



Global Warming Wheel Card Curriculum Packet

A lesson plan for teaching about climate change and how
to calculate greenhouse gas emissions • *For students grades 6-8*



Global Warming —

What's Your Score?

In the United States, a typical household of two people generates approximately 60,000 pounds of carbon dioxide (CO₂) emissions every year from household activities and personal transportation.



EMISSIONS SOURCE

On average, how much does your household spend on natural gas or fuel oil each month? Pick closest amount.

- \$25
- \$50
- \$100

POUNDS OF CO₂ EMITTED PER YEAR

- 6,000 lbs./year
- 12,000 lbs./year
- 24,000 lbs./year

Home Heating



United States
Environmental Protection
Agency

Office of Air and Radiation
Office of Atmospheric

EPA-430-Y-0-007
November 2000



United States
Environmental Protection
Agency

Office of Atmospheric Programs
(6205J)

EPA 430-F-01-027
August 2001

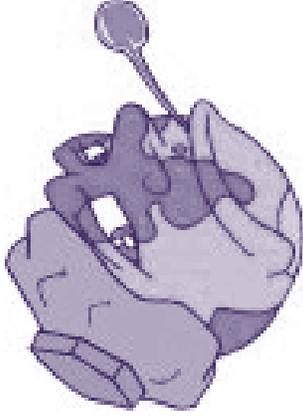
Welcome to the Global Warming Wheel Card Curriculum Packet

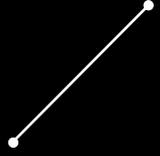
The U.S.
Environmental
Protection Agency has
designed this
curriculum packet for
teachers of grades
6 through 8 to use for
teaching students
about global warming,
its possible effects,
and the kinds of

What are the objectives of this curriculum packet?

The materials in this packet are designed to introduce students to:

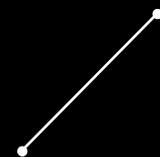
- The concept of the greenhouse effect
- Carbon dioxide as a greenhouse gas
- Common sources of carbon dioxide generated by humans and the role of carbon dioxide in increasing the greenhouse effect
 - A Global Warming Wheel Card that enables students to see their individual roles in generating carbon dioxide and therefore increasing the greenhouse effect
 - Ways in which they might reduce their individual, family, school, and community contributions to the greenhouse effect





**For more information on climate change,
see EPA's Global Warming Site at
www.epa.gov/globalwarming.**

**The site has up-to-date information on the climate system;
greenhouse gas emissions;
impacts of climate change; and actions that can be taken
at the national, state, local, business, and individual levels.**



For more information on calculating greenhouse gas emissions, see www.epa.gov/globalwarming/tools/calculators.html.

EPA's Climate Change Education Database provides educators with a complete, searchable menu of lesson plans, videos, books, toolkits, and other educational resources on climate change. To visit the site see www.XXX.

Basic-level and advanced Fact Sheets on global warming are located at www.epa.gov/globalwarming/publications/outreach/index.html.



The U.S. Environmental Protection Agency (EPA) developed this curriculum packet for teachers of grades 6 through 8 to use for educating students about climate change. The materials are designed to:

- **Introduce students to the concept of the greenhouse effect, its sources, and potential impacts**
- **Enable students to calculate a household's greenhouse gas emissions using a hand-held Global Warming Wheel Card**
- **Show students how to conduct a simple energy audit of their classrooms and identify ways in which they can help conserve energy**
- **Encourage students to think about ways to reduce their individual, family, school, and community contributions to the greenhouse effect**

Global Warming Wheel Card

- Cut out the two large circles and the two large rectangular pieces.
- Cut out the two little rectangular windows on each of the large rectangular pieces.
- Put glue on the backs of both circles and put them together to make the “wheel” of the wheel card, making sure that you align them so that the four labels that run along the outside of each circle (Waste Disposal, Home Heating, Electricity Use, and Transportation) line up with the corresponding labels on the other side. The Waste Disposal label on one side should line up with the Waste Disposal label on the other side, and so on.
- Lay the rectangular piece entitled “What Can You Do?” upside-down on the table with the larger of the two cutouts closer to you. If you lift up the edge of the rectangular piece and see the words “Global-Warming—What Can You Do?” right side up, you’ve done it correctly.
- Put the glued-together wheel on top of the rectangular piece, with the side that has all the questions (such as “On average, how much does your household spend on electricity each month?”) facing up.
- Lay the other rectangular piece entitled “What’s Your Score?” on top of the wheel, with the smaller of the two cutouts closer to you.
- Look for the “belly button” on the pasted-together wheel and the two large rectangular pieces. Push a paper fastener (“brad”) through the “belly button” to hold all the pieces together.
- Glue the large rectangular pieces in all four corners just enough to hold the rectangles together but allowing the wheel to turn freely.
- If you wish, highlight each line inside the windows in a different color to make it easier to read. If you have access to a color printer, this step will be unnecessary.
- If you are putting the wheel together to use in a demonstration, now you’re ready to calculate the greenhouse gas emissions “score” of members of your audience and what they can do to reduce it.



Side 1



Side 2

If you have access to a color printer and would like to download additional color Global Warming Wheel Cards, please visit the EPA Outdoor Recreation and Wildlife Toolkit homepage at www.XXX.



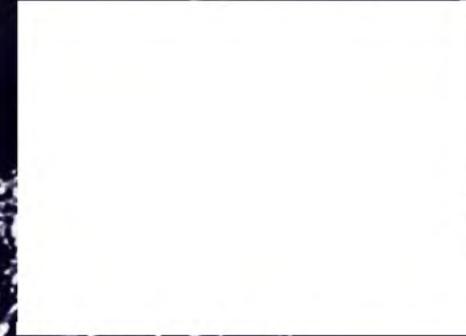
**Global
Warming
Wheel Card**

Side 1
[outside]

Global Warming — What's Your Score?

In the United States, a typical household of two people generates approximately 60,000 pounds of carbon dioxide (CO₂) emissions every year from household activities and personal transportation.

EMISSIONS SOURCE



POUNDS OF CO₂
EMITTED PER YEAR



United States
Environmental Protection
Agency

Office of Air and Radiation
Office of Atmospheric
Programs

EPA-430-K-0-007
November 2000

Global Warming Wheel Card

Side 1
[inside]



**Global
Warming
Wheel Card**

Side 2
[outside]

Global Warming — What Can You Do?

If you took all of the actions on this wheel card,
you could save 22,800 pounds of
carbon dioxide (CO₂) annually
and \$1,000 from your annual
home energy bill and
gasoline costs.

ACTIONS YOU CAN TAKE



Resources

U.S. Environmental Protection Agency website: www.epa.gov/globalwarming

ENERGY STAR® website: www.energystar.gov.

Summary of assumptions used in this wheel card: www.epa.gov/globalwarming/climatelink/
and look for the greenhouse gas calculator.

**POUNDS OF CO₂
YOU CAN SAVE**



Global Warming Wheel Card

Side 2
[inside]

