



Kentucky Green and Healthy Schools

Teacher Guide

Hazardous Chemicals



If your students have chosen to do an Improvement Project in the Hazardous Chemicals category, the resources below can help them as they complete the Project Form.

Remember to let your students lead!

As much as possible, let the students decide the direction of their investigation and come up with Improvement Project ideas.

Places to Investigate

- Light bulbs
- Labs
- Cleaning closets

People to Interview

- Maintenance/custodial staff
- Administrative staff
- Teachers
- Exterminators

Questions

These questions can be utilized as prompts should you need them. Ideally, we would like students to engage in their own questioning to provide an authentic learning experience.

- Mercury
 - Where is mercury found in the school?
 - How are items containing mercury stored?
 - Does your school have a policy limiting the purchase of mercury-containing devices and encouraging mercury-free alternatives?
 - Does your community have a mercury collection program to encourage proper disposal and handling of mercury-containing items (including “burned out” fluorescent bulbs)?
 - How are the environmental and health effects of pollution caused by mercury and other hazardous chemicals included in each grade’s curriculum?
- Integrated Pest Management
 - How does your school use pesticides (including herbicides, fungicides, insecticides, rodenticides, germicides, sanitizers, and disinfectants)?
 - Does your school have an integrated pest management plan?
 - Does your school contract with a certified and licensed pesticide applicator?
 - Does your school maintain a pesticide application notification registry, notify those on the registry at least 24 hours before each pesticide application, and post notice of time of pesticide application for at least 72 hours following each pest application?
 - What happens to unused pesticides?
 - What techniques are used to eliminate or discourage pests without the use of chemicals?





Questions (continued)

- Chemical Safety
 - Does your school have a chemical management plan that takes into consideration:
 - Purchasing
 - Storage
 - Use
 - Spills
 - Disposal of hazardous chemicals
 - Appropriate teachers and staff are trained on this plan
 - Does your school have spill response kits located in easily accessible locations?
 - Are school staff that use or handle hazardous chemicals properly trained?
 - Conduct a chemical inventory. Did you identify any safety violations and/or disposal needs?
 - Does your school have a proper chemical storage system in place that includes components A through I listed below?
 - In locked storage rooms or closets?
 - In areas using the OSHA diamond identification system?
 - By the chemical family or Flinn chemical inventory system?
 - With labels showing the date of receipt or preparation?
 - With labels clearly noting chemical as well as common names?
 - With labels indicating the concentration of solutions?
 - With the updated inventory list posted?
 - With the Poison Control Center telephone number nearby for emergencies?
 - With the local fire department aware of locations of all chemical storage areas?
 - Are chemicals stored as outlined by their Material Safety Data Sheet (MSDS)?
 - Are hazardous chemicals disposed of as outlined by their Material Safety Data Sheets (MSDS)?
 - Are chemicals or chemical-based substances purchased in large quantities or in small quantities on an “as needed” basis?
 - Are less hazardous or environmentally friendly chemical substitutions considered when purchasing chemicals?
 - What safety equipment related to chemical handling is found in classrooms and labs (e.g., labeled gas valve and electric panel, shut-off valves, exhaust fans, fume hood, safety showers, eyewash station)?

Resources

- EEinKentucky.org - This website is a one-stop resource for environmental education in Kentucky. The site lists grant announcements, jobs, news, professional development opportunities, conferences, and other events from across the state.
- **School Laboratory Management & Chemical Cleanout** - We have several of these disks in our office and will be happy to mail them to your school. They are a very informative tool for schools that have laboratories. The disks are published by the Kentucky Department of Environmental Protection.





Improvement Projects

Your students should come up with their own ideas for an Improvement Project, but below are some examples of previous Improvement Projects for Hazardous Chemicals:

- Using beneficial insects to control pests on school gardens
- Presenting plays, puppet shows, and games to teach students and staff about chemical safety
- Creating a battery recycling program
- Replacing cleaning supplies with less hazardous alternatives
- Working with a science teacher to organize and diagram a chemical closet
- Taking inventory of safety supplies and ordering needed supplies
- Collecting pledges from students to reduce chemical use

Extensions

After coming up with an idea for an Improvement Project, consider the following optional extensions.

- A) Submit your investigation documentation to the Project Learning Tree (PLT) GreenSchools! program for their Environmental Quality category. Once you submit investigation documentation, your school becomes eligible for thousands of dollars in grant money from the GreenSchools! program. You can also submit your completed Improvement Project to this site. Learn more at www.plt.org/greenschools.

