

## DISCLAIMER

*The Healthy Schools Campaign does not provide client legal services. This Action and Resource Guide is designed to be a user-friendly guide to selected common issues and concerns in the school environment, coupled with guidance in understanding current regulations and public health standards affecting school health and safety. Readers needing legal advice or rulings on information cited in this Guide should seek advice from an attorney. Contact the Healthy Schools Campaign at 312-419-1810 for referral information.*

## For Our Out-of-State Readers

The Healthy Schools Campaign is a nonprofit organization working to make Illinois schools environmentally healthy places to learn and work. While this Guide is for schools in Illinois, it is based in part on the federal Occupational Health and Safety Act (OSHA) regulations that may apply in at least 22 other states. Moreover, we have found that ‘schools are schools and kids are kids.’ In other words, the grassroots concerns and the lack of protection for children (and sometimes adults) are common to many school districts nationally. To solve a problem in your school, refer to federal laws cited herein, or look to your own state’s building codes, occupational and environmental health laws, school facility requirements, regulations on toxic materials, and related topics. You can often solve a building-level problem right now. To create systemic change, such as addressing the lack of parent or employee right to know about hazards or creating enforceable protections for occupants of schools under renovation, new state legislation, regulations, or improved enforcement of existing regulations are necessary. You can join the Healthy Schools Campaign to promote policies that contribute to healthy schools in Illinois. Visit our website to sign up for monthly legislative Action Alerts and find out about the many other ways you can support the campaign.



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# ACTION AND RESOURCE GUIDE for HEALTHY SCHOOLS

Clean Environment, Healthy Children, Better Education



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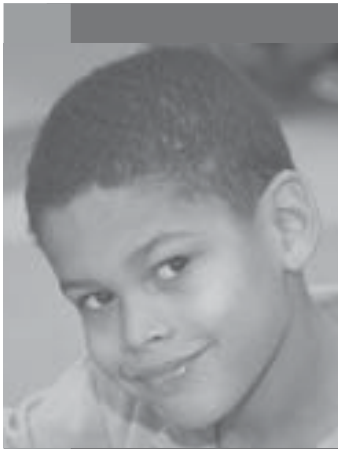
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# FOREWORD

## A Message from Illinois Attorney General Lisa Madigan



As parents, educators, and concerned citizens, we all want to ensure that our children have the opportunity to learn and grow in safe schools. We work hard to protect our kids from threats such as school violence, Internet predators, and teen dating violence with a variety of programs and services. However, many of us are unaware of the serious environmental hazards to which kids are often exposed in their schools.



Children attend school to gain the knowledge and social interaction that will allow them to develop into happy, healthy adults. Sadly, many school environments contain hazards—such as poor indoor air quality, mold, pests and pesticides, and lead—that may impede that development. Such hazards pose serious health risks, which may cause illness and, in turn, increase rates of student absenteeism and decrease academic performance.

The teachers and staff responsible for our children's well-being may also fall victim to environmental hazards, causing the entire school community to suffer. Particularly disturbing are findings that schools attended by poor and minority students are disproportionately affected by substandard indoor air quality.

We can not allow this problem to continue unchecked. As Attorney General, I urge parents, community members, and school decision makers to join together to create a proactive plan to prevent and correct environmental problems in schools.



The *Action and Resource Guide for Healthy Schools* is a valuable tool that can help your group assess your school's environment, identify hazards, and find solutions. The guide also contains an extensive resource section, complete with contact information, sample complaint letters, standards concerning indoor air quality, and information on the potentially hazardous products often found in schools.

I applaud the Healthy Schools Campaign for its work to create healthy school environments for the children of Illinois, and I encourage you to get involved and support these efforts. The *Action and Resource Guide for Healthy Schools* provides you with the information and resources you need to get started. By taking action and working together, we can improve the quality of children's lives now and in the future.

**Lisa Madigan**  
**Illinois Attorney General**





# ABOUT THE HEALTHY SCHOOLS CAMPAIGN



The Healthy Schools Campaign is pleased to publish this **Action and Resource Guide for Healthy Schools**. This comprehensive reference is intended to provide parents, school personnel, policymakers, and other concerned citizens with the information they need to work together to make their communities' schools healthy places to learn and work. It contains information on the common issues affecting children's environmental health and learning, and adult occupational health at school, along with information on environmental, health, and safety laws, regulations, and resources specific to Illinois.



In 2002, the Healthy Schools Campaign was launched with a mission to advocate for policies and model programs that allow students and staff members to work and learn in a healthy school environment. We envision a society in which:

- Every student and staff member, regardless of race, religion or socioeconomic background, has equal access to a healthy school environment.
- Schools leaders set the example that there is a critical connection between health and the environment.
- Students benefit in both the short and long term by having an opportunity to lead productive and healthy lives by
  - having reduced risk of disease,
  - leading healthier adult lives,
  - acting as stewards of the environment.

The Healthy Schools Campaign grew out of joint work between American Lung Association of Metropolitan Chicago, Citizen Action/Illinois, Generation Green, and Safer Pest Control Project to urge the Chicago Public Schools to implement an Integrated Pest Management program in order to reduce the amount of pesticides to which Chicago's predominantly low-income and minority schoolchildren are exposed. The Healthy Schools Campaign quickly expanded its base of support and agenda to address a wide range of policies relating to school environmental health, including:

- Advocating for policies that require indoor air quality management plans, improve school inspections, and provide funding for environmentally sustainable school construction and maintenance.
- Implementing green clean programs to reduce the use of toxic cleaning products in Chicago and other cities in Illinois.
- Addressing the problem of diesel school bus emissions by promoting bus retrofitting, the use of low-sulfur diesel fuel, and anti-idling policies.
- Advocating for full implementation of the Hazardous Waste Collection Act and promoting safer use of chemicals in classrooms.
- Promoting healthy and high-performing sustainable school building design.
- Addressing the problem of childhood obesity by promoting healthy school food policies with an emphasis on farm-to-school programs.



In addition to policy work, the Healthy Schools Campaign educates and organizes parents, school personnel, and community members about school environmental health through volunteer training, school-based environmental health audits, public forums, communication with coalition members, development of a school incident database, and Child Proofing Our Communities Campaign's Green Flag program ([www.greenflagschools.org](http://www.greenflagschools.org)).

Now a recognized leader in school health policy, the Healthy Schools Campaign is endorsed by more than 90 organizations representing the interests of unions, students, parents, health affected persons, public health advocates, educational reform activists and communities.

The Healthy Schools Campaign plans to update this Guide periodically to reflect policy and regulatory changes, identify new resources, and inform our constituents on emerging environmental health issues needing to be addressed. Join the Healthy Schools Campaign and get on their list to receive future editions of this valuable resource! Visit our website at [www.healthyschoolscampaign.org](http://www.healthyschoolscampaign.org) to find out how you can become part of the Healthy Schools Campaign.




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## ACKNOWLEDGMENTS

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The Healthy Schools Campaign gratefully acknowledges the Healthy Schools Network, Inc. (HSN) for permission to reprint and adapt its *New York State Environmental Action Guide: Help for Parents in the Absence of Standards Just for Children*. HSN's website is [www.healthyschools.org](http://www.healthyschools.org).



We also acknowledge and thank Bess Schenkier of the Chicago Environmental Law Clinic for her research of relevant Illinois laws and Joseph Zanoni of the University of Illinois at Chicago School of Public Health, Illinois Education and Research Center, for his occupational health expertise.

Lastly, thank you to the following reviewers for their time, effort, valuable comments, and expertise: Claire Barnett, Executive Director, Healthy Schools Network, Inc.; Julie Dick, Program Associate, Safer Pest Control Project; Paul Klenck, Deputy General Counsel, Illinois Education Association; Becky Lockart, Pollution Prevention Specialist, Illinois EPA; Paul Ruther, Coordinator, Center for Health, Environment and Justice; Bess Schenkier, Attorney, Chicago Environmental Law Clinic; Maryann Suero, Regional Team Manager, Children's Health, U.S. EPA's Office of Children's Health Protection; Don Williams, President, Accolade Environmental Ltd. B; Rhonda Williams, Deputy Executive Director of Policy and Programs, American Lung Association of Metropolitan Chicago; Joseph Zanoni, Associate Director of Continuing Education and Outreach, University of Illinois at Chicago School of Public Health, Illinois Education and Research Center.

The Healthy Schools Campaign would like to give special thanks to Illinois Attorney General Lisa Madigan for contributing partial funding for the printing of this guide and for her office's ongoing support of school environmental health for the children of Illinois.

# PREFACE

Children are our most precious resource. They are the ones who will control the destiny of the world tomorrow, and will determine whether the world lives in peace and prosperity, or war and suffering. The education of our children is critical to their future, and anything that interferes with their physical and emotional health and their ability to learn poses a distinct threat to the future of the next generation, and ultimately to our very civilization.



The quality of teaching is obviously critical to the intellectual growth of students. But there are many factors independent of teaching that can interfere with the ability of a student to learn, to be challenged and motivated to expand their minds, and to learn the problem-solving skills necessary for a productive and satisfying life. The overall goal of the Healthy Schools Campaign is to do all in its power to reduce those environmental factors which undermine health and learning, and which pose physical and psychological barriers to allowing children to achieve all that they can through education.



On the basis of body weight, children drink more fluids, eat more food and breathe more air than do adults. Therefore, their exposure to pesticides and other contaminants in food, water or air pollutants, pound for pound, is greater than that of adults. Children are less well able than adults to detoxify most pesticides and other organic contaminants. Children's developing organ systems—especially the brain, immune system, lungs and endocrine systems, including reproductive organs—are highly vulnerable to metals and organic substances. Exposures to several different toxic substances are known to result in a shortened attention span, leading to a reduced ability to learn and a reduced IQ. Many of the damaging actions of such substances on these organs do not occur when an adult is comparably exposed, and the alterations induced appear irreversible. Children have more years of life ahead of them, resulting in the fact that disabilities initiated during the periods of development result in more years of productive life lost or impaired. Exposures to hazardous contaminants and physical injury during development extend the time in which to develop chronic diseases that may last through the rest of a person's life. Injuries and hearing loss occurring during school years often pose disabilities that last a lifetime.



Our schools are not always healthful places for children or for adults. We commend the Healthy Schools Campaign for producing this technical, yet accessible, manual that can be understood and used by laypersons. This guide details some of the serious hazards found in the schools, and provides information on how students, parents, school administrators, and other concerned individuals can help make schools safer and more supportive of health and learning. This information is useful only if it is used by everyone who is concerned to help build a better learning environment within our schools.

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# RESEARCH ON CHILDREN'S ENVIRONMENTAL HEALTH



As children go off to school, parents hope they will learn, play, and have good experiences with other students and their teachers. Yet, they also worry about gangs, violence, and drugs or alcohol. But what about the **environmental threats that face children, teachers, and others who work in schools every day** such as walls covered with peeling **lead**-based paint or **mold**; stopped-up sinks and over-flowing toilets; indoor air contaminated with **asbestos**, dust, or **chemicals** from cleaning agents or construction materials; hazardous art, science, and vocational education supplies; **pest** infestations temporarily abated with toxic **pesticide** applications to building and grounds? In addition to exposure to **construction** hazards and **diesel exhaust** during the regular school year, children in school during the summer may have a magnified exposure risk to environmental hazards since schools typically schedule heavy cleaning and renovations for the summer—during a time when the building is supposedly unoccupied.



