

IN THE AIR

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www.intheair.org

Connecting Activity #5

**"Belief Statement
Five: Airborne Toxics
Are a Critical
Problem. However,
the Effects May Be
Remediable"**

9-12 EDUCATION MODULE



 MISSOURI
BOTANICAL
GARDEN

Correlation with Education Standards Summary

Connecting Activity #5

“Belief Statement Five: Airborne Toxics Are a Critical Problem. However, the Effects May Be Remediable”

For a narrative description of these standards, please refer to the Teacher’s Guide.

National Standards

SOURCE: www.education-world.com/standards

NA-VA.9-12 .1
NPH-H.9-12 .7
NL-ENG.K-12
.3 .4 .7 .8

NS.9-12 .6
NSS-C.9-12 .5
NCSS Strands VIII, IX, X
NT.K-12 .2 .5

Missouri Show-Me Standards

SOURCE: www.dese.mo.gov/standards

Performance Standards:
GOAL 1: 1, 2, 4, 5, 7, 8, 10
GOAL 2: 1, 2, 3, 5, 7
GOAL 3: 1, 6, 7
GOAL 4: 1, 3, 5, 6

Knowledge Standards:
CA 1, 3, 4, 5, 6
FA 1
HPE 5, 6
SC 4, 8
SS 2, 6, 7

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IN THE AIR

Connecting Activity #5

“BELIEF STATEMENT FIVE: AIRBORNE TOXICS ARE A CRITICAL PROBLEM. HOWEVER, THE EFFECTS MAY BE REMEDIABLE”

OVERVIEW

Students work together in small groups to learn about current environmental organizations (including state and local groups) that are working to alleviate the effects of airborne toxics. Group members present their information to the class objectively, neither advocating nor opposing the stand taken by the environmental organizations they studied. After the presentations, students draw conclusions about the validity of the belief statement based on the evidence presented.

Recommended Grade Level:
9-12
Preparation Time:
Approximately 30 minutes will be needed to review the activity and to make copies.
Presentation Time:
Three 50-minute class periods (one for initial presentation, one for student research and preparation, and one for student presentations and discussion).

GOALS

- To promote awareness of and information about environmental organizations that work toward reducing air toxics problems
- To encourage students to take an active role in air quality programs
- To promote objectivity in fact-finding and decision making
- To enhance research capabilities
- To encourage cooperation through teamwork

OBJECTIVES

When this Activity is completed, students will be able to do the following:

- Name and briefly describe the mission and methods of five environmental organizations that address air toxics problems.
- Document information sources according to an agreed upon style.
- Choose one organization they could actively support and tell why.
- Decide whether their research has supported or contradicted the Belief Statement, and be able to defend their decisions.

MATERIALS

- One copy per student of the student worksheet, Belief Statement: Airborne Toxics Are A Critical Problem. However, the Effects May Be Remediable (two pages).
- Make two copies of the environmental groups list (single page). Take one copy and cut the names apart, fold, and place in a container. Keep the other copy for reference.

- One piece of poster board or a trifold display board of the same size for each group
- Craft materials—poster paint and brushes, felt markers, etc.
- Internet and library access

VOCABULARY

Remediable: [re ME dee a bul]

Capable of being remedied or corrected.

PROCEDURES

1. Ask students to remember how they felt when something frightened them badly. How did they react? What went through their minds? How long did it last? Allow time for class discussion.
2. Point out that most people soon become their old selves again when the cause of fear fades or disappears. However, for some people, fear (whether real or imagined) becomes chronic and has the power to alter behavior in strange ways.
3. Give an example—such as Howard Hughes, famous American aviator, aircraft designer, businessman, and film producer, who gradually withdrew from public life into a bizarre world of his own making. One of the reasons for Hughes' behavior was said to be his extreme fear of contracting germs. As a result, he rarely left his Las Vegas penthouse apartment where a staff of assistants shielded him from publicity and looked after his every need.
4. Move into a discussion of collective fear that affects scores of people at the same time. Ask students for examples and/or provide examples such as building bomb shelters during the Cuban Missile Crisis of the 1960s, Pre-Y2K preparations for computer disaster, and panic purchasing of medicine and gas masks during the anthrax germ scare. For more information about these examples see For Further Reading and Research.
5. Remark that it is easy to look back and ridicule such behavior when nothing horrific happens. But imagine the fears of people in places where terrible things have happened because of airborne toxics. For example, Bhopal, India, in 1984, and Chernobyl, Russia, in 1986. For details on those disasters see For Further Reading And Research.
6. Conclude that knowledge is the best antidote for fear, so the purpose of this activity is to investigate whether airborne toxics problems can be remedied, what is being done about these problems, and who is doing it.

