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During the past several years interest, concern, and action related to environmental problems have increased. Among the problems creating the concern have been materials that can cause pollution and biological damage in and near the home and the disposal of materials used in the home.

People need to become more aware of the materials and substances under, in, or used in the home that are potentially hazardous.

Many people are not aware that the site on which their home is built may contain chemicals or radiation that can pollute the air of the home. If water is obtained from a well, substances in the water from the local site can also be potentially harmful.

Homes are sometimes built with materials that can pollute the air or water of the home. Materials used in plywood, insulation, certain types of treated woods, rugs, flooring, and paints may contain harmful chemicals. Material used in water and air pipes can also contain substances such as lead and asbestos that can cause biological harm.

Nearly all homes also contain a variety of household products that include hazardous substances that need to be purchased, used, stored, and disposed of in a safe manner. If the products are not handled correctly they can have a detrimental effect on the health and safety of the residents, their neighbors, and the environment.

Environmental education programs can help to improve the home environment and the health of the citizens of the community by focusing on environmental problems found in and around homes. Environmental education programs can also help in the reduction of wastes and pollution by focusing on use and disposal of materials from homes.

WHAT SHOULD BE DONE TO REDUCE THE PROBLEMS RELATED TO

HAZARDOUS AND TOXIC MATERIALS IN THE HOME?An increasing number of communities, schools, and organizations have identified the need for educational materials and programs related to the purchase, use, storage, and disposal of hazardous and toxic materials. Effective education programs and materials frequently stress five topics related to the problem and include activities in the home and the community related to each of the topics. Many schools are beginning instruction in the elementary grades and continuing instruction through the secondary grades. Effective programs also involve the community and the mass media (television and newspapers).

This digest highlights topics and actions to include in an environmental education program that provides a focus on environmental and health hazards in the home.

DO STUDENTS AND PARENTS KNOW WHAT HAZARDOUS AND TOXIC

SUBSTANCES ARE FREQUENTLY USED OR FOUND IN THE HOME?Many substances frequently used in the home can be hazardous to household members and other people. Items that frequently include toxic substances are household cleaners, paint products, pesticides, automotive products, aerosols, wood preservatives, medicines, art supplies, chemistry sets, disinfectants, fertilizers, polishes, waxes, medicines, photographic chemicals and flashlight batteries.

Toxic or hazardous substances may also be found in the home due to materials used in construction or due to substances in the soil or the ground at the homesite. Substances in insulation, plywood, floor coverings, treated wood, paints, pipes and pesticide treatments can be potential hazards. Radon from the ground and some chemicals in the soil or in the water at the homesite are potential hazards to people and pets.

Activities should be provided to have students and parents inventory the toxic and hazardous materials in their homes.

Publications by Purin (1984a, 1984b, 1984c, 1984d), Howe, Disinger and Wilson (1989) and Rousseau (1989) provide guides to inventory materials commonly found in the homes.

DO STUDENTS AND PARENTS KNOW THE TOXICITY OF MATERIALS USED

OR FOUND IN THE HOME?Scales have been developed for rating toxicity of substances. Items such as insecticides are "extremely or super toxic"; less than a teaspoon of some materials can be lethal to a 150 pound adult. Some substances while being harmful to humans and other animals, do not do serious damage at a rapid rate. Some materials are only mildly toxic or almost non-toxic and are relatively safe to use.

People should be educated to know the relative toxicity of various materials so they can make wise decisions for purchase, use, storage, and disposal.

Most state Environmental Protection Agency offices have lists that rate materials. A toxicity rating scale is also included in the publication by Howe, Disinger, and Wilson (1989).

WHAT ENVIRONMENTAL DECISIONS SHOULD BE MADE WHEN PURCHASING

A HOME AND SELECTING MATERIALS TO BE USED IN A HOME? HOW CAN

PROBLEMS IN A CURRENT HOME BE CORRECTED?Environmental audits are useful prior to purchasing a home or building a home. Checklists are available to help guide examination of the site and selection of materials to be used. Environmental audits should also be completed for existing homes and homesites. Checklists are available to guide these audits. Most environmental audit materials suggest action to reduce or eliminate existing or potential problems.

Purchase of less toxic-materials is a very useful way to avoid hazards in the home and yard and to reduce disposal problems. Charts that provide examples of alternative products that will substitute effectively for more hazardous materials are useful for influencing decisions on what to purchase.

Publications by Purin, Rousseau, and the Washington State Department of Ecology (1988) provide suggestions for influencing purchase decisions. The publication by Howe, Disinger, and Wilson (1989) contains activities for site audits and suggestions for alternative materials to use in homes.

DO STUDENTS AND PARENTS KNOW HOW MATERIALS SHOULD BE USED,

STORED AND DISPOSED OF TO REDUCE DANGER TO THE USER AND TO OTHERS?People need to learn what substances are potentially hazardous and to read labels on all materials purchased regarding what substances are included, possible hazards in use, proper storage, and proper disposal.

Activity manuals listed in this digest provide information and activities to help convey this knowledge. In addition, a recent guide to hazardous materials and substances should be obtained from the local health department or state Environmental Protection Agency because new information is regularly being released.

Schools should use activities to evaluate changes in student and family behavior related to use, storage and disposal of materials. Activities should also be used that create community involvement related to disposal problems.

DO STUDENTS AND PARENTS KNOW WHAT REGULATIONS SHOULD BE ENACTED BY

LOCAL COMMUNITIES TO REDUCE POTENTIAL PROBLEMS DUE TO

HOUSEHOLD HAZARDOUS AND TOXIC MATERIALS?Many communities have found they can reduce problems due to potentially dangerous materials and substances by enacting regulations related to sale of materials, use of materials, storage of materials, transportation of materials, and disposal of materials. Communities that have regulations should be certain that both their regulations and state regulations are publicized and enforced. Communities that do not have local regulations beyond those of the state, should publicize the state regulations and check to determine if local regulations would help to safeguard the citizens of the community and the environment.

Most local or county governments can provide information on regulations that affect use and disposal of hazardous materials in their areas. These regulations frequently change, so updates should be obtained as available.

Environmental education activities should focus on determining what regulations exist, how they are being followed, and what regulations would be environmentally desirable. Action-oriented activities that involve the community can be effective ways of enforcing and modifying regulations.

HOW SHOULD PROBLEMS RELATED TO HOUSEHOLD HAZARDOUS MATERIALS

BE INCLUDED IN THE CURRICULUM?Effective environmental education programs should introduce concepts, skills, and behaviors beginning in the lower elementary

grades. The program should be coordinated and be continued throughout the elementary and secondary grades.

Programs that include activities in several content areas of the curriculum (science, social studies, language arts, etc.) are generally more effective than those that approach the problems through one content area. In addition, programs that emphasize action projects are more effective then those that do not.

The publications by Purin (1984a, 1984b, 1984c, and 1984d) provide a good set of materials to begin a program. The publication by Howe, Disinger, and Wilson (1989) lists many other publications and provides sample activities from several. Additional materials are listed in the reference section and others can be obtained by searching the ERIC database.

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