An increasing amount of scientific evidence suggests that the physical environments in which children are exposed have a profound impact on their ability to learn. Since children spend most of their waking hours outside of home in school, making sure that schools are healthy environments promotes children's well-being and performance.



Because school attendance is mandated by law, the federal and state governments and local school districts have a responsibility to provide healthy school environments. Nearly 56 million people in the United States spend their days in elementary and secondary schools. The U.S. General Accounting Office admits, "While laws compel children to attend school, some school buildings may be unsafe or even harmful to children's health."



According to the Department of Education's National Center for Education Statistics, in 1999, 43% of America's public schools reported at least one unsatisfactory environmental condition. In addition, 25% had unsatisfactory ventilation, while indoor air quality was reported to be unsatisfactory in 20% of them. Specifically, 70% of schools in Illinois report at least one unsatisfactory environmental condition.<sup>1</sup> According to the Illinois State Board of Education, \$8.2 billion is needed for infrastructure improvements. This includes \$2 billion for health, life, and safety work on 5,795 buildings.<sup>2</sup>

Research demonstrates that young children are uniquely vulnerable to environmental health hazards, and that some health and learning problems are linked to pollutants. Children are particularly at risk from many environmental threats. Ultimately they are exposed to more hazards because they eat proportionally more food, drink more fluids, and breathe more air per pound of body weight than adults, and their response to toxic substances can differ markedly from those seen in adults so they are less able to protect themselves.

Irritants and allergens such as pests, pesticides, molds, asbestos, and cleaning products can have a negative impact on indoor air in schools. The effects of poor

## Poor indoor air quality can increase risks of:

- √ Allergies
- √ Asthma
- √ Infectious Diseases
- √ Chemical Vapors
- √ Learning Problems
- √ Behavior Disorders
- √ Sinusitis
- √ Headaches

## And more...

indoor air quality (IAQ) on health, learning, and general well-being are wide ranging, and include allergies and asthma, increased rates of infectious diseases, chronic sinusitis, headaches, and a variety of respiratory diseases. Asthma is on the increase in children. Learning and behavior disorders are prevalent and affect a growing number of school children.<sup>3,4</sup> In fact, asthma is the number one cause of school absenteeism due to a chronic condition.<sup>5</sup> The American Lung Association found that children miss more than fourteen million school days each year because of asthma exacerbated by poor IAQ.<sup>6</sup>

Researchers have begun to establish the relationship between poor IAQ, sick students and teachers, and poor academic and occupational performance. Research has also documented the fact that schools serving poor and minority students suffer disproportionately from substandard IAQ. This should be of particular concern as school districts attempt to address the minority achievement gap.<sup>7</sup>

New research is continuing so that we can better understand the link between environmental exposures and child development. The Healthy Schools Campaign monitors this research and shares the most recent findings with our constituents through newsletters, alerts, meetings, and other campaign activities. Visit our website at [www.healthyschoolscampaign.org](http://www.healthyschoolscampaign.org) to download our latest newsletter and get on the list for our monthly Action Alerts.

# How To USE THIS GUIDE



This Guide is designed to help anyone who cares about the health and well-being of students and school personnel to identify environmental hazards and take action to improve school environmental health.



- A parent, teacher, custodian, school nurse or even a student can get the ball rolling by bringing potential hazards to the attention of school decision-makers. This *Action and Resource Guide* includes information on common school environmental health hazards (Chapters 1-10), along with sample letters that can be used to report problems to appropriate administrators and agencies (Appendix G). It also includes resources that laypersons can turn to for additional information and support (Appendix A).
- School decision-makers, such as administrators, facility operators, and school board representatives can use this Guide to help assess their school environments, establish policies and plans for addressing hazards, and bring together the various stakeholders to monitor and correct problems. It covers the state and federal laws and regulations pertaining to hazardous materials and substances typically found in schools (Chapters 1-10), lists resources designed to assist school personnel (Appendix A), while also offering a practical process and structure for working with the school community to maximize school environmental health (below).



## Start by Looking at Indoor Air Quality

An ounce of prevention is worth a pound of cure when it comes to school environmental health. Smart school decision-makers will wish to take proactive steps to assess their schools and put plans and policies in place to see that small problems don't turn into big ones affecting the health of students and staff and requiring inconvenient, costly interventions down the line.

Indoor Air Quality is a great place to start. The following information has been adapted from the U.S. EPA's *Indoor Air Quality Tools for Schools*. More information about the importance of indoor air quality, along with an excellent Indoor Air Quality Management Plan that can be adapted by school decision-makers can be found at [www.epa.gov/iaq/schools](http://www.epa.gov/iaq/schools).

Almost all school environmental hazards negatively impact the indoor air quality. In addition to the health consequences of having poor indoor air quality, the failure to respond promptly and effectively to indoor air quality problems can have considerable financial and educational costs. Many school districts across the nation have found themselves in the middle of 'crisis situations' in which they must spend substantial amounts of money to address environmental problems. Whether it is to



## Prevention Saves

If minor problems are allowed to develop unchecked into a serious indoor air quality problem, a variety of deficiencies may be identified, but it often cannot be determined which one, if any, caused the problem. As a result, schools can be confronted with an expensive list of potential explanations of their problem. The crisis atmosphere surrounding a serious indoor air quality problem creates pressure to remedy every deficiency immediately instead of establishing a prioritized approach to indoor air quality improvement. By contrast, many of the preventive measures recommended in Indoor Air Quality Management Plans can be accomplished with in-house effort, following a schedule that reflects a school's resources.

**Environmental hazards produce unfavorable learning surroundings for children and also reduce the productivity of teachers and staff.**

**In serious cases, schools have been shut down and have had to move staff and students to temporary facilities.**

pay for scientific tests, remove dangerous contaminants, or install new building materials, large sums of money are wasted since many of these problems could have been prevented. With budgets being tight in most schools, this is a significant concern.

In serious cases, schools have been shut down and have had to move staff and students to temporary facilities. Environmental hazards produce unfavorable learning surroundings for children and also reduce the productivity of teachers and staff due to discomfort, sickness, or absenteeism. Therefore, schools lose both their money when students and staff are absent and their effectiveness in educating children properly.

Delaying remediation of indoor air quality problems can not only be costly, but can also lead to liability claims and lawsuits that can damage a school's reputation. Clearly, indoor air quality issues are best addressed early, and better still, proactively.

### **How to Create an Indoor Air Quality Management Plan**

The most effective way to solve and prevent these indoor air quality problems is to have an Indoor Air Quality Management Plan. A good plan involves implementing regular walkthrough inspections, utilizing indoor air quality checklists, and setting repair and upgrade priorities. The key to being successful is to have an Indoor Air Quality Management Plan implemented by a team of dedicated school stakeholders. It is crucial to bring together all the different participants who play a role in influencing indoor air quality or are concerned about it. Indoor Air Quality Management Plans, along with preventive measures, will help schools avoid costly crises.

### **Step 1: Building an Environmental Team**

If you have an environmental health concern about your school, chances are there are other school personnel, parents, and students who have similar concerns. The way to approach this is to bring people together to take a comprehensive look at your school's environmental health. You must include all of your school's stakeholders in this process in order to be successful.

This "Environmental Team" may already be present in the form of an existing Health, Life, and Safety Committee. Depending on your school and the role its Health, Life, and Safety Committee plays, you may want to either approach them about implementing an Indoor Air Quality Management Plan or deciding it may be more appropriate to create a separate Environmental Team.

The Environmental Team, which is led by a **Coordinator**, can (and probably should) include representatives from nine distinct groups:

1. **Teachers** play a strong role because their decisions and activities can affect the sources of pollutants and levels of ventilation within their room. Some teachers, such as art, science, vocational and industrial

arts, and home economics, have unique pollutant sources and ventilation equipment to manage.

2. **Administrative Staff** encompasses all administrative and support personnel. The staff have control over unique pollutant sources such as printing and kitchen areas, and often controls the operation of the ventilation equipment in their areas.
3. **Facility Operators** are the people who have direct technical responsibility for operating and servicing the heating, cooling, and ventilation systems within the school. The role of the facility operator is crucial in preventing and solving environmental problems.
4. **Custodians** and their responsibilities vary widely among school districts. Building maintenance checklists can help evaluate housekeeping activities within the school.
5. **Health Officers/School Nurses** can be helpful by monitoring and recognizing trends in reported illnesses that may give early warning of environmental problems.
6. **School Board Representatives** can provide the resources and authority necessary to implement an Environmental or Indoor Air Quality Management Plan.
7. **Contract Service Providers** need to be informed and active members of the Environmental Team because their activities can have a direct and substantial impact on the environmental quality within your school. Examples of these activities include pesticide application, renovation work such as re-roofing, and maintenance of ventilation equipment and air filters.



**Delaying remediation of indoor air quality problems can not only be costly, but can also damage a school's reputation.**

## Start-Up Hints

Gather the following information to make starting an Indoor Air Quality Management Plan easier:

- Get a map/blueprint of the school (this will be invaluable).
- Count the number of staff and their job category, for example the number of teachers, the number of maintenance staff, etc.
- Obtain the names and contact information for any outside contractors the school uses, such as maintenance staff, or heating, ventilation, and air-conditioning contractors.

Before starting the program, some Coordinators have also found it useful to:

- Get support from the school and/or school district administration.
- Meet with the heating, ventilation, and air-conditioning technician to acquire a working knowledge of the various ventilation units at your school. Learn which systems serve which rooms.
- Set up a filing system for all the paperwork you will generate. Keep it in a convenient location. Set up a location for turning in checklists.
- Set up an Indoor Air Quality Resource Center at your school in an area where staff members can access information at their leisure. This is also a great place to post important reminders and communicate with your staff when something comes up.

**Remember:** Implementing an Indoor Air Quality Management Plan is an on-going *process*, not an overnight miracle. Be patient. Stay consistent, organized and never forget that you are doing something important for staff and students at your school.



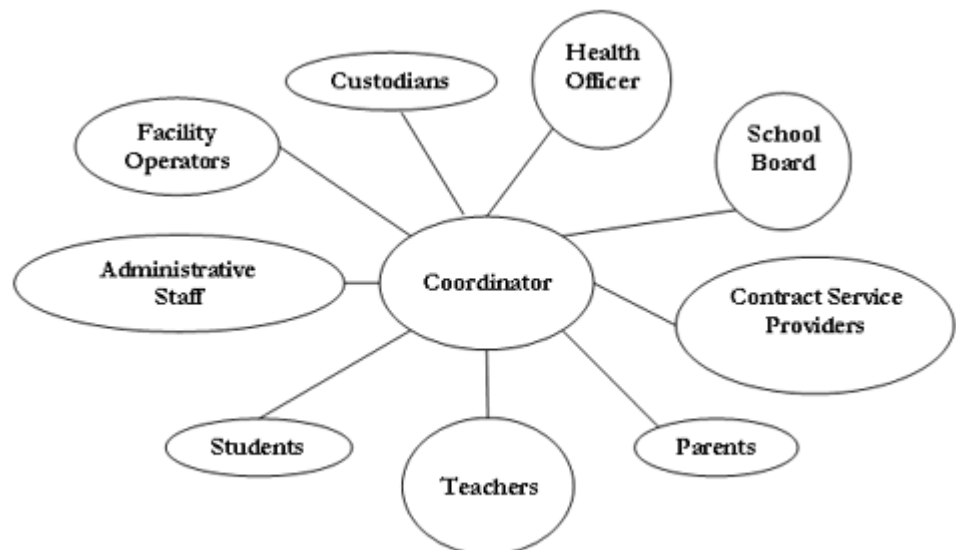
8. **Students** are the primary customers of your school. Information should be shared with students so they understand their role in maintaining good environmental quality, such as keeping good personal hygiene and keeping lockers clean. In some schools, students have learned about good indoor air quality and then have participated by keeping rooms clean and other activities.
9. **Parents** are another important constituent. It is important that they be included and that they be aware of the steps the school is taking to promote healthy environments. Sharing information with parents not only helps avoid miscommunication, but also has the potential of attracting additional resources and expertise to the school. They also have the ability to reach into the community and to develop support for needed changes and funding in a way that school personnel cannot.