GROUP RESEARCH

1. Divide the class into five or six small groups. Have each group elect one of their members to coordinate the project.
2. Have each coordinator draw an environmental group name for his or her group to research.
3. Hand each student a copy of "Belief Statement: Airborne Toxics Are a Critical Problem. However, The Effects May Be Remediable." and go over the instructions with the class.
4. Set time limits for each phase of the work: research, preparation, and presentation.
5. Allow time for students to research and prepare displays.
6. Have students present displays and the research results.

WRAP UP

1. Have each student choose an organization that they feel they can actively support and give a reason why.
2. Discuss as a class whether the research supported or contradicted the belief statement citing information used in the student presentations.

CONCLUSION

While it is reasonable to be afraid of situations or circumstances that may cause bodily harm, a more rational approach is to become informed about one's fears and actively involved in reducing the causes. In the case of airborne toxics, many diverse environmental organizations all over the world are working to solve local, national, and global air pollution problems. Such organizations always welcome assistance from concerned citizens.

FOR FURTHER READING AND RESEARCH

Fear Behavior -

- Cuban Missile Crisis: <http://www.detnews.com/history/shelters/shelters.htm>
- Y2K Panic: <http://www.nytimes.com/library/tech/99/02/biztech/articles/09panic.html>
- Anthrax Panic:
http://archive.salon.com/tech/feature/2001/10/13/anthrax_psychology/print.html

Major Disasters -

- **Bhopal, India**
A leak from a pesticide plant in 1984, killed an estimated four to six thousand people within thirty days of the accident. Through time, twenty thousand more died from exposure to the fumes, and as many as 150,000 survivors of the disaster are still chronically ill. See <http://www.bhopal.org/> for the story of a medical/spiritual organization that assists victims of the Bhopal pesticide disaster. Many other web sites about this disaster are available on the Internet. Use keywords Bhopal, pesticide, and disaster.

Riddle, John. *Bhopal*: Chelsea House, 2002. Many technical books have been written about Bhopal, but this one is addressed to a young adult audience.

- **Chernobyl**
In 1986, an accident occurred at a nuclear plant near the small town of Chernobyl, Russia. The death toll can only be estimated but in April, 2000, the British Broadcasting Company reported the following: 30 people killed immediately, 15,000 relief workers killed, 50,000 relief workers injured or ill, and 5 million people exposed to radiation. The death toll continues to rise as victims die from radiation-related illnesses. In addition, thousands of acres of farmland were contaminated from the fallout, making it necessary to relocate entire communities. The following website provides links to various aspects of the Chernobyl disaster: <http://www.chernobyl.co.uk/>

Video: *Chernobyl Nuclear Disaster*. Nightline, ABC News. Produced by Mpi Home Videos, 1990.

MASTERS

- Student Worksheet
Belief Statement: Airborne Toxics Are a Critical Problem. However, the Effects May Be Remediable (Two Pages).
- Environmental Organizations Concerned with Airborne Toxics Issues.

Belief Statement:
Airborne Toxics Are a Critical Problem.
However, The Effects May Be Remediable.

Name _____

Name of Environmental Organization to be Researched _____

Name of Group Coordinator _____

**Whenever we're afraid, it's because we don't know enough.
 If we understood enough, we would never be afraid.**

**~Earl Nightingale, Journalist and Speaker~
 (1921-1989)**

Duties of Coordinator

1. Assign research questions below to group members:

- History and Mission

When was the organization established and for what purpose(s)? What is its mission statement? If there is a particular person identified as the founder, who is it and why did he or she start it? If no particular person is associated with it, how did it begin?

(Researcher's name _____)

- Organization

How is it structured? Does it have local chapters, boards of directors, etc.? Illustrate its structure by means of a flow chart.

(Researcher's name _____)

- Membership

Where may one contact the organization? How does one become a member? How many members does it have? How has its membership changed since it was founded? Use a graph or chart to illustrate membership changes.

(Researcher's name _____)

- Methods of Operation

How does it go about its business: lobbying, petitioning, demonstrating, taking legal action, all of the above? Give specific examples.

(Researcher's name _____)

- Funding

Where does it get its funding? Use graphs, pie charts, etc., to show how it distributes its funds for advertising, fund raising, administrative costs, and its mission.

(Researcher's name _____)

- Accomplishments

What does the organization claim to have accomplished toward reducing airborne toxics? Use charts or graphs to give specific examples.

(Researcher's name _____)

2. Contact the environmental organization and ask for brochures and other information about its work. Visit a local chapter of the organization if it has one.
3. Complete the coordinator section below.
4. Assist group members in preparing and making the final presentation.

