

Fighting for Control

Overview of Lesson Plan:

In this lesson, students examine and defend different sides of the argument about whether the Environmental Protection Agency should have the legal authority to regulate carbon dioxide emissions in the United States.

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Suggested Time Allowance: 1 hour

Objectives:

Students will:

1. Share opinions about who is responsible for protecting the environment, focusing specifically on the air.
2. Learn about the two sides in the argument for regulating Clean Air Act standards by reading and discussing the article "2 Sides Do Battle in Court on Whether E.P.A. Should Regulate Carbon Dioxide."
4. Further investigate the E.P.A., the Clean Air Act, global warming, and the views of the plaintiffs and the defendants in this case; share their findings with their classmates.
4. Participate in a fishbowl discussion exploring the issues of government responsibility in regulating carbon dioxide emissions.
5. Draw conclusions about the issue based on the information gathered during class; write a letter to the E.P.A. advocating or opposing their role in regulating carbon dioxide emissions.

Resources / Materials:

- pens/pencils
- classroom board
- four large pieces of paper, each with one of the following statements written in large letters: "Strongly Agree," "Agree Somewhat," "Disagree Somewhat," "Strongly Disagree"
- copies of the article "2 Sides Do Battle in Court on Whether E.P.A. Should Regulate Carbon Dioxide," found online at http://www.nytimes.com/learning/teachers/featured_articles/20050411monday.html (one per student)
- resources with information about the Environmental Protection Agency, the Clean Air Act, and global warming (science textbooks, encyclopedias, library resources, computers with Internet access)

Activities / Procedures:

1. WARM-UP/DO-NOW: Before class, post the four statement posters ("Strongly Agree," "Agree Somewhat," "Disagree Somewhat," and "Strongly Disagree") in the corners of the classroom. Because students will be moving around to stand beneath the statements with which they most agree for different questions regarding the government's involvement in air quality, be sure that students have clear paths in the room to reach the corners. For each of the statements below, read the statement aloud and allow students to move to the corners of the room that best express their views on the statement. As students take their places, write the statement on the board. Then, ask at least one student in each group to share his or her opinion.
 - The United States government should enforce environmental regulations that require companies, such as automobile manufacturers, to make products that reduce or do not worsen air pollution.
 - The United States government should maintain standards that provide companies with guidelines for making products that do not worsen air pollution, but should not interfere with the way they do business.
 - The United States government should not concern itself at all with environmental issues; individuals should just make their own decisions about how, if at all, they want to help to keep the environment clean.
2. As a class, read and discuss the article "2 Sides Do Battle in Court on Whether E.P.A. Should Regulate Carbon Dioxide" (http://www.nytimes.com/learning/teachers/featured_articles/20050411monday.html), focusing on the following questions:
 - a. What argument described in the article is being heard before a federal appeals court?

- b. Who are the plaintiffs, and who are the defendants? What case does each side make?
- c. What document is under question?
- d. What “major fault line in current environmental battles” does the case reflect?
- e. What is the Bush administration’s view of this issue?
- f. What specific passage in the Clean Air Act are both sides using to make their cases?
- g. How are they using the same information to draw two different conclusions?
- h. Why does the E.P.A. believe that carbon dioxide emissions should be regulated by the Clean Air Act?
- i. What does Section 202 not mention, and what did Jeffrey Clark argue with regards to that omission?
- j. To what did Mr. Clark compare this case, and what was James R. Milkey’s response to this comparison?

- k. When did the regulation of carbon dioxide emissions become a major national environmental issue?
- l. What is a major cause of the nation’s carbon dioxide emissions?

m. How have automakers reacted to efforts to force them to be more environmentally friendly?

3. Explain to the class that they will be further exploring the basic information and perspectives on the issues discussed in the article in order to thoughtfully participate in a “fishbowl” discussion. Divide students into four groups, and provide each group with a topic and the related guiding questions to research using all available classroom resources (including the article read in class). All students should take notes on their group’s findings and responses for each question.

THE BASICS: THE ENVIRONMENTAL PROTECTION AGENCY AND THE CLEAN AIR ACT

- What is the mission of the Environmental Protection Agency?
- What does the E.P.A. regulate?
- When was the Clean Air Act enacted, and why?
- What are the basic tenets and regulations set forth by the Clean Air Act?
- What does Section 202 say?
- What timelines are provided in the act?

GLOBAL WARMING: CAUSES AND CONSEQUENCES

- What is global warming? (Explain the process as clearly and easily as possible.)
- What are some of the causes of global warming?
- What types of technologies and industries emit carbon dioxide?
- What have the United States government and industries done to successfully regulate greenhouse gas emissions such as carbon dioxide?
- What have other countries done to regulate greenhouse gas emissions?