## Step 2: Select an Indoor Air Quality Coordinator

Environmental and indoor air quality management within schools will not just happen—it requires teamwork, but you must designate someone as a Coordinator. Leading people is an important function of a Coordinator because it is people who both affect and are affected by the quality of the environment. People make decisions—decisions about what materials to bring into the school, how those materials are used, how the school building and ventilation systems are operated and maintained, how they are maintained, and how to respond to problems. Effective teamwork will ensure that an informed choice is made at each of these decision points.

The primary role of the Coordinator is team management and leadership. The Coordinator can be any number of people, whether it is the school engineer, nurse, or another school stakeholder. The important point is that someone has to step in as Coordinator to lead the rest of the team and manage its activities. His/her main functions are:

- **Leadership:** Coordinates an Environmental Team (as noted in the figure below) and encourages a sense of shared responsibility and



**An ounce of prevention is worth a pound of cure.**

**Smart school decision-makers will wish to take proactive steps to assess their schools and put plans and policies in place to see that small problems don't turn into big ones**

cooperative effort. Provides the team with information, and in coordination with the Environmental Team, implements Indoor Air Quality Management Plans.

- **Emergency Response:** Determines if and when outside professional assistance is needed, and coordinates their activities.
- **Key Authority:** Disseminates environmental information, registers environmental complaints and directs the response, and communicates environmental issues and status to school administration, staff, students, parents, and the press.

The choice of the Coordinator will probably depend on the organizational structure of your school system. In larger school districts, the Coordinator may be a district-level administrator, such as the business official, a health and safety officer, or the facilities manager. In smaller school systems and individual schools, the Coordinator may be the principal, school nurse, a teacher, or other school staff.

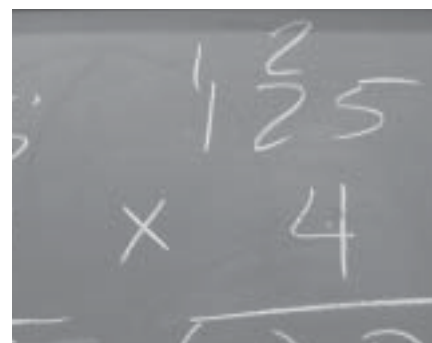
Who is chosen should be based on the functions and level of leadership needed and their level of genuine interest in improving the school indoor environment. In any event, success depends on having someone who can manage the team and who is empowered to take action. This includes authority to interact with district-level administrators, school staff, students, and parents, and to make budget recommendations. Note: the Coordinator does not have to be an “expert” in environmental issues. By using available resources like this Resource Guide, the U.S. EPA’s Indoor Air Quality Tools for Schools Kit, or other Indoor Air Quality Management Plans, the Coordinator and all team members will learn about environmental issues as the work progresses.

In a few situations, it may become necessary to share the responsibilities of the Coordinator by having a Co-Coordinator, or by delegating many of the administrative items to a committee, such as an existing Health, Life, and Safety Committee. The committee could also be composed of selected individuals from the community, such as local environmental or health department staff, parents, and volunteers from local businesses who have special skills, such as commercial building engineers. Independent of who is acting as the team leader, it is fundamentally important that on a school-by-school basis, the staff and students have the opportunity to learn about the basics of indoor air quality and environmental health so that their daily decisions and activities will not unnecessarily cause environmental problems.

The Coordinator should become familiar with their chosen Indoor Air Quality Management Plan and have a basic understanding of the Indoor Air Quality Management Plan process and effective communication.

### Step 3: Choose an Indoor Air Quality Management Plan

You must research Indoor Air Quality Management Plans and identify which one will work for your school. You may find that it is helpful to adapt pieces of several Indoor Air Quality Management Plans to fit your school’s needs and



### Teams Matter

Environmental and indoor air quality management within schools will not just happen—it requires teamwork.

People make decisions—decisions about what materials to bring into the school, how those materials are used, how the school building and ventilation systems are operated and maintained, how they are maintained, and how to respond to problems. Effective teamwork will ensure that an informed choice is made at each of these decision points.





resources. Again, we suggest the U.S. EPA's Indoor Air Quality Tools for Schools Kit. This can be found at [www.epa.gov/iaq/schools](http://www.epa.gov/iaq/schools). Another resource is the Indoor Air Quality Management Plan Development Package created by the Minnesota Department of Health. This can be found at [www.health.state.mn.us/divs/eh/indoorair/schools/plan/](http://www.health.state.mn.us/divs/eh/indoorair/schools/plan/).

This is the information-gathering and research phase. You should research information on radon, integrated pest management, lead, and other school environmental hazards. You should then see what your school's testing results or policies on these subjects are. Using checklists from Indoor Air Quality Management Plans can make this research much easier for you to collect this information.

#### **Step 4: Establish an Indoor Air Quality Checklist Interval**

To help maintain a high level of indoor air quality, it is recommended that the Coordinator completes an indoor air quality checklist at least once, and preferably twice, each year.

Since many complaints occur at the start of a new school year, completing an indoor air quality checklist shortly before school begins would reduce these complaints. Midway through the school year, for example during winter break, could be an appropriate time for the second checkup.

#### **Step 5: Establish a Plan for Emergency Response**

Acute indoor air quality problems such as a chemical spill, unintentional shutdown of ventilation systems, and other events such as a flooded carpet will require some form of immediate response. Preparing for such events now will help ensure that timely and cost-effective actions result.

Preparations may include developing a cooperative agreement or contract with a health and safety agency or private contractor to assist with acute indoor air quality problems that are beyond the capabilities of your Environmental Team.

Proper preparation can also mean having the appropriate equipment on hand—for example, the equipment needed to immediately clean and dry wet carpets, or having a pre-established agreement with a professional cleaning firm that can provide immediate service on a 24-hour, 7-days-a-week basis.

#### **Step 6: Inform Appropriate Committees and Groups**

Some of the actions that result from implementing this guidance may need to be coordinated with specific school committees such as the school or school district Health, Life, and Safety Committee, or groups such as the local PTA.

It may be useful to provide a briefing to these committees and groups.





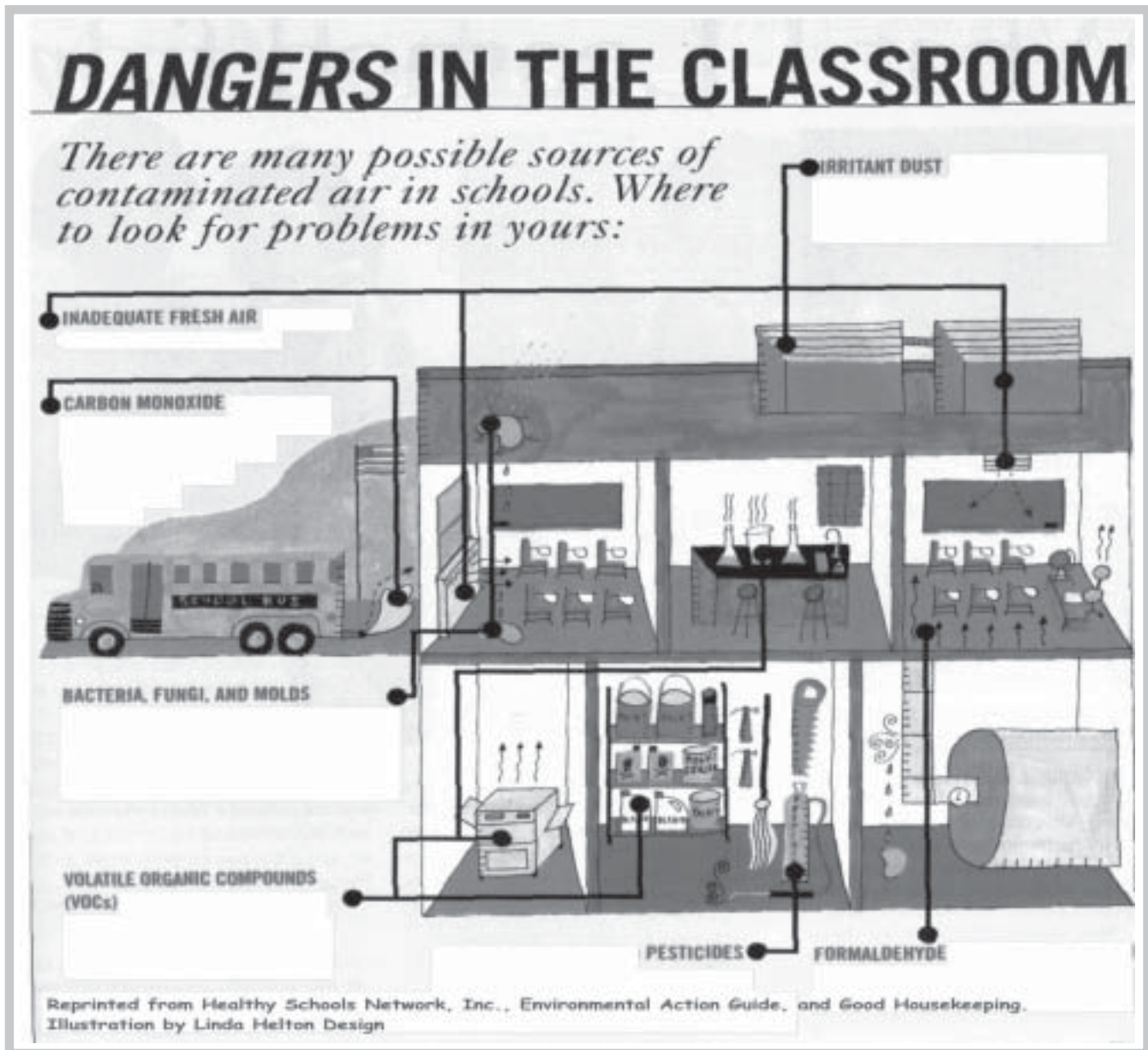
## Step 7: Establish Indoor Air Quality Policies as Needed

Some activities that affect indoor air quality may require clearly written policies from top management to ensure that all school occupants understand how they should or should not perform certain activities.

Inappropriate activities include smoking in improperly ventilated areas, pest control by individual occupants, adjustment of ventilation systems by untrained individuals, and maintenance activities such as painting during school hours or by using paints that have lead or high emissions of indoor air pollutants.

For further assistance, check Appendix A and/or contact the Healthy Schools Campaign at [info@healthyschoolscampaign.org](mailto:info@healthyschoolscampaign.org) or 312-419-1810, or visit us at [www.healthyschoolscampaign.org](http://www.healthyschoolscampaign.org). The Healthy Schools Campaign can provide technical assistance or make a referral to other resources tailored specifically for administrators, engineers, school facility staff, and parents.

