station models to represent the weather conditions over the past two days. You may use the data from the National Weather Service web site. (see below).

2. Make observations of the **hourly** weather conditions for the past two days. Use the data from the National Weather Service site(s) :

   Current Weather Conditions –Islip, MacArthur Airport, New York
   [http://weather.noaa.gov/weather/current/KISP.html]

   Current Weather Conditions –New York State locations
   [http://weather.noaa.gov/weather/NY_cc_us.html]

3. Use ***Excel*** to make a table of your data. In the first column record the following:

   **Date**
   **Time**
   **Temperature ($^{o}$F)**
   **Dew Point ($^{o}$F)**
   **Air Pressure (in)**
   **Current Weather**
   **Wind Speed**
   **Wind Direction**

4. Record data every 2 hours. Print out your data table.

5. Make a line graph (chart) that compares **temperature and dew point** versus **time.**

6. Make a line graph of **air pressure** versus **time. *** (See option)**

7. ***Option: Graph both temperature and pressure using the same chart, but different vertical axes. **You need to use a different scale because temperature uses a scale from $0^{o}$F – $100^{o}$F, while air pressure is in inches, 29.5-31.5. (Use the Chart Wizard in Excel. Go to Custom Charts and choose graph with two vertical axes).**

8. Label your X and Y axis, and add a title to your graphs.

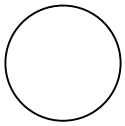
9. Try making other types of graphs that may help you understand relationships between other weather factors.

***Analysis:*** Describe any patterns that the graphs show. Relate the weather conditions to the patterns observed. **Don't forget to look at weather conditions (rain, fog, clear, snow, etc) when you study your graphs**.

***Conclusions:*** Write conclusions about the relationship between temperature, dew point, and air pressure based on the real data that you observed and analyzed. How can this be used to make weather predictions? Give examples.

***Evaluation:*** Write an evaluation about this activity. Did you learn enough by graphing and analyzing the data that you feel confident in interpreting weather data? What helped you the most in learning the relationships between pressure, temperature, dew point, and weather conditions? What did you like about it? Dislike? How can it be improved?

## *Station Models*



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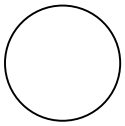

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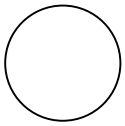

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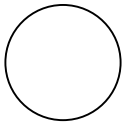

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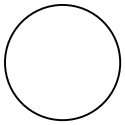

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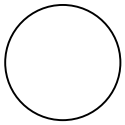

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