THE PLAINTIFFS: ENVIRONMENTAL GROUPS

- What are the plaintiffs seeking in this case?
- What are their views about this issue? Why do environmental groups want the E.P.A. to regulate carbon dioxide emissions?
- What does Section 202 of the Clean Air Act say, and how are the plaintiffs using it to support their views?

THE DEFENDANTS: THE F.D.A., THE U.S. GOVERNMENT AND INDUSTRY GROUPS

- What are the defendants defending in this case?
- What is the view of the Bush administration about this issue?
- What are the views of industry groups (in particular, those representing car makers, refiners and chemical companies) about regulations on carbon dioxide emissions?
- What does Section 202 of the Clean Air Act say, and how are the defendants using it to support their views?

Allow groups 15-20 minutes for their research. Then, regroup students to form new groups comprised of one student from each research group. Students should share their group’s findings and responses to each question.

4. With a clearer understanding of this case, students are ready to participate in the fishbowl discussion. First, ask students to number off from one to five, and keep a list on the board of all “1’s,” “2’s,” “3’s,” “4’s,” and “5’s.” Ask all “1’s” to sit facing one another in the middle of a circle created by the rest of the students. In a fishbowl discussion, the students in the center are the only ones allowed to speak. If a student from the outer circle wants to add to the discussion, he or she moves to the middle of the circle, taps a participant to indicate that he or she should resume a place in the outer circle, and takes that student’s place as the new person in the discussion. After discussing the first question, switch the students in the center to all “2’s,” and allow the same fishbowl procedure to occur. Be sure to switch topics enough times

so that all students have the opportunity to be in the center of the discussion at least once.

Questions to pose to students include:

- What is the purpose of the Clean Air Act?
- What should be the role of the E.P.A. in protecting air quality?
- Who in the United States is responsible for keeping the air clean?
- Should carbon dioxide be considered a pollutant? Why or why not?
- Is there evidence to show that carbon dioxide endangers public health?
- Is there evidence of a link between carbon dioxide emissions and global warming?
- What effects (positive and negative) might regulation have on carmakers, refiners and chemical companies?

5. WRAP-UP/HOMEWORK: Reflecting on what they learned from the article, their research and the fishbowl discussion, each student writes a letter to the E.P.A. stating how he or she thinks the agency should deal with carbon dioxide emissions regulation. Students may mail their letters, if they wish.

Further Questions for Discussion:

- What effect might government regulation have on environmental issues in the United States and around the world?
- Does the United States have any responsibility to the international community in terms of regulating carbon dioxide emissions, in particular, and the maintaining of environmental standards, in general?
- What are carmakers, refiners and chemical companies doing to effect the debate over regulation? What impact might regulation have on their industries?
- How can individuals get involved in this debate?
- Can individuals play an important role in minimizing carbon dioxide emissions? If so, how?

Evaluation / Assessment:

Students will be evaluated based on participation in the initial exercise, participation in class discussions and group research, and thorough analysis and reflection of the issues as presented in their letters to the E.P.A.

Vocabulary:

carbon dioxide, emissions, global warming, pollution, pollutant, Kyoto Treaty, Environmental Protection Agency, Clean Air Act, lobbyist, climate, non-governmental organization, refiner, regulation, legislation, swing vote, public health

Extension Activities:

1. Write an editorial responding to the article, reacting to the following prompt: Knowing what you now know about the Clean Air Act, the E.P.A. and carbon dioxide emissions, how involved do you think the government should be in regulating carbon dioxide emissions for car companies, refineries and chemical companies? Support your view with facts and examples.
2. The article briefly comments on the differences between how the Clinton and Bush administrations have viewed public health-related regulation and industry. Find information online and in The New York Times that demonstrates their differences and similarities. Then write a paper that analyzes the effects of their different views on a particular industry (car manufacturers or tobacco growers, for example) and on the environment.
3. Research the history of United States environmental policies, and write a reaction paper examining the effects of current policies on the global environment.
4. Create a "How It Works" poster showing the effects of carbon dioxide emissions on the global environment.
5. The Centers for Disease Control and Prevention (C.D.C.) says that excessive heat claims more lives in the United States each year than hurricanes, lightning, tornadoes, floods, and earthquakes combined (<http://www.epa.gov/heatisland/about/healthenv.html>). How does this relate to the article read in class? What cities in the United States are most vulnerable, and why? What are the strategies to address excessive heat issues? Prepare a report on your findings.
6. What pollutants can be found in common household products? Create graphics that compare the pollutants found in the home to industrial products.

7. Color-code or otherwise indicate on a world map the current state of carbon dioxide emissions around the globe. Good sources for data are the Worldwide CO2 Emissions Chart (<http://www.guardian.co.uk/globalwarming/graphic/0,7367,397009,00.html>) and Online Trends : A Compendium of Data on Global Change (http://cdiac.esd.ornl.gov/trends/emis/em_cont.htm).