## Where Does Indoor Air Contamination Come From?





## CHAPTER 1

# INDOOR AIR QUALITY

## Why is INDOOR AIR QUALITY important?



**G**ood or adequate indoor air quality contributes to a favorable learning environment for students, productivity for teachers and staff, and a sense of comfort, health, and well-being. These elements combine to assist a school in its core mission – educating children. Unfortunately, since the quality of the indoor air is the cumulative result of all the things that have gone right or wrong inside the building, there is no single testable standard for adequate air quality.



Despite the fact that children breathe more air per pound of body weight than adults and are more vulnerable to toxins, there are no indoor air quality standards specific to their exposures. In actuality, the school environment exposes children to more densely occupied spaces than commercial offices.

According to the U.S. Environmental Protection Agency (U.S. EPA), poor indoor air quality can cause illness requiring absence from school, and can cause acute health problems that can measurably decrease performance while at school.<sup>8</sup> The bottom line: poor indoor air quality can have a significant effect on learning.



Air-borne pollutants in schools can include dirt, dust, lead, asbestos fibers, chemical vapors, carbon monoxide and other gases, pesticides, bacteria, molds, pest droppings, diesel exhaust, and many other contaminants from equipment (such as photocopiers and computers) and people in the building. These pollutants come from surfaces in the building, cleaning products, paints and floor finishes, carpets, other occupants of the building, buses, the outdoor air, and they can result from demolition or construction activities. Not everyone has the same reactions. However, children and adults with pre-existing health problems including asthma and/or allergies generally display signs or symptoms earlier than their healthy counterparts. Asthma, in particular, is of enormous concern, as it is the leading cause of school absenteeism due to chronic disease. Nationally, it affects nearly 5 million children below the age of 18.<sup>9,10</sup>

Schools need to be heated during the winter. However, heat brings with it some safety risks. It is necessary for schools to be well ventilated, even when they are being heated. If not, toxins from furnishings and processes or from people build up in the air. School classrooms that are always too hot or too cold can also affect learning.



## What health or learning problems are associated with polluted indoor air?

Indoor air quality problems are often diagnosed by responding to the health symptoms and illnesses attributed to the indoor environment.<sup>11</sup> The term “building related illness” is a diagnosable illness whose symptoms can be identified and whose

The most common symptoms reported for poor indoor air quality include (but are not limited to):

- Irritations of eyes, nose, throat
- Dry mucous membranes and skin
- Mental fatigue, headache, sleepiness
- Airway infections, cough
- Hoarseness, wheezing
- Nausea, dizziness
- Redness, flushing of the face or skin, rashes
- Unspecific hypersensitivity reactions, allergic reactions, and asthmatic responses

## Air-borne pollutants in schools can include:

- √ Dirt and dust
- √ Lead
- √ Asbestos
- √ Chemical vapors
- √ Carbon monoxide
- √ Pesticides
- √ Bacteria
- √ Molds
- √ Pest droppings
- √ Diesel exhaust

And more...

cause can be directly attributed to airborne building pollutants (e.g., Legionnaire's disease, hypersensitivity pneumonitis). It is a disease or illness that can be traced to a specific pollutant or source within a building. The term "sick building syndrome" refers to a set of symptoms that affect some number of building occupants during the time they spend in the building and diminish or go away during periods when they are absent from the building. Their symptoms cannot be traced to specific pollutants or sources within the building.<sup>12</sup>

## How can parents tell if their child is affected by polluted indoor air at school?

Think about your child. Does your child regularly go to school healthy and return home sick or deeply fatigued? Does your child have more frequent or more severe asthma attacks on school days? What about other health problems, such as rashes, nausea, headaches, joint pain or congestion? Are any of your child's friends coming home with health complaints? Is the school under renovation? Is the school seriously overcrowded? Was the school built in a wet area or on contaminated ground? Do the air intakes draw in vehicle exhaust or emissions from adjacent hazardous facilities?

## How can you gather health information from the building occupants?

This can be difficult to do with young children, but it is possible to gather information from adults since they typically experience symptoms as well. Indoor environment investigations are done best using a team approach involving teachers, staff, administration, and parents. Encourage the teachers and staff to describe any other observations they might have about the building environment; sometimes the problem is not an indoor air quality issue at all.

For example, eye problems may be the result of inappropriate lighting or glare; loud or annoying noises or excessive vibration can also cause difficulty in concentration; aches and fatigue may be the result of ergonomic factors such as an improperly designed or sized workstation at a computer, or the result of mold contamination.

To download a Healthy Schools Campaign Environmental Audit Checklist that can help you gather indoor air quality information, visit <http://www.uic.edu/sph/glakes/coe/webcasts.htm>. At this website, you can also view and listen to a webcast that will tell you how to use the checklist.

Healthy Schools Campaign staff can also help you implement this Audit. Also, refer to the U.S. EPA's Tools for Schools program (see *Appendix A: Resources*, Indoor Air Quality).

## What is “adequate” ventilation for good INDOOR AIR QUALITY?

The standards recommended by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) are typically used by architects and engineers to design buildings and are incorporated into building codes by state agencies. The ASHRAE standards describe ventilation needs in terms of the amount of cubic feet of air per minute per person (cfm/person) called the mechanical ventilation rate of fresh air for rooms and buildings. This rate depends upon each room’s occupancy and usage. Various standards have been written over many years and are referred to by the year that they were published. Local building codes may reference a specific standard or a published ASHRAE standard.

Other variables that impact the quality of indoor air besides the mechanical ventilation rate are the fresh outdoor air rate and the amount of substances or toxins released into the indoor environment from use of products or persons. Some environmental professionals are measuring and using the level of indoor carbon dioxide as an indicator of the performance of the ventilation system as a whole as it relates to the quality of indoor air. Also, in an effort to save energy costs, sometimes the intake of fresh outdoor air is reduced. It can be more expensive to heat or cool new outside air rather than simply re-circulating the already treated air. Getting less outside air often results in the concentration of indoor pollutants. Adequate outdoor air should be mixed into circulation.

For more information about the ASHRAE standards, please see <http://www.ashrae.org/>. An industrial hygienist or environmental health scientist may provide consultation for the Environmental Team who may want to understand how the ASHRAE standards are applied to determine and describe indoor air quality in a specific school setting. These professionals may also identify sources of exposure to toxins or problems with the design and functioning of the school ventilation system that can cause respiratory irritation, reactions and illness for children and adults. They can also provide recommendations on effective methods to correct deficiencies toward improving overall indoor air quality.

## What school documents or information relate to INDOOR AIR QUALITY?

- Preventive maintenance plan for the heating, ventilating, or air-conditioning system (HVAC)
- Indoor air quality investigations and reports
- Testing for carbon dioxide (used to assess quantity of fresh air being introduced into the ventilation system)
- DOSH 900 - (A log and summary of all workplace injuries and illnesses involving lost time, loss of consciousness, medical treatment, etc.)
- Maintenance records and work orders on the HVAC system

## What could a parent look for or ask about that could affect INDOOR AIR QUALITY?

Ask for a building tour, or utilize a school event or classroom visit to take notice of:

- Musty, stale odors
- Sewer gas smells
- Visible mold or water damage on ceilings, walls, floors, carpets
- Pest damage or droppings
- Dirty carpets or bathrooms, broken toilets and sinks
- Classroom ventilators covered with papers, plants or other materials
- Chemical vapors or odors from equipment, new furnishings, or fresh paint



**The air inside should not be worse than the outside air. The accumulation of fumes and odors from sources in the school and lack of ventilation and maintenance can cause indoor air to be more polluted than outdoor air.**

- Material Safety Data Sheets (MSDS) for cleaning products, laboratory chemicals, paints, pesticides, shop chemicals and other specialty class chemicals (e.g. art)
- Comprehensive maintenance plan
- Health and safety committee reports or complaints and outcomes

(See Appendix F: **Your Right to Information** to learn more about using the Freedom of Information Act).

## Are there laws about INDOOR AIR quality in schools?

### Federal Laws and Regulations

- The U.S. Environmental Protection Agency has issued regulations on the outdoor air called Ambient Air Quality Standards to implement the federal Clean Air Act. These standards regulate six air contaminants: carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, particulate matter, and lead, with both warnings and advisories designed to deal with sensitive members of the population such as children, the elderly, and those with respiratory conditions. ***The air inside should not be worse than the outside air. The accumulation of fumes and odors from sources in the school and lack of ventilation and maintenance can cause indoor air to be more polluted than outdoor air.***
- There are no federal standards for indoor air quality other than under the Occupational Health and Safety Act (OSHA) which applies to private company employees and includes private and parochial school employees. Illinois' "Health and Safety Act", 820 ILCS 225/1 *et seq.*, makes OSHA standards applicable to all public sector employers in Illinois, including the State of Illinois and all political subdivisions of the State. This is enforced by the Illinois Department of Labor.
- In 1970, OSHA issued occupational exposure limits for several hundred substances in indoor air. These regulations were intended for industrial workplaces and were derived from studies of adults, specifically white males. Consequently, OSHA regulations do not apply to students when attending a school. Children are more sensitive than adults to chemical exposures due to their smaller body size, their smaller body organs (some organs, such as the lungs are still under development), and their faster breathing rates. ***Occupational exposure limits set for adults do not assure protection for children.***
- OSHA provides funding for technical assistance services for both public and private employers. Employees can request workplace visits and evaluations that are conducted at no cost to the employer. OSHA can only inspect private schools in Illinois (for information about public schools, see "Other Illinois Laws and Regulations" at the end of this chapter).

## Illinois Indoor Air Quality Act

- In 1994, the State of Illinois passed the Indoor Air Quality Act, 410 ILCS 87/1 *et seq.*, declaring that indoor air pollution is a serious threat to public health. Indeed, the law declared that the U.S. EPA considers indoor air pollution to be the number one environmental health threat in the United States. The Indoor Air Quality Act directed the Illinois Board of Health to develop statewide indoor air quality guidelines including:
  - Ventilation standards;
  - Criteria for acceptable indoor air quality;
  - Recommendations on achieving acceptable indoor air quality;
  - Educational programs on indoor air quality among public and private agencies;
  - A certification program for indoor air quality inspectors;
  - Source control guidelines for indoor air contaminants;
  - Occupancy control guidelines; and,
  - Suggestions for air cleaning procedures.

The law can be viewed at <http://www.legis.state.il.us/legislation/ilcs/ch410/ch410act87.htm>.

- The Illinois Board of Health issued Indoor Air Quality Guidelines, with the emphasis that the guidelines are not enforceable by law. Rather, they are designed to help individuals or groups improve the quality of indoor air in their homes and workplaces. The Guidelines are not state law or administrative regulations, and have not been made widely available. (See *Appendix B: Recommended Criteria for Acceptable Indoor Air Quality and Information on Hazardous Products Used in Schools and their Toxic Impact.*) Moreover, the air quality standards set forth in the guidelines were based on occupational standards for working-age adult males. The Board of Health noted specifically that the standards are not appropriate for environments where more susceptible persons, such as children, may be present.
- The Indoor Air Quality Guidelines adopted the ventilation standards promulgated by ASHRAE 62-1989. ASHRAE's current ventilation standard (62-2001) recommends ventilation for classrooms at 15 cfm/person of fresh outside air as compared to 20 cfm/person of fresh outside air for commercial office ventilation rates. These guidelines, when incorporated with recommendations to accommodate special contaminant controls to address sources such as those found in art and science classrooms, can result in improved indoor air quality. Many schools lack the equipment and/or staff expertise to adequately assess and maintain recommended ventilation criteria. Use of qualified industrial hygienists and ventilation professionals can improve compliance with recommended guidelines.
- The air contaminant limits set forth in the Illinois Board of Health's Indoor Air Quality Guidelines include recommendations pertaining to

**There are no federal standards for indoor air quality other than under the Occupational Health and Safety Act (OSHA) which applies to private company employees and includes private and parochial school employees.**



carbon dioxide, carbon monoxide, hydrogen sulfide, particulates, formaldehyde and nitrogen dioxide. These standards are primarily based on the Ambient Air Quality Standards set by the U.S. EPA or ASHRAE standards. (EPA averaging times used with contaminant limits vary by contaminant from one hour to one year, which makes applicability of some of these values questionable when applying them to classroom situations.)

