LESSON PLAN: Are the World's Weather and Climate Changing?

Weather Quiz KEY

Directions: Using what you have learned from other classes and resources, answer each question below.

1. True or False: Climate is the average or typical weather conditions for a given area.

   - Using the graphic organizer available at http://www.fsl.noaa.gov/visitors/education/climgraph/CG_Figure_10.gif.html explain to students the factors that affect the climate for a given area.

2. True or False: Extreme weather events can be caused by changes in climate.

   - According to two of the best-know American atmospheric scientists, "….climate changes are likely to buffet Earth in coming decades, including rising temperatures and an increase in extreme weather events such as flooding." **

**Taken from "Climate Study Predicts Dire Events available at http://usgovinfo.about.com/cs/technology/a/climatestudy.htm

   - NOAA's 10 Year Timeline for Climate Related Events illustrates how climate can directly impact the weather in an area. http://www.ngdc.noaa.gov/paleo/ctl/10.html

3. True or False: In 2005 we experienced a record hurricane season with more named storms than ever recorded.

   - Using data from the NOAA site on the 2005 Hurricane season, students can see data related to the hurricanes that have occurred during the year and how these storms rank in comparison to average years and to the most destructive storms in history. http://www.ncdc.noaa.gov/oa/climate/research/2005/hurricanes05.html

4. True or False: Very warm water provides the best energy source for hurricanes.

   - Using the article "Hurricanes Mark Unusual Spike in Already Active Storm Cycle" available at http://www.pbs.org/newshour/updates/hurricanes_09-23-05.html, students can learn how water temperature combined with other factors helps to produce hurricanes.

5. True or False: Over the past 30 years, the number of powerful hurricanes has nearly doubled.

   - Using the article "Hurricanes Mark Unusual Spike in Already Active Storm Cycle" available at http://www.pbs.org/newshour/updates/hurricanes_09-23-05.html, students can read statistics related to the frequency and power of hurricanes over the past 30 years.

6. True or False: Hurricane cycles typically follow a pattern of 10-15 years of extreme activity followed by 25-40 years of quiet activity.

   - Using the article "Hurricanes Mark Unusual Spike in Already Active Storm Cycle" available at http://www.pbs.org/newshour/updates/hurricanes_09-23-05.html, students can learn about typical cycles of hurricane activity.

7. True or False: Tornado season typically occurs in the fall.

   - Available at NOAA website http://www.ncdc.noaa.gov/oa/climate/research/hazards/index.html under "Severe Storms", students will learn that tornadoes typically occur from April to June, but can result at other times of the year when atmospheric conditions mimic those found in the Spring.

8. True or False: Eight out of 10 of the hottest years on record have occurred in the last century.

   - In an article entitled "Global Warming—Behind the Headlines" available at http://www.scenta.co.uk/scenta/features.cfm?cit_id=2678&lan_id=1&FAArea1=customWidgets.content_view_1, students can learn about the record setting heat of the past decade and its effects on the Earth.

9. True or False: Weather can be affected by changes in the Earth's surface temperature.

   - Using the information from "Strange Days on Planet Earth: 6 Reasons You Should Care" available at http://www.pbs.org/strangedays/episodes/onedegreefactor/care/index.html, students can learn about the correlation between temperature change and weather events.

10. True or False: The average temperature of the atmosphere has risen one degree in the past century.

Using the graphic organizer available at http://www.fsl.noaa.gov/visitors/education/climgraph/CG_Figure_27.gif.html along with the predictions made by NOAA about future temperature increases available at http://www.fsl.noaa.gov/visitors/education/climgraph/CG_Figure_44.gif.html, students can examine how this rise in temperature and the increase in greenhouse gasses has impacted the weather and climate of the Earth.