Climate Change
Student Activity #1

Name ________________________________  Date __________
Partner(s) ________________________________________________________

Introduction: In this activity you will be using your own knowledge of weather patterns, your classmate’s knowledge and a climate index found on the Internet to help analyze climate change in ___________________.
(Location)

Pre Internet discussion:
1) What stands out in your mind regarding the weather for your location last year? (Ex. A colder than normal winter, a dryer than usual spring, etc.)

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

2) In the chart below, list your thoughts about the year. Record in “your thoughts” column, cooler, warmer, normal or unsure, according to your ideas.

<table>
<thead>
<tr>
<th>Season (State-By-State)</th>
<th>Your Thoughts</th>
<th>Classes Thoughts</th>
<th>Actual, Factual Occurrence Using the climate index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2B) Choose a person to record the classes’ results for each of the seasons above. Everyone should record these findings on their own worksheets.
3) Make some observations regarding the results of the two columns. (Did everyone think the same way?)

Student Activity #2

Data Collection:

**Directions:** You will be using the Internet to acquire the data regarding average temperatures for different seasons for your State and Country. Make sure you have an access or user number (check with your instructor) before you begin.

**Directions:**
1) type in the website [http://lwf.ncdc.noaa.gov/oa/climate/climateresources.html](http://lwf.ncdc.noaa.gov/oa/climate/climateresources.html) on the address bar and type in enter. You are now in the “Climate Index”. This is a system that collects data regarding the weather from locations all over the world and keeps the data on file. It also calculates the average temperatures, according to the years listed. Take some time to explore the climate index.

2) To complete this worksheet, Click on “Research and Applications”
   b) Click on the “Climate of 2002”
   c) Click on “Climate at a glance”
   The screen will show a map for the United States for the current months temperature and precipitation (wait long enough to see the map switch variables)
   d) Scroll below the map and enter the desired month, year and click submit
   e) Choose a month for each of the seasons and determine if New York State was warmer, cooler, or average by using this method.

3) Record your findings in the chart under question 2 on the first page. This information should complete that chart.

4) Complete the following table using your newly developed skills with the climate index and your partner(s) assistance. (You may want to divide up the task and assign each person a job and then compile your data as a group)
<table>
<thead>
<tr>
<th>Time Period</th>
<th>Temp.</th>
<th>Precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>June-August 2001</td>
<td>Average = A</td>
<td>&gt; = Greater</td>
</tr>
<tr>
<td></td>
<td>Cooler = C</td>
<td>&lt; = Less</td>
</tr>
<tr>
<td></td>
<td>Warmer = W</td>
<td>A = average</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
</tr>
<tr>
<td>South</td>
</tr>
<tr>
<td>West</td>
</tr>
<tr>
<td>National</td>
</tr>
</tbody>
</table>

**Conclusions:** Based on the completed chart above make three conclusions regarding the data.

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________________________________________________________________________
Extended Activity:
Climate Change in My City

Name ________________________________  Date ___________

Partners _______________________________________________
(teams of 3-5)

**Task:** Using the following website
http://lwf.ncdc.noaa.gov/oa/climate/climateresources.html
the library and other resources, complete the following data worksheet with your partners and then make a 2-5 minute presentation in the form of a News Report or a Travel Promotional to present to another group of students. Note the rubric-scoring sheet that will be used to judge your presentation before you begin the process.

**Data Work:**
1) Region of the United States or country that you are investigating?

2) What is the temperature range for an average year for this location?

3) Describe this location's seasons, temperature, precipitation, wind patterns, etc.

4) List the latitude and longitudes for the area selected.

Willow Biomass Module
www.esf.edu/willow
Contact person: Dr. Larry Abrahamson
5) Notable factors effecting climate such as proximity to large bodies of water, mountain ranges, arid locations, wind patterns etc.

_______________________________________________________

_______________________________________________________

_______________________________________________________

_______________________________________________________

_______________________________________________________

_______________________________________________________

6) Are there any warming or cooling trends for last year compared to this locations average temperature. Use the technique from the earlier worksheet.

_______________________________________________________

_______________________________________________________

_______________________________________________________

7) Other interesting climate, geological, astronomical factors regarding the area.

_______________________________________________________

Please add more information on your own paper and feel free to add pictures, diagrams, graphs etc.
RUBRIC (scoring for the extended activity: Climate Change in My City)

Teacher Guidelines:
1) Each student team of 3-5 people should complete their own factual worksheet to turn in to the instructor. They should be asked to keep all worksheets in their notebooks when they are returned. The data collection for the fact sheets can be completed by the team but each individual in the team should write out their own worksheet.

2) Each team should make a list of the tasks each person in the team will complete. The instructor will check the list and make modifications if needed so that individual strengths are highlighted and equality of work is demonstrated. This will be completed at the beginning of the project.

3) Before the presentations are made, the instructor should complete a check for accuracy of the information on the student’s factual worksheets.

4) Practice a mock presentation with the class and lead a mock class scoring session so that the students are familiar with the scoring process before they are asked to score other students.

5) Each group will contain two teams for the presentations; the presenters and the observers. While one team is making their presentation, the observers should check off the rubric and score them. After the presentation, each scorer should sign their sheets and tally the total score. Everyone’s scoring sheets should be collected, secured together and turned into the instructor or placed in the provided folder. The instructor should act as facilitator, clarifier during this process but not critique the presentations. The teams will switch and the roles of observer and assessors will also switch.

6) The instructor should average the scoring sheets for each team presentation and use this as their assessment grade for the activity.

Note* Using the team assessment approach cuts down on the time needed to evaluate student work, increases student involvement and interest and teaches high order skills such as evaluating/assessing.
Student Scoring Sheet
For The Extended Activity:
Climate Change in My City

Team Name making the presentation:
_________________________________________________________________

Name of individual scoring the presentation:
_________________________________________________________________

Each student is responsible for making an assessment of the presenting group. After the presentation, each scorer should sign their sheets and tally the score. Everyone’s scoring sheets should be collected, secured together and turned into the instructor or placed in the provided folder.

10-point assessment

3pts 1) Pre presentation work:

_____*Student’s data worksheets are all completed and accurate
_____*A bibliography of resources is provided (three different sources needed one of which should be the use of the computer).

*(The instructor should preview the student’s data sheets prior to the presentation to check for accuracy.)

2pts 2) Group presentation:

_____*Fits within the 2-5 time minute period
_____*Information was clear and concise
_____*The material was understandable to peer group

2pts 3) Data Presentation:

_____*A clear presentation of the data is made using a chart, graph, poster, or visual aide

3pts 4) Team building:

_____*Student task list shows all members participated
_____*A clear use of all team members’ skills and talents was demonstrated in the task assignment list
_____* Everyone on the team participated and was involved in the presentation

________

Total points