Unit Title: Weather vs. Climate

Lesson: Climate Factors Past and Present

Time Requirement: 90 minutes

Submitted by: Karen McCabe

Recommended Grade Level: Grade 8

Discipline: Earth and Space Science

Topic: Climate

#### **Required Materials:**

1. Computer with internet access for each student group

2. "Climate Factors: Past and Present" handout

3. Internet Resources

Weather Eye: <a href="http://weathereye.kgan.com/cadet/climate/climate\_vs.html">http://weathereye.kgan.com/cadet/climate/climate\_vs.html</a>
A Student's Guide to Climate Change: <a href="http://www.epa.gov/climatechange/kids/">http://www.epa.gov/climatechange/kids/</a>

### **Lesson Objective:**

Students will formulate working definitions of weather and climate and use the Internet to research and identify factors that affect Earth's climate system.

#### **National Science Standards Alignment**

Earth and Space Science

- Structure of the Earth system
- Global patterns of atmospheric movement influence local weather.

Abilities Necessary to Do Scientific Inquiry

- Use appropriate tools and techniques to gather, analyze and interpret data.
- Develop descriptions, explanations, predictions, and models using evidence.
- Think critically and logically to make the relationships between evidence and explanations.

## **Recommended Ward's Science Materials**

Atmospheric Convection ApparatusItem No. 807012Earth's Atmosphere, Weather and Climate DVDItem No. 1950359Ward's DataHub: Environmental ScienceItem No. 9200501

## **Procedure**

<sup>\*</sup>Note: This lab activity was submitted to Ward's Science by a third party educator for the sole purpose of sharing content and ideas with other educators. Ward's Science is not affiliated with the author of this lesson plan. All product recommendations made by Ward's Science are suggestions for completion or extension of the activity or topics addressed, but are not required to complete the activity.

- 1. Engage students in whole class brainstorming session about the differences between weather and climate.
- 2. Draw a T-chart for Weather and climate on chalkboard or interactive whiteboard.
- 3. Allow students to discuss and record their ideas of what factors comprise weather and climate.
- 4. Guide students as they formulate an accepted definition for weather and climate.
- 5. Record the class definitions on the chart.
- 6. Form student groups of 3-4 and assign them to a computer with internet access.
- 7. Go to the Weather Eye Web site (<a href="http://weathereye.kgan.com/cadet/climate/climate\_vs.html">http://weathereye.kgan.com/cadet/climate\_vs.html</a>) to read an explanation about weather vs. climate.
- 8. Go to "A Student's Guide to Climate Change" website <a href="http://www.epa.gov/climatechange/kids/">http://www.epa.gov/climatechange/kids/</a> to read another description of weather and climate.
- 9. Students will complete the chart found on "Climate Factors Past and Present" handout.
- 10. Handouts will be collected and graded.

	Name:_			
	Date:			
	Day:	Period:		
Climate Fact	ors: Past and Present			
Directions: Use the <u>Learn the Basics</u> tab found on the <u>Kids Guide to Climate Change</u> website found at <a href="http://www.epa.gov/climatechange/kids/basics/past.html">http://www.epa.gov/climatechange/kids/basics/past.html</a> to complete the following.  Explain three reasons why today's climate change is different than the climate change of the past.				
I. Complete the ta	able below to examine natural factors that affe	ct climate.		
Climate Factor	Description	Illustration		

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Changes in the Earth's orbit	
Changes in the sun's energy	
Photosynthesis	
Volcanic eruptions	

# **Resources**

This unit plan was adapted and modified from a NOAA resource I found at the following:

http://oceanservice.noaa.gov/education/lessons/which location.html

Weather Eye: http://weathereye.kgan.com/cadet/climate\_vs.html

A Student's Guide to Climate Change

http://www.epa.gov/climatechange/kids/

NOAA JetStream - Climate: <a href="http://www.srh.noaa.gov/jetstream/global/climate.htm">http://www.srh.noaa.gov/jetstream/global/climate.htm</a>

United States Annual Mean Daily Average Temperature: <a href="http://www.ncdc.noaa.gov/img/about/cdrom/climatls1/info/temp.gif">http://www.ncdc.noaa.gov/img/about/cdrom/climatls1/info/temp.gif</a>

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