- The guidelines also recommend that construction and remodeling should be performed during off-hours, that furnishings and materials be allowed to “dry out” for a minimum of three days or until there is no noticeable odor, and that paints and adhesives should be used sparingly. Water-based paints and adhesives are recommended.

### **Illinois School Health/Life Safety Code**

- The Illinois School Health/Life Safety Code, 23 Ill. Adm. Code 180 *et seq.*, sets a variety of standards for Illinois schools that could affect indoor air quality. This code does not give many specifics in regards to indoor air quality; it states that schools must be maintained under the codes of which they were built. The code is also applicable to all public schools in Illinois, except for Chicago Public Schools which are instead subject to the local building codes. The Illinois School Health/Life Safety Code can be viewed at <http://www.legis.state.il.us/commission/jcar/admincode/023/02300180sections.html>.
- The Health/Life Safety Code requires state permits for all newly constructed schools and all major remodeling work. All new construction must follow BOCA 1996, by the Building Officials and Code Administrators International, Inc. (BOCA). BOCA does have standards for air quality, but the code is very cumbersome to read and understand. The Health/Life Safety Code also requires annual inspections of all school buildings by the Regional Superintendent and decennial inspections of all school buildings by licensed architects. The decennial inspection includes an examination of the school’s compliance with asbestos abatement requirements (See Chapter 5) and a review of any lead-based paint problems (See Chapter 6). Inspection reports are to be maintained by the State Board of Education and made available to the public for review.
- Although the focus of the Health/Life Safety Code is on fire hazards, it also sets minimum standards for ventilation. It also gives the Regional Superintendent the authority to remove “dangerous or hazardous conditions or materials.” 23 Ill. Adm. Code 410. Additionally, the annual inspection program creates an opportunity for conducting environmental audits of school buildings without costly new measures.

■ **OSHA regulations do not apply to students when attending a school.**

■ **Children are more sensitive than adults to chemical exposures due to their smaller body size, their smaller body organs, and their faster breathing rates.**

■ **Occupational exposure limits set for adults do not assure protection for children.**



## Other Illinois Laws & Regulations

- While OSHA can only inspect private schools in Illinois, there are other agencies that can provide consultation services to public schools, including the Illinois EPA's Office of Pollution Prevention, Illinois Waste Management and Research Center, and the Department of Commerce and Economic Opportunity (DCEO). Employees in public schools have several options, including contacting their union, the Illinois Department of Labor, the Occupational Health Clinics, and other similar occupational safety and health resources (see Appendix E). However, because their children are not employees, **parents cannot request help from these sources**. Parents may want to partner with unions who in turn could file complaints leading to inspections and citations. In any case, these agencies with consultation services can provide more specific information for parents related to the adult workplace standards they enforce.
- The Illinois Department of Labor (IDOL) has a Safety Inspection and Education Division that assists public schools in addressing indoor air quality concerns. Assessments and sampling can be conducted in the school at no charge by qualified industrial hygienists. For further information, or to request an inspection of your facility, see [www.state.il.us/agency/idol/Safety/cleanair.htm](http://www.state.il.us/agency/idol/Safety/cleanair.htm).
- Employees or parents may seek inspection or assistance from their County Department of Public Health.
- Illinois has its own version of the federal Right to Know law, "Toxic Substances Disclosure to Employees Act," 820 ILCS 255/1 *et seq.* Although it does not set exposure limits, it requires that employees be properly informed about the hazardous substances they are being exposed to at work, including cleaning supplies, science, art and other supplies.
- The Illinois Attorney General will investigate and prosecute environmental violations that are considered to be a crime.
- Chapter 13 of the Chicago Municipal Code sets forth building inspection requirements for the Chicago Public Schools. Like the Illinois Health/Life Safety Code, its major emphasis is on safety issues, and it includes no specific provisions regarding indoor air quality. (Chicago Municipal Code Chapter 13 Buildings & Construction).
- Illinois law prohibits the use of tobacco on school property, including outside of school buildings. 105 ILCS 5/10-20.5b.

## Does your child:

- √ Regularly go to school healthy and return home sick or deeply fatigued?
- √ Does your child have more frequent or more severe asthma attacks on school days?
- √ Are any of your child's friends coming home with health complaints?

## Appendices relevant to this Chapter:

1. *Appendix A: Resources* (see "Environmental Education" for the Healthy Schools Campaign's checklists and audit program)
2. *Appendix B: Recommended Criteria for Acceptable Indoor Air Quality & Information on Hazardous Products Used in Schools and Their Toxic Impact*
3. *Appendix E: Illinois Occupational & Children's Health Resources*
4. *Appendix F: Your Right to Information*



## CHAPTER 2

# TOXIC AND HAZARDOUS CHEMICALS

## Why are TOXIC AND HAZARDOUS CHEMICALS a problem?



Acute or chronic exposure to chemicals by inhalation, skin contact, eye contact, or ingestion could cause temporary or permanent adverse health problems in children and adults such as tissue or organ system damage, cancer, or death. Aggravation of existing health conditions such as asthma can also occur. Chemicals also can have physical hazards such as the potential for fire hazard or explosion. Some, like mercury and lead, are associated with brain damage. Both the health hazards and the physical hazards of some chemicals make them poor choices for use by schools.



## How are CHEMICALS at school a problem for children?

Children are vulnerable and more sensitive than adults to chemical exposure, due to smaller body size, smaller body organs (some organs, such as the lungs are still under development), and their breathing rate is faster. Some instructional supplies may be inappropriate choices for use by children because children have insufficient dexterity or capacity to deal with the hazards or accidents, or because the school lacks the ability to store, ventilate, or manage the risks. Chemicals can also add to indoor air pollution, increase waste disposal costs, and affect adult occupational health costs.



Children can be exposed to chemicals in schools from a variety of sources. Exposure could result from chemicals used in cleaning and maintenance products, chemicals used or stored for laboratory experiments, pesticides applied inside or outside of the school, or chemicals in school supplies such as art products. Exposure can occur whether a product is freshly applied or misapplied during class, mixed improperly (some common cleaning products, when mixed together can give off deadly gas), used in an undiluted state, stored in an unventilated hall closet, or leaves a heavy residue.

There are three main exposure routes.

First, **inhalation**: (children breathe more air per pound of body weight than adults) aerosols, vapors, fumes, or dusts can be inhaled causing breathing problems, and/or absorbed into the bloodstream and carried to other body organs.

Second, **skin contact**: (children are less able to identify and avoid hazards, and have immature systems that may not detoxify poisons) residues from chemicals can damage skin resulting in dryness, redness, or dermatitis; by burning skin tissue; or absorbed through the skin and carried to body organs.

Third, **ingestion**: (children play on the floor or ground, put their hands in their mouth, and rarely wash their hands before eating lunch or snacks and, thereby can inadvertently drink or eat chemicals via hand-to-mouth contact).



## Stop It Before it Starts

It is easier to prevent pollution and risk to health at the source by buying and using less hazardous or less toxic products. Prevention was established as national policy with the enactment of the federal Pollution Prevention Act of 1990 and as state policy with the enactment of the Illinois Pollution Prevention Act 415 ILCS 115/5(b). Substitution of less or non toxic substances is also an important principle of industrial hygiene. The industrial hygiene ladder of controls recommends that exposures are controlled at the source, such as through substitution, before controlling exposures at the path or at the worker.

## What sorts of CHEMICALS could be a problem?

The following is a partial list of contaminant sources in schools:

- science labs supplies, including mercury
- vocational classes (i.e. auto shop, woodworking, home economics, cosmetology)
- print shops: inks and cleaning fluids, paints, varnishes, glues, and other products which are formulated with solvents
- pesticides, herbicides, due to active ingredients and/or the solvent carriers
- off-gassing of formaldehyde or other chemicals from new products such as carpet padding, floor tiles, wall coverings, furniture, partitions, and generally from plywood, particleboard, strand board, etc.
- custodial products used for cleaning, disinfecting, or polishing of bathrooms, floors, carpets, water fountains, railings, etc.
- ozone and nitrogen oxides from photocopying
- nitrogen oxides, sulfur oxides, formaldehyde, carbon dioxide, and miscellaneous other contaminants from combustion such as cooking, pilot lights, heaters, boilers
- formaldehyde and dusts from carbonless copy paper
- solvents and irritants from mimeographing, laminating
- art supplies
- dry erase markers and dry erase board cleaners
- Construction/interior finishes, paints, varnishes, glues, chemical spills

Schools should take the easiest step to prevent exposures—don't use toxic or hazardous supplies. Schools can purchase 'environmentally preferable' products that are least harmful to human health and the environment. They can also substitute toxic chemicals with less toxic ones. For example, art classes can use baby oil as a solvent instead of turpentine. Chemical exposure can also be reduced by making sure the task is done with adequate ventilation and by using products when the school is unoccupied.

## Are there laws about CHEMICAL HAZARDS in schools?

- The federal "Toxic Substances Control Act" (TSCA) authorizes the U.S. EPA to regulate the manufacture, sale and use of toxic products on a national level. 15 U.S.C. § 2605. While few or no chemicals have been banned, many have had restrictions or special requirements placed on their use and disposal (e.g. lead in paint, chlorofluorocarbons, and PCBs).
- The federal Occupational Safety and Health Act (OSHA) includes occupational exposure limits for a number of chemicals. But these standards are designed for the protection of adult workers, not for the protection of children.
- The Illinois Legislature has addressed the issue of toxic substances in school art supplies with the "Toxic Art Supplies in School Act," 105 ILCS 135. This Act, passed in 1985, prohibits the sale of art supplies containing toxic substances by schools and school districts

for use in kindergarten and grades 1 through 6, and permits the purchase of art supplies containing toxic substances for students in grades 7 through 12 only if the materials are labeled in accordance with the Act. 105 ILCS 135/2.

