

# #9192

## GEOGRAPHY PRINCIPLES: GLOBAL PROBLEMS

CLEARVUE/eav  
2000

Grade Levels: 9-12

22 minutes

1 Instructional Graphic Enclosed



### DESCRIPTION

Describes the accelerating impact human activity has on the atmosphere, water, and land use. Focuses on the continuing influences of industrialization, noting particularly the greenhouse effect, global warming, and potential problems with earth's fresh water supply.

### ACADEMIC STANDARDS

#### Subject Area: Geography

- Standard: Understands how human actions modify the physical environment
  - Benchmark: Understands the environmental consequences of people changing the physical environment (e.g., the effects of ozone depletion, climate change, deforestation, land degradation, soil salinization and acidification, ocean pollution, groundwater-quality decline, using natural wetlands for recreational and housing development)

#### Subject Area: United States History

- Standard: Understands how the rise of corporations, heavy industry, and mechanized farming transformed American society
  - Benchmark: Understands various influences on the scenic and urban environment (e.g., how rapid industrialization, extractive mining techniques, and the "gridiron pattern" of urban growth influenced the city and countryside; environmentalism and the conservation movement in the late 19<sup>th</sup> century)

#### Subject Area: Technology

- Standard: Understands the relationships among science, technology, society, and the individual
  - Benchmark: Knows that technology can benefit the environment by providing scientific information, providing new solutions to older problems, and reducing the negative consequences of existing technology (e.g., monitoring a habitat or measuring greenhouse gases, improving renewable energy sources, and creating scrubbers to improve coal-burning facilities)

## INSTRUCTIONAL GOALS

1. To understand the environmental consequences of people changing the physical environment, including the effects of ozone depletion, climate change, deforestation, and acidification.
2. To understand the ways in which human-induced changes in the physical environment in one place can cause changes in other places, such as the effect of a factory's airborne emissions on precipitation.
3. To understand the ways in which technology influences the human capacity to modify the physical environment, including the usage of electricity, air conditioning, and heating.
4. To understand the environmental consequences of both the unintended and intended outcomes of major technological changes in human history, such as the effects of automobiles using fossil fuels.
5. To name four major global problems humans face today.
6. To define the features of the water cycle.

## VOCABULARY

- |                           |                             |
|---------------------------|-----------------------------|
| 1. acid rain              | 16. mean global temperature |
| 2. atmosphere             | 17. nitrous oxide           |
| 3. chlorofluorocarbon     | 18. nonrenewable resources  |
| 4. clear-cutting          | 19. ozone                   |
| 5. climate                | 20. pH                      |
| 6. combustion             | 21. photosynthesis          |
| 7. ecosystems             | 22. pollution               |
| 8. global citizens        | 23. precipitation           |
| 9. global warming         | 24. rainforest              |
| 10. greenhouse effect     | 25. renewable resources     |
| 11. habitable communities | 26. reservoirs              |
| 12. hydrocarbons          | 27. sulfur dioxide          |
| 13. industrialization     | 28. topography              |
| 14. infrared energy       | 29. urbanization            |
| 15. landscape             |                             |

## BEFORE SHOWING

1. Ask students to discuss the geography of their region. What is the climate? The landscape? What natural resources, such as water sources, are available to their community?
2. Ask students if they can name some of the features of their everyday life made possible by technology. How many features can students come up with? What are some problems associated with modern inventions? Can students name any environmental issues? Can they identify some places affected by these issues? Are any students involved in efforts, either locally or nationally, to correct environmental issues?

## AFTER SHOWING

### Discussion Items and Questions

1. What were the three things that determined the size of human populations before industrialization? What were some natural resources that affected early human populations?
2. What is *industrialization*? When did it take place? Why was industrialization important to humans?
3. How did industrialization allow humans to impact the environment?
4. How has industrialization changed the earth's atmosphere? How has the air been chemically altered? What is *combustion*? What is another factor contributing to the increased amount of CO<sub>2</sub> in the atmosphere? Why are the rainforests important to the air?
5. How does CO<sub>2</sub> contribute to our atmosphere? What do scientists call the greenhouse effect as it relates to our planet? How will global warming affect our environment? What effect could these weather changes have on humans?
6. What is the *ozone layer*? Why is there a hole in it? Why is the ozone hole bad for humans? What steps are being taken to fix the ozone hole?
7. What is the *water cycle*? How has human activity interrupted the water cycle? What result does this have on the environment? What is the problem with relying on ground water supplies?
8. What is *acid rain*? What are the effects of acid rain? Where is acid rain the worst?
9. What are *renewable resources*? What are *nonrenewable resources*? What is *urbanization*? Why is urbanization a potential problem?
10. What are some of the global problems that are issues in your area? What are some possible solutions?