Interdisciplinary Connections:

- Economics- Is there data proving the impact of the existing environmental regulations on industry? Create an economic impact study of one of the industries identified in the article (car manufacturers, refineries and chemical companies). In your study, include how your selected industry has responded to environmental regulations, the economic effects on both the industry and the consumer, and the environmental results.
- Journalism- Research and write an article about environmental issues in your community. Submit the article to the school newspaper or a local publication. You might also select articles to send to regional or national newspapers and/or related lobbying groups.
- Teaching with The Times- Scan The Times over a specified period of time (one week or longer) for articles about environmental policy in the United States and around the world. Clip each article you find, and write a summary analyzing the main trends. How does United States environmental policy respond to, differ from or contradict the findings of environmental groups? What are lobbyists, environmental groups and individuals doing to impact these policies? Post the articles and summaries on a bulletin board or in a binder in the classroom. To order The New York Times for your classroom, [click here](#).

Other Information on the Web:

Plain Text Guide to the Clean Air Act (http://www.epa.gov/oar/oaqps/peg_caa/pegcaain.html) presents the statute in clear, simple language, and provides definitions of the various pollutants regulated by the E.P.A.

Worldwide CO2 Emissions Chart

(<http://www.guardian.co.uk/globalwarming/graphic/0,7367,397009,00.html>) compares data on carbon dioxide emissions.

Online Trends : A Compendium of Data on Global Change

(http://cdiac.esd.ornl.gov/trends/emis/em_cont.htm) provides data on carbon dioxide emissions around the world.

The EPA Global Warming site (<http://www.epa.gov/globalwarming>) provides news, a United States greenhouse gas inventory, reports and slides, and links to related Web sites.

Academic Content Standards:

Grades 6-8

- Science Standard 7- Understands how species depend on one another and on the environment for survival. Benchmark: Knows ways in which humans can modify ecosystems and cause irreversible effects
- Geography Standard 8- Understands the characteristics of ecosystems on Earth's surface. Benchmarks: Knows changes that have occurred over time in ecosystems in the local region; Knows the potential impact of human activities within a given ecosystem on the carbon, nitrogen, and oxygen cycles
- Geography Standard 14- Understands how human actions modify the physical environment. Benchmarks: Understands the environmental consequences of people changing the physical environment; Understands the ways in which human-induced changes in the physical environment in one place can cause changes in other places; Understands the ways in which technology influences the human capacity to modify the physical environment; Understands the environmental consequences of both the unintended and intended outcomes of major technological changes in human history
- Geography Standard 18- Understands global development and environmental issues. Benchmarks: Understands how the interaction between physical and human systems affects current conditions on Earth; Understands the possible impact that present conditions and patterns of consumption, production and population growth might have on the future spatial organization of Earth; Knows how the quality of environments in large cities can be improved; Understands why different points of view exist regarding

contemporary geographic issues

- Language Arts Standard 4- Gathers and uses information for research purposes. Benchmarks: Uses a variety of resource materials to gather information for research topics; Determines the appropriateness of an information source for a research topic; Organizes information and ideas from multiple sources in systematic ways

- Language Arts Standard 7- Demonstrates competence in the general skills and strategies for reading a variety of informational texts. Benchmarks: Applies reading skills and strategies to a variety of informational texts; Summarizes and paraphrases complex, explicit hierarchic structures in informational texts; Uses new information to adjust and extend personal knowledge base; Seeks peer help to understand information; Draws conclusions and makes inferences based on explicit and implicit information in texts; Differentiates between fact and opinion in informational texts

Grades 9-12

- Science Standard 7- Understands how species depend on one another and on the environment for survival. Benchmark: Knows ways in which humans can modify ecosystems and cause irreversible effects

- Geography Standard 8- Understands the characteristics of ecosystems on Earth's surface. Benchmarks: Understands how relationships between soil, climate, and plant and animal life affect the distribution of ecosystems; Knows the effects of both physical and human changes in ecosystems

- Geography Standard 14- Understands how human actions modify the physical environment. Benchmark: Understands the global impacts of human changes in the physical environment

- Geography Standard 18- Understands global development and environmental issues. Benchmarks: Understands why policies should be designed to guide the use and management of Earth's resources and to reflect multiple points of view; Understands contemporary issues in terms of Earth's physical and human systems

- Language Arts Standard 4- Gathers and uses information for research purposes. Benchmarks: Uses a variety of news sources to gather information for research topics; Synthesizes a variety of types of visual information, including pictures and symbols, for research topics

- Language Arts Standard 7- Demonstrates competence in the general skills and strategies for reading a variety of informational texts. Benchmarks: Applies reading skills and strategies to a variety of informational texts; Scans a passage to determine whether it contains relevant information; Summarizes and paraphrases complex, implicit hierarchic structures in informational texts, including the relationships among the concepts and details in those structures; Uses new information from texts to clarify or refine understanding of academic concepts; Uses discussions with peers as a way of understanding information