- As defined in the Act, toxic substances are human carcinogens or potential human carcinogens, or any substance which has a potential for causing a chronic adverse health effect as determined by the American Society for Testing and Materials (ASTM) testing procedures. 105 ILCS 135/3. A list of toxic and non-toxic art supplies is provided in the regulations under the Act at 77 Illinois Administrative Code 848.
- The Toxic Art Supplies in School Act is enforceable by the Illinois Attorney General's Office or any county's State's Attorney.
- Illinois' Environmental Protection Act includes a provision requiring the Illinois Environmental Protection Agency (IEPA) to "develop, implement, and fund (through appropriations for that purpose from the General Revenue Fund) a program to collect school district hazardous educational waste from school districts and schools in the state." 415 ILCS 5/22.47. "Hazardous educational waste" is defined in the Act to include substances used in the instructional curriculum and is basically confined to laboratory wastes and chemicals. It does not include any wastes generated as a result of building, grounds, or vehicle maintenance, or "other non-curriculum activities." 415 ILCS 5/22.47(d). The General Assembly has not provided appropriations to IEPA for the purposes of collecting hazardous educational wastes from schools. However, using funds from other IEPA programs, IEPA has collected hazardous educational wastes from schools in communities where Household Hazardous Waste collections are held

## SOME SIGNS AND SYMPTOMS OF ACUTE EXPOSURE TO CHEMICALS

Structure or Function Affected	Possible Effects
Central nervous system (brain)	Headache, dizziness, lightheadedness, euphoria, drunkenness, slowed response time, lack of coordination
Respiratory system (lungs)	Changes in rate or depth of breathing, irritation, difficulty breathing, feeling of "warmth" in chest
Eyes	Tears, irritation, "burning" feeling, blurred vision, sensitivity to light
Heart or circulatory system	Heartbeat is rapid, slowed, or irregular, change in EKG, change in blood pressure, fainting
Digestive system	Vomiting, nausea, malaise, diarrhea, constipation
Skin	Swelling, redness, rashes, irritation, bumps, boils, increase or decrease in pigmentation

Appendices relevant to  
this Chapter:

1. *Appendix A: Resources*
2. *Appendix B: Examples of Toxic and Hazardous Products Used in Schools*

and from schools that chose to participate in “Safe Chemicals in Education Workshops” sponsored by IEPA. As of July 2003, IEPA has collected hazardous educational wastes from 238 schools. A law passed in 2004 amended the Illinois’ Environmental Protection Act which will prohibit schools from purchasing mercury-containing products for the classroom. This law will take effect on July 1, 2005. The law, 415 ILCS 5/22.23b, states that “no person shall purchase or accept, for use in a primary or secondary school classroom, bulk elemental mercury, chemicals containing mercury compounds, or instructional equipment or materials containing mercury added during their manufacture.” This law does not pertain to products in the school used outside of the classroom nor measuring devices used as teaching aids if no adequate mercury-free substitute exists.

## CHAPTER 3

# PESTS AND PESTICIDES

### Why are PESTS a problem at school?



The most obvious reason why pests are a problem in schools is because schools are densely occupied and often poorly maintained spaces that provide pests access to food, water, and shelter. Pests are nuisances at school since they can carry transmittable diseases and can damage buildings as well. However, rodents, insects and other pests can be harmful in other ways. Their dander, hair, droppings, and other excreta can cause or worsen asthma and allergies.



### How can you recognize PEST problems?

Pest problems are usually easy to see and smell. Ask your child if he or she has ever seen a pest in school. If you are a school employee, look around for yourself, ask the children, and other employees if they have seen any pests or their droppings. If rodent(s) or insect(s) or their droppings have been sighted inside of school, the school has a pest problem. If pests are seen near or on school grounds, an inspection should be made to make sure that the school is not infested and precautions should be taken to prevent infestation in the future.



### Why are PESTICIDES a problem?

Pesticides are products designed to kill living organisms. They work temporarily and need to be re-applied. **The poisons and inert ingredients found in pesticides may be more harmful than the pests themselves.** Pesticides can be absorbed through the skin, inhaled, or swallowed by humans. Children already have proportionately more pesticide exposures than adults. Pesticides have been linked to certain cancers, damage to the central nervous system, neurological and behavior problems, as well as acute poisoning. Between 1993 and 1996, the American Association of Poison Control Centers reported **2,300 pesticide-related exposure incidents involving individuals at schools.**<sup>13</sup> No pesticides have been tested specifically for safety around children or in combination with other chemicals.



### How can pest problems be controlled without relying on pesticides?

Pest problems can be prevented and controlled with an Integrated Pest Management (IPM) program. The most effective way to control pests is to address the cause of the pest problem directly. For example, sealing up openings that allow pests to enter a building is an effective and safe method of pest control. Eliminate the habitat or food source that attracts a pest in the first place and the pest problem can be controlled or prevented. Regular pest monitoring and site inspections are used to evaluate the need for pest control. This approach is called Integrated Pest Management. An IPM program uses least-hazardous pesticides only as a last-resort.

## Data Check:

Between 1993 and 1996, the Association of Poison Control Centers reported **2,300 pesticide-related exposure incidents involving individuals at schools**

## Why Worry?

- √ The ingredients found in pesticides may do more harm than the pests they kill.
- √ Pesticides can be absorbed through the skin, inhaled, or swallowed by humans.
- √ Children have more pesticide exposures than adults.
- √ Pesticides have been linked to certain cancers, damage to the central nervous system, neurological and behavior problems, as well as acute poisoning

## Can parents find out what pesticides are used at school?

Parents can ask for:

- Name of the employee or outside contractor responsible for pest control.
- Verification of pesticide applicator's state license.
- Pesticide application records, including the date, location, pesticide name and target pest of the application.
- Material safety data sheets for pesticides used.
- The school's schedule of applications of all pesticides.



## Are there laws about PESTS in schools?

Under the Illinois Health/Life Safety Code, school facilities are required to comply with standards set by the Building Officials and Code Administrators International (BOCA). BOCA standards include a requirement that all structures be kept free from insect and rat infestation.

## Are there laws about PESTICIDE use?

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) is enforced by the U.S. EPA. It requires all pesticides to be registered with U.S. EPA for sale and use. All containers or other devices used for pesticide application must be labeled with: a list of "active" ingredients, directions for use, methods for application, a description of where application can or cannot be made, warning or caution statement, precautions and treatments for poisoning, whether personal protective equipment is needed for application, ventilation requirements, protections for food, pets, etc., period of time for re-entry after application, potential environmental hazards (including prohibitions against contamination of water, non-target vegetation, and wildlife), and storage and disposal requirements.

Pesticides must be used in accordance with the label. It is against the law to say that a pesticide is safe. A pesticide is "misbranded" if its labeling contains any "false or misleading" statements such as "safe" or "harmless" or "nontoxic to humans and pets."

- The Illinois Structural Pest Control Act (225 ILCS 235/10.2.) requires that, all Illinois public schools notify parents and staff in writing two business days prior to any pesticide application. Notification is not required for the application of (i) an



antimicrobial agent, such as disinfectant, sanitizer, or deodorizer, or (ii) insecticide baits and rodenticide baits. It also states that when economically feasible, each public school in the state must adopt an IPM program that incorporates the guidelines developed by the Illinois Department of Public Health. IPM is a pest management system that “relies to the greatest extent possible on nontoxic, biological, cultural, or mechanical pest management methods, or on the use of natural control agents.” 225 ILCS 235/3.25. It is important to note that pre-scheduled or preventive pesticide applications are *not* part of an IPM program. A study by the Safer Pest Control Project ([www.spcpweb.org](http://www.spcpweb.org)) in 2001 found that 97% of schools reported that they practice IPM and notify parents regarding pesticide applications. The study found that 73% of those schools actually practice IPM, according to analysis of the data from the survey.

- The Illinois Department of Public Health Guidelines for schools can be found on the Department’s web site at [www.idph.state.il.us](http://www.idph.state.il.us) or by calling the Department at (217) 782-5830. The Guidelines recommend that schools apply pesticides “judiciously,” limit the use of sprays or foggers, and apply pesticides only when the building is empty.
- In regards to outdoor pesticide applications, the Illinois Lawn Care Products Application and Notice Act (415 ILCS 65/3(f)) requires that schools maintain a registry of parents and guardians of students who have registered to receive written notification prior to the application of pesticides to school grounds or provide written notification to all parents and guardians of students before such pesticide application. The written notification must be given at least two business days before application of the pesticide and should identify the intended date of the application of the pesticide and the name and telephone contact number for the school personnel responsible for the pesticide application program. This program is administered by the Illinois Department of Agriculture.

### Appendices relevant to this Chapter:

1. *Appendix A: **Resources** for information on how to promote and implement voluntary IPM programs in your school*
2. *Appendix F: **Your Right to Information** for how to use the Freedom of Information Act*



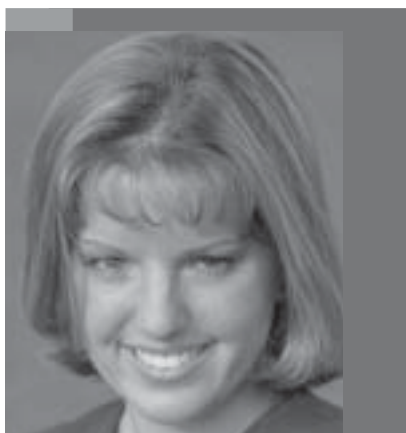
## CHAPTER 4

# MOLDS, MILDEW, FUNGUS, BACTERIA

## Why are MOLDS or other microorganisms in schools a problem?



Many health problems from molds (fungi) and bacteria have arisen from leaks, water damage, flooding, or standing water in the building or its Heating, Ventilation and Air Condition (HVAC) system.<sup>14,15</sup> Standing water or moist areas help the growth of bacteria and fungi which can become aerosolized and inhaled. The cases of “humidifier fever,” or hypersensitivity pneumonitis, have resulted from organisms growing in the water from a humidifier or condensation from an air conditioner. Leaks and water damage or flooding can lead to mold growth in carpets, upholstery, ceiling tiles, and behind walls.



## Why are MOLDS or other microorganisms a problem for children?

There is the potential for disease, especially for sensitive groups such as those with reduced immune system function due to infection with HIV/AIDS, those taking immunosuppressant drugs for treatment of cancer or to prevent organ transplant rejection, or for those on long-term corticosteroid therapy. A few types of mold may be **deadly and have been linked to infant deaths and serious illnesses in children**, such as *Stachybotrys* and *Aspergillus*. There is the potential for allergic reactions such as asthma or dermatitis from exposure to these organisms or their metabolic by-products.



Some children who are exposed to molds have persistent upper respiratory tract symptoms such as rhinitis, sneezing, eye irritation, as well as lower respiratory tract symptoms such as coughing and wheezing.<sup>16</sup> Mold spores and fragments can also produce allergic reactions in sensitive individuals regardless of whether the mold is dead or alive.

Repeated or single exposure to mold or mold spores may cause previously non-sensitive individuals to become sensitive. Repeated exposure has the potential to increase sensitivity.<sup>17</sup>



## Why are MOLDS a problem for school structures?

In addition to the health problems of molds or other microorganisms, there are also serious consequences for school facilities. Molds eat away at building materials like wall board, wood, and fabric. They grow by ingesting, thereby decomposing, the water-saturated materials they live on.

## Mold contamination can be prevented by:

- Avoiding standing water in ventilation system components and taking care of contaminated items;
- Promptly fixing all leaks;
- Preventing rain and snow from entering air intakes;
- Continuously draining cooling coils or other areas of condensation;
- Disinfecting moist areas;
- Using dedicated steam systems rather than water for humidifying;
- Monitoring the use of biocides in cooling tower water for effectiveness.

## Possible signs of mold exposure can include:

Persistent upper respiratory tract symptoms such as...

- √ rhinitis
- √ sneezing
- √ eye irritation

Lower respiratory tract symptoms such as...

- √ coughing
- √ wheezing

## Where would you look for MOLD or other microorganisms at school?

Often, buildings are moldy, but the molds cannot be seen, only detected by scent. Therefore, you must use multiple senses and see, touch, smell, and feel.

Look for signs of leaks, water damage, flooding, or standing water in the building or its HVAC system such as stains on ceilings, window sills, walls, carpets, or floors; buckling of floor tiles; standing water in drip pans of unit ventilators, under ventilation system coils, or under air-conditioners.

It may be necessary to look behind heating units, bookcases, or above ceiling tiles to see where water damage has previously occurred. Sometimes rain or snow can be wind-driven into air intakes. When stained building materials or furnishings or other water sources are found, the moisture source, if active, should be identified and corrected.