### Applications and Activities

Complete the "Environmental Map" exercise. (See INSTRUCTIONAL GRAPHICS.)

### SUMMARY

This video will give your students an in-depth look at what problems face humans worldwide, and what we can do about them.

The video discusses four major global problems: global warming, the ozone hole, the interrupted water cycle, and acid rain. It examines the human actions leading to the development of these problems and explains what steps need to be taken to correct them. By exploring the complex nature of human society and how it impacts and interacts with its surroundings, students will develop a better grasp of how they fit in the world around them. A variety of footage from different locations illustrates key issues facing the environment and how those problems affect humans. Students will also learn about the efforts to stem the tide of global pollution.

As a narrator takes viewers on a tour of the world's regions and cultures, from the rainforest to the city, this program gives students new insight into their environment and helps them to understand the effects humans' actions have on their world.



## RELATED RESOURCES



### Captioned Media Program

- Geography Basics: Environmental Impact #9188
- Greenhouse Effect #2482
- Making a Difference: Restoring the Earth Around Us #3054
- Nature's Delicate Balance #8833



### World Wide Web

The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and "kid safe" sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

- **U.S. ENVIRONMENTAL PROTECTION AGENCY**

<http://www.epa.gov/>

Provides information on numerous topics to search on this site from acid rain to zinc. Has a kids' section.

- **ATMOSPHERIC RADIATION MEASUREMENT PROGRAM**

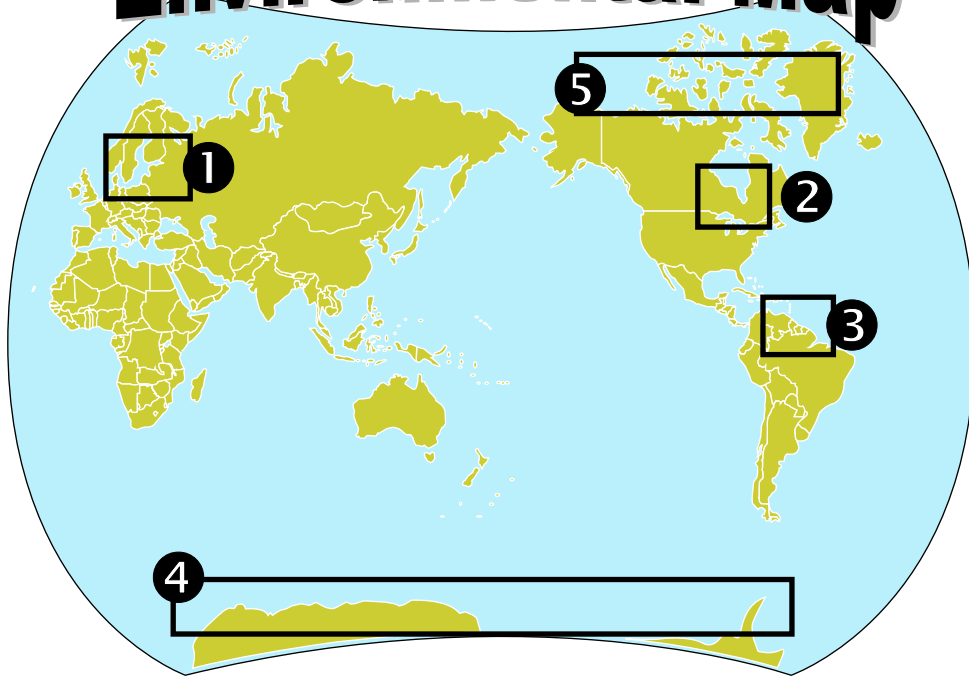
<http://www.arm.gov/>

Click on the "Education" heading to be led to various topics, including "Global Warming." Provides different grade levels on this and numerous other topics relating to global change.

## INSTRUCTIONAL GRAPHICS

- ENVIRONMENTAL MAP

# Environmental Map



Directions: For each boxed area on the map, answer the questions below.

	What environmental change is occurring in this area?	Why is this change occurring?
#1		
#2		
#3		
#4		
#5	EXTRA CREDIT	EXTRA CREDIT