Case Details

Case Title:

The big chill

Author(s):

Dericka DeLoney, Columbia Middle School
Jason Haensly, Emory University
Bethany Turner, Emory University

Date Published:

11/6/2008

Grade Level(s):

Middle School

Subject(s):

Earth Science

Summary:

A young British boy thinks his mother might be going crazy. She insists on buying lots of winter clothes when it's the middle of the summer, and she thinks it's because global warming will make Europe much colder! Could she be right, or is she completely batty?

Suggested Citation:

DeLoney, D. Y., Haensly, J. W., & Turner, B. L. (2008). *The big chill*. Retrieved June 03, 2012 from Emory University, CASES Online Web site: http://www.cse.emory.edu/cases/casedisplay.cfm?case_id=2543

Notes:

This case uses the following NY Times article as a springboard and central resource: Revkin, Andrew C. Scientists Say Slower Atlantic Currents Could Mean a Colder Europe. The New York Times, December 1, 2005.

Learning Objectives:

1. List the names of the major oceanic currents
2. Explain how ocean currents are part of a global oceanic system
3. Describe the interrelatedness of oceanic and atmospheric processes.
4. Differentiate between deep and shallow currents, & the influence of temperature on both.
5. Discuss the current popular "debate" surrounding global warming and efforts such as the Kyoto Protocol.
6. Label and indicate the directions of major oceanic currents on a map.
7. Explain how the conveyor belt of oceanic currents moves water around the globe.
8. Distinguish between deep and shallow currents and their movements.
9. Describe the impact of global warming on oceanic currents & the "conveyor belt".
10. Describe both (i.e. household) and international (i.e. multinational) efforts to

combat global warming.

National/State Standards:

SCSh1. Students will evaluate the importance of curiosity, honesty, openness, and skepticism in science. (NSES Content Standard A)
S6CS5. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters. (NSES Content Standard A)
a. Observe and explain how parts are related to other parts in systems such as weather systems, solar systems, and ocean systems including how the output from one part of a system (in the form of material, energy, or information) can become the input to other parts. (For example: El Nino s effect on weather)
S8CS9. Students will understand the features of the process of scientific inquiry. (NSES
Content Standard A)
S6E3. Students will recognize the significant role of water in earth processes. (NSES Content Standard D)
c. Describe the composition, location, and subsurface topography of the world s oceans.
d. Explain the causes of waves, currents, and tides.
S6E4. Students will understand how the distribution of land and oceans affects climate and
weather. (NSES Content Standard D)