Water-damaged materials should be replaced if not completely dry within 24 hours. Roof leaks, for example, are common in schools. If not addressed, the problem can worsen. Often, repair/replacement costs may be prohibitive. At a minimum, some interim repairs should be completed and ceiling tiles should be replaced to ensure the area is completely dry.

In addition to obvious signs of water damage, some other biological sources involve contaminants derived from living organisms, their byproducts, or from parts of dead organisms. Inadequate cleaning and maintenance of the air intakes, filters, and ductwork are significant potential sources of contamination from molds, bacteria, and organic material (including insects and insect debris), all of which are known causes of a variety of symptoms including respiratory infections, eye problems, allergies, and fatigue.

## Is sampling for mold needed?

In most cases, if visible mold growth is present, sampling is unnecessary. Visual inspection is an important assessment tool for molds. **It is more important to identify that a mold problem exists and to address the source of water incursion than to spend time and money trying to identify the specific species of mold.** Visible mold is a sign that action needs to be taken and its presence should start the process of assessing where water is leaking in the building.

Since no EPA or other federal limits have been set for mold or mold spores, sampling cannot be used to check a building's compliance with federal mold standards. Surface sampling may be useful to determine if an area has been adequately cleaned or remediated. Air or surface testing for bioaerosols is typically recommended only after medical or clinical information indicates that building occupants are ill.

Sampling for mold should be conducted by professionals who have specific experience in designing mold sampling protocols, sampling methods, and interpreting results. Sample analysis should follow analytical methods recommended by the American Industrial Hygiene Association (AIHA), the American Conference of Governmental Industrial Hygienists (ACGIH), or other professional organizations.

## Are there laws about MOLD or other microorganisms in schools?

No. Currently there are neither general regulations nor adult occupational exposure limits set for airborne biologicals.

Recommendations from the American Conference of Governmental Industrial Hygienists (1999) are as follows:

- Presence of moldy odors in occupied indoor environments is strong evidence that fungal growth is occurring.
- Persistent presence of water in indoor environments (except in places designed for carriage or storage of water) is likely to lead to fungal growth.
- Presence of accumulations of organic debris, especially bird or animal droppings, is presumptive evidence of fungal contamination.



For more help, see:

*Appendix A: Resources*



# CHAPTER 5

## ASBESTOS

### Why is ASBESTOS a health concern?



**F**or decades, asbestos was used in construction to strengthen products, to provide heat insulation, and to provide fire resistance. Asbestos fibers can have serious effects on the health of anyone who breathes them in. When inhaled, asbestos lodges itself in the lungs or in the intestines.



Studies of occupational exposure of people who are regularly exposed to asbestos have indicated that they may later develop asbestosis, lung cancer, or mesotheliomas of the chest cavity or abdominal cavity, which can be fatal.

Whether asbestos is a concern in the school setting depends upon whether the asbestos is in an airborne form with fibers in the air that can be inhaled. For this to occur, asbestos must be “friable,” that is, the fibers must be loose due to the asbestos-containing material (ACM) having been exposed or damaged.<sup>18-22</sup>

ACM can be managed safely in a school that is in good repair and kept clean. Asbestos is often found around pipes in insulation, and in floor and ceiling tiles. Not all asbestos needs to be removed, but it must be controlled.

In schools, construction and demolition projects can release asbestos. A poorly engineered asbestos removal project may cause greater harm than simply managing asbestos in place.

EPA’s asbestos program for schools (Asbestos Hazard Emergency Response Act, AHERA, <http://www.epa.gov/fedrgstr/EPA-TOX/pre1994/3269-8.pdf>) and its guidance for other building owners is founded on the principle of “in-place” management of ACM.

This approach is designed to keep asbestos fiber levels low by teaching people to recognize ACM and actively manage it. Removal of ACM is not usually necessary unless the material is severely damaged or will be disturbed by a building demolition or renovation project.

### How can you recognize ASBESTOS problems?

Every school, public and private, is required to test for and notify the public of loose asbestos. Remodeling or other types of construction can disturb asbestos fibers that are already in the building and cause them to be released into the air where they can be inhaled.

Unfortunately, asbestos is not easily recognizable. It comes in different shapes, sizes, exterior coverings and colors. Only proper testing can determine if what you see is truly asbestos. Asbestos is often found as insulation around pipes and boilers or as reinforcement in floor tiles.



**Unfortunately, asbestos is not easily recognizable. It comes in different shapes, sizes, exterior coverings and colors. Only proper testing can determine if what you see is truly asbestos.**

If you see insulation that is in poor condition (ripped, peeling, etc), or floor tiles being removed for construction, you should ask school officials to tell you what health protections are in place or what actions will be taken.

Specifically, you should ask if the school contains asbestos and ask to see the asbestos management plan for the school (AHERA).

## Are there laws about ASBESTOS?

Yes, but no exposure standards have been set for children.

- There are federal, state and local laws that act to reduce the risk of asbestos exposure in schools. The Asbestos Hazard Emergency Response Act (AHERA) is a federal law administered by the U.S. EPA (40 CFR Part 763). These regulations specifically discuss the management of ACM in schools.

Asbestos does not have to be removed but must be managed in a safe manner. Every Illinois school must have an AHERA report.

- AHERA requires that parents, guardians, and staff be notified annually about the existence of the asbestos management plan and its availability for inspection during normal business hours. This annual notification must also include a brief explanation of the school's asbestos activities.
- Illinois' Asbestos Abatement Act, 105 ILCS 105, <http://www.legis.state.il.us/legislation/ilcs/ch105/ch105act105.htm>, and regulations on Asbestos Abatement for Public and Private Schools, 77 IAC Part 855, <http://www.idph.state.il.us/rulesregs/77-0855.htm>, focus on requirements for the training and certification of workers who remove or repair asbestos problems and identify work practices for abatement.

State laws and regulations also require school districts in Illinois to maintain records of all asbestos abatement projects, provide a framework for state grants to local school districts to help pay for their asbestos abatement projects, and prohibit the removal of friable asbestos when students or other school personnel are in the building, unless appropriate safety measures are being used.



## Could a parent find out if asbestos is an issue in the school?

Ask to see the school's AHERA report and/or the school's Asbestos Management Plan if available. For starters, questions about the report should be addressed to the school's asbestos designee. If you are refused the report, see *Appendix F: **Your Right to Information*** for guidance on how to use the *Freedom of Information Act*.

### Appendices relevant to this Chapter:

1. *Appendix A: **Resources***
2. *Appendix F: **Your Right to Information*** for guidance on how to use the *Freedom of Information Act*



## CHAPTER 6

# LEAD

### Where is LEAD in schools?

### How could LEAD exposure occur?



There are three main ways lead gets into the school environment.<sup>23-26</sup> Old lead-based paint can be under coats of newer, non-lead-based paint; soil and drinking water can be contaminated; and lead can be present in instructional supplies.



Paint containing lead at a concentration greater than 0.06% by weight was banned for residential use in 1978, but some schools used old paint well after that date. If your school was built before 1978, it could very well have lead paint underneath newer paint. Even if your school has been painted since 1978, if the previous paint layers have not been properly removed, lead paint may be exposed through the chipping or peeling of the newer layers.<sup>27</sup>

Lead **paint** becomes dangerous when it begins to flake off and turn to **dust**. Paint in poor condition—chipping or peeling from damaged walls—poses the greatest health hazard. Any surfaces covered with lead-based paint that are subject to friction (floors, windows, cabinets) are likely to generate lead dust. Lead-based paint on interior and exterior windows is of particular concern because the repeated opening and closing of windows creates lead dust. Lead-based paint was used on both interior and exterior surfaces; so, in addition to exposure to chipping, flaking, or peeling paint and its resulting dust inside the school, deteriorating paint on the outside of the building can contaminate the soil along outside walls near air intakes and in play areas. Even paints used for rust-protection on metal such as railings may contain lead chromate. **This is why occupant health protection during school repairs and renovations are so important, and why building maintenance is critical to health protection.**

Lead can occur in **drinking water** from corrosion of lead solder and brass faucets and fixtures, as well as corrosion of lead service lines (estimated at 20% of public water systems). Tests may be required on water samples. Ask your school if regular water quality tests are conducted on school water supply lines *and at the tap*. If so, ask to see the results.

Lead could be in **school supplies** for projects such as jewelry-making, ceramic glazes, printing inks and type, and crayons. Also consider exposures in vocational education, such as lead solder in automobile radiators and lead acetate used in hair coloring in cosmetology.

### Why is LEAD harmful, especially for children?

Lead is harmful because it is a poison that can be absorbed by the body either through the lungs when it is breathed, or through the digestive system when it is

## Data Check

When lead enters the digestive tract:

Adults absorb

10% - 15%

Children absorb

40% - 50%

swallowed and is carried to all organs of the body.<sup>23-26</sup> When we inhale or eat lead dust or drink contaminated water, the lead is absorbed by our bodies. For lead that enters the digestive tract, an adult can absorb 10-15% of the lead, but a child can absorb 40-50%. Some people are more sensitive to lead exposure such as those with poor nutrition or iron or zinc deficiency. Lead serves no known purpose in the body and is therefore always considered a contaminant.

Elevated blood lead levels have been associated with problems in virtually every body organ system, including neurological disorders. At high exposures, these effects can be permanent. These disorders in children include attention deficit, hyperactivity, aggressive and impulsive behavior, delinquency, reduced IQ, and mental retardation. Younger children are especially vulnerable to the harmful effects of lead. New research also suggests health problems when pregnant mothers are exposed to lead; this can be a point of concern for pregnant teens at school.

### Are there laws about LEAD?

Federal laws don't require schools specifically to test for lead in paint, soil, or dust.

However, there are federal laws about lead in school drinking water. 42 United States Code (U.S.C.) 300j-24 and 42 U.S.C. 300j-25 are set up specifically to help schools identify lead problems in their water. These laws are part of the Lead Contamination and Control Act of 1983 which required a one-time assessment of lead in drinking water and provision of data. However, there are no on-going requirements of this Act. In addition, the sampling protocol for this one test of lead at that time was different than what we now require for Public Water Systems. Unless a school qualifies as a Public Water System, then they have no requirements under the Safe Drinking Water Act.

Under 42 U.S.C. 300f, the Safe Drinking Water Act regulations contain the maximum contaminant level goal for lead as zero mg/L with an action level of 0.015 mg/L. Also, the Safe Drinking Water Act Amendments of 1993 prohibit the use of pipe, solder, or flux in public water systems that are not "lead-free;" solder may not contain more than 0.2 % lead; pipes and pipe fittings may not contain more than 8.0% lead.