Duties of Group Members

- Write your name in the blank by the question(s) assigned to you by your coordinator.
- Conduct fact-finding research on your topic by any means available. Be sure you are objective.
- Record your answers.
- Document your sources using the manuscript style recommended by your teacher.
- Work with group members and coordinator to prepare a trifold poster for your group's presentation.
- Take part in your group's presentation to class members or other audiences.

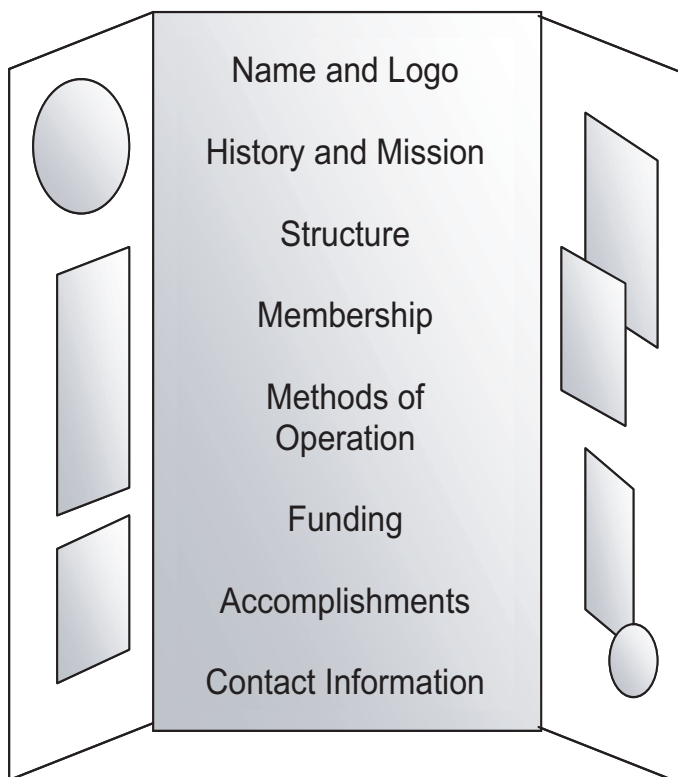
Research Information

Coordinator

- How did you contact the organization: phone, e-mail, other? _____
- What kind of response did you receive and how quickly? _____
- _____
- List three publications you received from this organization (or web sites you consulted) using a manuscript style recommended by your teacher.
- _____

Group Members

- Answer your assigned questions on a separate sheet of paper. Include graphs, charts, etc., as called for.
- List at least three of your information sources using a manuscript style recommended by your teacher.
- _____
- _____



PRESENTATION SUGGESTIONS

1. Buy or make a trifold display board.
2. Print the name of the organization at top center in bold letters. Add a copy of the organization's logo.
3. Briefly list the major findings for all research categories (as shown at left).
4. Add other information and pictures collected by the group coordinator.

ENVIRONMENTAL ORGANIZATIONS
CONCERNED WITH AIRBORNE TOXICS ISSUES

Thousands of environmental groups all over the world are working to preserve and protect the environment in one way or another. Those listed below were chosen to acquaint students with the wide range of approaches used in dealing with airborne toxics and other environmental concerns. For other organizations, see the following web site:

<http://www.nrdc.org/reference/enviroGroups.asp>

AMERICAN CHEMISTRY COUNCIL:

<http://www.americanchemistry.com/>

AMERICAN LUNG ASSOCIATION:

<http://www.lungusa.org/>

DEFENDERS OF WILDLIFE:

<http://www.defenders.org/index.html>

<http://www.defenders.org/wildlife/globalwarming/globalwarming.html>

CATO INSTITUTE:

<http://www.cato.org/>

DUCKS UNLIMITED:

<http://www.ducks.org/>

EARTH FIRST:

http://library.thinkquest.org/26026/People/dave_foreman.html

<http://www.eco-action.org/ef/>

<http://www.eco-action.org/dt/index.html>

U. S. ENVIRONMENTAL PROTECTION AGENCY:

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

<http://www.epa.gov/epahome/aboutepa.htm>

GREENPEACE:

<http://www.greenpeace.org/aboutus/>

<http://archive.greenpeace.org/home.shtml>

NATIONAL AUDUBON SOCIETY:

<http://www.audubon.org/>

NATIONAL PARK SERVICE RESOURCES WEB:

<http://www2.nature.nps.gov/air>

SIERRA CLUB:

<http://www.sierraclub.org/inside/>

WORLD WILDLIFE FUND:

<http://www.wwf.org/>

<http://www.worldwildlife.org/toxics/>

STATE OR LOCAL GROUP: To select a group that works in or near your own community, consult your telephone directory or see the following website for air quality information state by state: <http://unr.edu/homepage/daved/airqual.html>. Another possibility for a local group is an environmental club at your own or another high school. In the St. Louis area, see <http://stlcap.org> for information about the St. Louis Community Air Project (CAP).