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Author: Howe, Robert W. - Disinger, John F.
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Teaching Desirable Environmental Ethics and Action through School Activities. ERIC/SMEAC Environmental Education Digest No. 1.

One of the major goals of environmental education programs is developing students with positive environmental ethics and motivated to take desirable environmental actions.

Research studies suggest that attitudes and behaviors of individuals are frequently modeled after the attitudes and behavior of others. Since most youth spend six to seven hours a day in school buildings, a coordinated school environmental program that focuses on preventing and solving environmental problems at the school site can provide an excellent model of attitudes and behaviors for young people to emulate. Elements that should be included in the program include (1) a set of policies, (2) procedures for identification of problems, (3) action plans to prevent and alleviate problems, (4) plans for monitoring actions, and (5) evaluation policies, identification activities, action activities, and monitoring activities.

Developing and operating a school environmental plan can be an important part of a school environmental education curriculum. This digest identifies several environmental concerns that should be included in a school environmental program. Ways to begin a school environmental program are suggested.

DOES YOUR SCHOOL HAVE ENVIRONMENTAL

POLICIES AND A PROGRAM REGARDING

PURCHASING MATERIALS?An important aspect of any school environmental program is an environmental purchasing policy. A purchasing policy provides guidelines for materials to be used in the school and on the school grounds. An effective policy statement provides guidelines to reduce or eliminate the purchase of materials that are not safe or environmentally sound and also provides guidelines regarding amounts of materials to be purchased to reduce waste. The cafeteria, school and grounds maintenance, science programs, art programs, general school supplies, and remodeling projects are areas that should be the focus of initial policies.

Study and discussion regarding what materials should and should not be used in a school provide excellent environmental education experiences. These activities will provide both a good school environment and practice for students to model at home and in their consumer roles.

DOES YOUR SCHOOL HAVE ENVIRONMENTAL POLICIES AND A PROGRAM FOR WISE

USE OF MATERIALS IN AND AROUND THE SCHOOL?Students and staff should be involved in discussing and establishing guidelines for purchasing alternative materials and storage, use, and disposal of materials. Students should also be involved in monitoring activities to determine how effective the policies are and whether changes in policies are needed.

Some materials containing chemicals are hazardous and should not be used in schools or should be stored and used under carefully specified conditions. Science, art, and technology programs are curricular areas usually affected most by guidelines; materials used in these classes may be corrosive, flammable, or carcinogenic and can present hazards to the students and the environment.

Buildings and grounds maintenance materials may also present problems. Materials used for cleaning buildings, exterminating insects in buildings, and as pesticides on playgrounds and playing fields are among problems frequently identified in school environmental studies.

DOES YOUR SCHOOL HAVE ENVIRONMENTAL POLICIES AND A PROGRAM FOR

IDENTIFYING, MONITORING AND CORRECTING ENVIRONMENTAL PROBLEMS?A school environmental program should include identifying and monitoring real problems

in the school. Since many of these problems can also be problems in homes and the workplace, student involvement in the school program can develop knowledge, skills, and attitudes that are easily transferred to out-of-school settings.

A few of the more common problems found in schools are emphasized as possible priorities.

RADON

Schools in many states have been tested for radon, and elevated concentrations have been reported in schools in Virginia, Maryland, Pennsylvania, New Jersey, Florida, Washington, New York, Maine, Ohio, Iowa, Colorado, Tennessee, and Illinois (USEPA, 1989).
All schools should be sampled for the amount of radon that is present. Protocols have been established for radon screening and monitoring (USEPA, 1989). Students can be involved in screening activities to identify sites that might warrant confirmatory or diagnostic measurements. If elevated radiation levels are found, experienced radon professionals should be consulted for further analysis and procedures to reduce radon levels.

DRINKING WATER

Drinking water in school can present several types of problems.
The extent of lead contamination in some drinking water is considerable. Since children are particularly susceptible to the toxic effects of lead, schools should monitor drinking water periodically to identify possible problems. Lead may be from the original water, lead solder used in plumbing, corrosion of plumbing materials and some equipment such as water coolers (USEPA has developed a list of water coolers that were found to contain lead). Student activities can be used to detect if any lead is in the water. Professional assistance should be consulted if any levels are identified because many of the simpler tests may vary in accuracy.

Small schools in rural sites often obtain drinking water from wells. Well water may become contaminated and cause health problems. Schools using well water need to be certain they are complying with state and federal drinking water regulations.

ASBESTOS

From the 1940's to the 1970's materials containing asbestos were used in many schools. The USEPA has issued a number of regulations regarding health effects of asbestos, sources of asbestos in schools and asbestos removal. While professionals should assess potential asbestos problems in schools, a school environmental program involving students can investigate the asbestos problem including (1) sources of

asbestos in floor tile, ceiling tile, roofing materials, pipe insulation, and fireproofing; (2) effects of asbestos on health; (3) asbestos removal problems; and (4) controversy regarding the impact of the different types of asbestos on humans.
Recommendations for school guidelines and policies can be developed as a result of student investigations and deliberations.

SICK BUILDINGS

Newspapers and magazines frequently have articles on "sick buildings," buildings that have unhealthy environments due to substances in the air. Schools in some cases may become "sick buildings" due to problems associated with heating and cooling systems and materials used in constructing and furnishing buildings. A school environmental program should identify and monitor the most common problems associated with construction, equipment and furnishings used in the building.

PAINTS AND CHEMICALS USED IN CLASSES

Paints frequently contain metals that may be harmful to children. While few buildings will contain paint with lead, buildings may have paint containing mercury, chromium or cadmium. Paints should be checked to determine if there are potential problems.
Classes may use materials containing hazardous chemicals. Some chemicals hazardous to health have been used in art (chromates, lead, solvents), biology (formaldehyde), and chemistry (benzene, phenol, metals, acetone). Lists are available that identify potentially harmful chemicals in more detail (Wahl, 1989).

Some materials contain chemicals that can be dangerous because they are flammable, may be explosive, or may be corrosive. Materials used in classes and schools should be inventoried to determine what is currently stored and used. Policies should be established for storage and use; practices should be monitored.

DOES YOUR SCHOOL HAVE POLICIES FOR THE DISPOSAL OF WASTES?

A school environmental program should have waste disposal policies that consider conservation, waste reduction and pollution control.
A school can provide an excellent model for families by developing procedures to reduce wastes and to recycle or compost as much material as possible. Common materials used in schools that can be recycled include paper products, glass, plastic materials and aluminum and mixed metallic cans. Materials that can be composted include yard wastes and food wastes from cafeterias.

Policies should also be established for disposal of materials that can not be composted or recycled. Chemicals, paints, solvents, oil, batteries, and other items containing

hazardous materials should be removed by approved methods. If a community does not have a program for handling hazardous wastes, a good school activity is to work with community officials to establish a program.

NEXT STEPS?

If your school is searching for a project to implement following Earth Day 1990, developing a school environmental program is an excellent way to make a one-day event an all year and continuing event.
Suggestions are given in this digest for elements to include in the program and ways to involve students. References listed provide more direction and suggestions.

SELECTED INFORMATION SOURCES

- United States Environmental Protection Agency
- Public Information Center
- 401 "M" Street, SW
- Washington, DC 20460
- 202-475-7751

- National Technical Information Service
- U.S. Department of Commerce

5285 Port Royal Road

Springfield, VA 22161

703-487-4650

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Washington, DC 20402-9325

202-783-3238

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----- Prepared by Robert W. Howe, Director, and John F. Disinger, Associate Director for Environmental Education

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