Unit 5 Lesson Plan developed for Grade(s) 6-8

Title: What Will You Do?

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Applies to Lesson(s) 16 *from* http://cimss.ssec.wisc.edu/climatechange/

Objective:
Students will recognize their role in climate change and produce a plan to change their actions.

Total Time Expected: 3 days

Overview:
Students will recognize their role in climate change and produce a plan to make changes in their day-to-day activities and understand that what each person does, will make a difference.

Sequence:
- Discussion about our role in climate change and what is being done around the world and in the USA.
- Present the EPA Household Emissions Calculator
- Send worksheets home with students to be completed with parents
- Enter the data from home worksheets in class. Discuss the second part of the calculator about what each person can do. Finish the EPA Calculator and print the results page.
- Show the documentary video, "National Geographic: Human Footprint".
- Read and discuss, The Down-to-Earth Guide to Global Warming, Part 4, pages 70-99
- On strips of recycled construction paper, have each student write one thing they plan to do to help reduce greenhouse gases and post these in the classroom.

Supplies or references required:

- Questions from "EPA Household Emission Calculator" worksheet
  (file: "U5_L16 EPA worksheet jro.pdf")

- EPA Household Emissions Calculator
  http://www.epa.gov/climatechange/emissions/ind_calculator.html

- Video: "National Geographic: Human Footprint". 90 minutes, April 2008. Video overview: "In a playful, surprising and thought-provoking portrait of our time on earth, National Geographic demonstrates, in a series of

remarkable visuals, what makes up an average human life today and how everything we do has impact on the world around us. In this unique journey through life, it shows all the people you will ever know, how much waste you will produce, the amount of fuel you'll consume and how much you've got to pack in during your 2,475,526,000 seconds on earth." Available at http://store.nationalgeographic.com/ngs/category/dvds

- David, Laurie and Gordon, Cambria, The Down-to-Earth Guide to Global Warming, Orchard Books, NY, NY, 2007, pages 70-99

- Recycled Construction paper

- Markers

National Science Standards addressed:

F. Science in Personal and Social Perspectives - A personal and social perceive of science helps a student to understand and act on personal and social issues. This perspective builds a foundation for future decision making.

M.F.2 Populations, resources, and environments

a. When an area becomes overpopulated, the environment will become degraded due to the increased use of resources.

b. Causes of environmental degradation and resource depletion vary from region to region and from country to country.

M.F.3 Natural hazards

b. Human activities also can induce hazards through resource acquisition, urban growth, land-use decisions, and waste disposal. Such activities can accelerate many natural changes.

c. Natural hazards can present personal and societal challenges because misidentifying the change or incorrectly estimating the rate and scale of change may result in either too little attention and significant human costs or too much cost for unneeded preventive measures.

Related URLs or recommended reading:

Gore, Al, (Text adapted by Jane O'Connor), an inconvenient truth, Viking Children's Books, NY, 2007

Gore, Al, (Text adapted by Richie Chevat), Our Choice, Viking Children's Books, NY, 2009

To purchase "Human Footprint" video
http://store.nationalgeographic.com/ngs/category/dvds

Questions from "EPA Household Emissions Calculator"

1. How many people live in your home?

2. What is your zip code?
   The calculator uses your zip code to more accurately estimate your electricity-related emissions. EPA does not record this information.

3. What is your household's primary heating source?
   - ❑ Natural Gas
   - ❑ Oil
   - ❑ Electric Heat
   - ❑ Propane
   - ❑ Wood
   - ❑ I do not heat my house

4. How many vehicles does your household have? 1 2 3 4 5 None

   for Vehicle 1

   On average, how many miles do you put on vehicle 1?

   _____Per Week or _____Per Year

   for Vehicle 2

   On average, how many miles do you put on vehicle 1?

   _____Per Week or _____Per Year

   for Vehicle 3

   On average, how many miles do you put on vehicle 1?

   _____Per Week or _____Per Year

   (240 miles/week is about average in the United States per vehicle.)

5. What is the average gas mileage for

   vehicle 1 (miles per gallon)? _____

   vehicle 2 (miles per gallon)? _____

   vehicle 3 (miles per gallon)? _____

   If you don't know your car's fuel economy, you can look it up at fueleconomy.gov. The national average is 20.4 miles per gallon.

6. How much natural gas does your household use per month?

   $_____.

   $35 is about average in the United States for a household of one person.

7. How much electricity does your household use per month?

   $_____.

   $35 is about average in the United States for a household of one person.

8. Does your household currently purchase green power?
   - Yes
   - No

If so, what portion of your household's total purchased electricity use is green power?

_____%

9. How much fuel oil does your household use per month?

   $_____.

   $45 is about average in the United States for a household of one person.

10. How much propane does your household use per month?

    $_____.

11. $40 is about average in the United States for a household of one person.

12. Which of the following products do you currently recycle in your household?

- Do you recycle aluminum and steel cans? Yes No
- Do you recycle plastic? Yes No
- Do you recycle glass? Yes No
- Do you recycle newspaper? Yes No
- Do you recycle magazines? Yes No