- Illinois' Lead Poisoning Prevention Act, 410 ILCS 45/3, applies only to child care facilities and public schools frequented by children six years of age and younger, such as those schools that have kindergarten and/or preschool programs. Thus, it applies to most public elementary schools. The Act prohibits the use or application of "lead-bearing" substances within or upon a school. It also requires lead screening for all children under the age of six who reside in "high risk areas." These areas are listed by zip code in the appendix to 77 Ill. Adm. Code Part 845. Regulations under the Act require the licensing of lead abatement workers and set a standard for lead in dwellings and child care facilities of 0.5% lead by weight



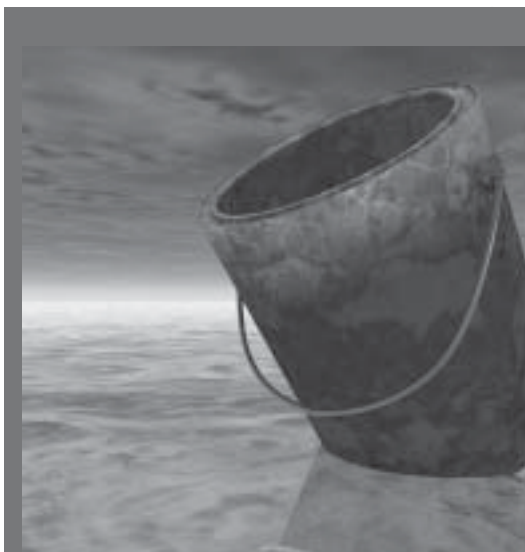
### Problems associated with elevated lead levels in the blood:

- ✓ Reduced IQ
- ✓ Mental Retardation
- ✓ Attention deficit
- ✓ Hyperactivity
- ✓ Aggressiveness
- ✓ Delinquency

### And More...

on exterior surfaces and 1000 mg lead/gram of soil. 77 Ill. Adm. Code Part 845.

- Currently, there is no state law that requires the inspection for lead in any public buildings, including schools. However, if a school decides to get a lead inspection, that inspector must be licensed and trained through the Illinois Department of Public Health. Check with your local County Department of Health first for further information.



**Paint containing lead at a concentration greater than 0.06% by weight was banned for residential use in 1978, but some schools used old paint well after that date.**

## Could a parent find out if the school has a LEAD problem?

A parent can ask to see:

- Results of any lead investigation done prior to the construction or remodeling work.
- Results of any lead hazard assessment or inspection (if performed).

Appendices relevant to this Chapter:

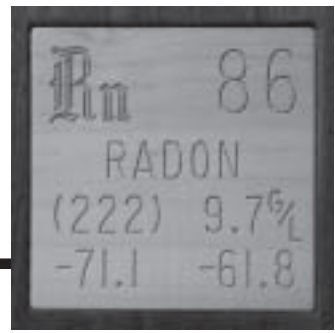
1. *Appendix A: Resources*
2. *Appendix F: Your Right to Information for guidance on how to use the Freedom of Information Act*



## CHAPTER 7

# RADON

### Is RADON dangerous?



**R**adon is a radioactive gas that can cause lung cancer.<sup>28-31</sup> The U.S. EPA ranks indoor radon among the most serious environmental health problems facing us today. After smoking, it is the second leading cause of lung cancer in the United States. Information on radon exposure has come principally from studies of underground miners; it is important to recognize that radon exposures in some homes have been as great as those in certain mines. An individual's risk of getting lung cancer from radon depends mostly on three factors: level of radon, duration of exposure, and his/her smoking habits.



It is important to note that no studies have examined whether or not a child has a risk of developing lung cancer in adulthood after exposure to radon. It has yet to be determined whether the risks of lung cancer derived from studies of men who were occupationally exposed to radon in the underground mines could be applied to children.

However, it is plausible that exposure to radon occurring before age 20 might have greater effects than exposure at later ages, as this has been seen for radiation exposure in Japanese atomic bomb survivors.

**Children may be more sensitive than adults to radon exposure, since their lung cells are rapidly dividing, their lungs are smaller, and their breathing rate is faster.**



### Where would you look for RADON in a school?

Radon is a colorless, odorless, naturally occurring gas that seeps into buildings from the surrounding soil. It may be found in the ground or below ground level spaces of buildings. In some cases, well water may be a source of radon with exposure happening as the gas is released into the air when water is either aerated, running, or heated. Municipal water supplies are normally aerated, which releases radon gas from the water before it enters the building of the user.

Radon has been detected, at varying levels, in every county in Illinois. In Cook County, for example, 17 percent of homes that were tested demonstrated radon levels in excess of the federal "action level" of 4 pCi/L, mostly in basements.

The Illinois Emergency Management Agency Division of Nuclear Safety (IDNS) has information on radon levels by county in Illinois on its web site: <http://www.state.il.us/idns>.



## Data Check

The U.S. Environmental Protection Agency recommends:

All schools test for radon

How many schools have done so to date?

20%

## How do you determine if your school has a RADON problem?

The only way to determine if a problem exists is to test for it. Having your school tested for radon is simple and inexpensive, and is something you may want to discuss with school administrators. Because as real as the threat of radon is, the good news is that the problem can be solved.

Illinois has specific laws on radon, and given the school environment, it would be best for the school to be tested by a licensed radon measurement professional. These individuals are trained and agree to follow standards that ensure effective radon reduction. IDNS has a list of licensed individuals.

The U.S. EPA has also published guidance that is available free to schools throughout the country. See *Appendix A: Resources*

## What happens if your school has a RADON problem?

Fortunately, even if your school does fail a radon test, the problem can be corrected. Proven techniques are available that will lower radon levels and lower risks of lung cancer from radon exposure. For example, exposure can be reduced by increasing ventilation and reducing the seepage of radon to the school by:

- Sealing off cracks through which radon can enter foundations
- Creating negative pressure under the basement floor
- Prohibiting the use of building materials containing excessive radium

## Are there laws about RADON in school buildings?

There are no laws, regulations or standards to protect adult or child health.

**No federal or state standards define the amount of radon that is safe.**

The U.S. Congress has set a long-term goal that indoor radon levels be no more than outdoor levels; about 0.4 pCi/L of radon is normally found in the outside air.

The U.S. EPA recommends that all schools nationwide be tested for radon.<sup>28</sup> There is currently no state program to conduct testing. To date, approximately 20% of schools nationwide have done some testing.

**A nationwide survey of radon levels in schools estimates that nearly one in five has at least one schoolroom with a short-term radon level above the action level of 4 pCi/L (picocuries per liter) – the level at which the**

## Radon is:

- √ a colorless, odorless, naturally occurring gas
- √ found in the ground underneath some building
- √ the second leading cause of lung cancer in the United States



**U.S. EPA recommends that schools take action to reduce the level.** This level is based on a yearly average measurement.

The U.S. EPA action level figure was **calculated for adults**. However, this level has been set as guidance only. It is a recommended action level only and is not considered to be a health protection “standard.” The U.S. EPA estimates that more than 70,000 schoolrooms in use today have high short-term radon levels.

## Could a parent find out if RADON is a problem in the school?

A parent can ask to see:

- Results of radon testing in school building’s air.
- Results of radon testing in drinking water.

For more help, see:

*Appendix A: **Resources***



## CHAPTER 8

# EXHAUST FROM DIESEL ENGINE VEHICLES

## Why are DIESEL ENGINE VEHICLES a problem?



School buses are considered the safest means for children to get to and from school, at least as far as accidents are concerned.<sup>32</sup> However, the pollution from diesel engine buses poses risks to the public that tarnish the reputation of the familiar yellow school bus. Dozens of studies have documented that exposure to air pollution may cause or exacerbate a host of health problems, including cancer and asthma, and may even be linked to premature death. The exhaust from engines burning either gasoline or diesel fuel involves exposure to some unburned fuel and to a variety of both gases and particles<sup>33-40</sup>:



Component in Exhaust	Potential Adverse Health Effects
Carbon Monoxide	Reduction in the oxygen-carrying capacity of the blood from carbon monoxide; producing headaches, flushing of the face, heart palpitations, dizziness, fatigue, breathlessness on moderate exertion
Nitric Oxide	Methemoglobin formation and central nervous system affected
Nitrogen Dioxide	Pulmonary irritation
Sulfur Oxides	Irritation of the mucous membranes and eyes
Hydrocarbons (such as ethylene, formaldehyde, methane, benzene, phenols, 1,3-butadiene, acrolein)	Irritation of the mucous membranes and eyes from phenol, formaldehyde, and acrolein
Soot (Particles)	It has been estimated that as many as 18,000 different substances can be adsorbed onto soot including compounds such as polynuclear aromatic hydrocarbons (PNAs) and polycyclic aromatic hydrocarbons (PAHs) known to cause cancer. There is also the increased lung burden from particles causing impaired pulmonary function, decreased lung capacity, decreased diffusing capacity, decreased expiratory flow, pulmonary inflammation, increased mortality from infection, and increased severity of infection.

## Data Check

A child traveling inside a diesel school bus can be exposed to airborne particulate concentrations of five to fifteen times higher than background levels.

## Why are DIESEL ENGINE VEHICLES a problem for children?

Due to the very small size of the soot particles in vehicle exhaust, the particles float in the air longer. Also, their large surface area can adsorb other gaseous emissions and carry them into deep regions of the respiratory system. Children are more sensitive than adults to chemical (including carcinogen) exposure, since their lung cells are rapidly dividing, their lungs are smaller, and their breathing rates are faster.

## Can OUTDOOR AIR affect the health of our children?

Idling buses waiting for children in the schoolyard have the potential to create localized air pollution that far exceeds ambient outdoor levels reported from State monitoring efforts. Pollution from these sources can cause or exacerbate a variety of respiratory ailments, including asthma.

In addition to elevated pollution levels outside a running vehicle, studies have shown that children traveling inside a diesel engine school bus are exposed to airborne particulate concentrations 5-15 times higher than background levels.

## What can we do about VEHICLE EXHAUST?

All schools have the ability to limit children's exposure to vehicle exhaust. Make sure your school promotes idle-free zones where students wait outside for rides. Also, work with your school administration to move vehicle storage and repair, bus loading zones, and idling areas away from the school building so that exhaust will not enter the indoor environment.

Additionally, new fuels and technologies are currently available to cost-effectively reduce the exhaust from diesel engine buses. Contact the Healthy Schools Campaign to learn about recent activities in improving fuel and engine pollution control technologies for school buses.

## Can INDOOR AIR be affected by contaminants coming in from outside?

Good indoor air quality requires good quality incoming air. Motor vehicle exhaust enters schools when buses and other vehicles idle near entrances, under open windows, or by air intakes. **Make sure your school keeps idling time to a minimum and moves vehicle storage and repair, bus loading zones, and idling areas away from the school building.**



## Are there laws about IDLING VEHICLES?

There are no laws, regulations, or standards to protect adults or children.

However, the Illinois State Board of Education adopted some requirements regarding the placement of outside air intake openings. Intake openings must be located a minimum of 10 feet from any hazardous or noxious contaminant, such as parking lots and loading docks. If a source of a contaminant is located within 10 feet of an intake opening, the opening must be located a minimum of two feet below the contaminant source. See 401.7.1, Intake Openings, in the 1996 International Mechanical Code Commentary.

- **Attempts to prohibit idling school buses near buildings under general Illinois law concerning “air pollution” have been unsuccessful.**
- New federal laws mandating stricter tailpipe standards for school buses will not come into effect until 2006 and will then only apply to new buses. See 40 CFR Parts 69, 80 and 86.
- With respect to school employees, the National Institute for Occupational Safety and Health (NIOSH), the research arm of OSHA, is currently recommending that whole diesel exhaust be regarded as a potential occupational carcinogen based upon findings of carcinogenic and tumorigenic responses in rats and mice. NIOSH does recommend that all available preventive efforts (including available engineering controls and work practices) be vigorously implemented to minimize the exposure of workers to diesel exhaust and that exposure be reduced to the lowest feasible concentration. The health effects to be prevented include lung cancer, respiratory system effects, and eye irritation. **Clearly, children should not be exposed to diesel exhaust fumes.**

For more help, see:

*Appendix A: Resources*



## CHAPTER 9

# RENOVATION, CONSTRUCTION, AND STRUCTURE

## Why are RENOVATION AND CONSTRUCTION projects dangerous?



**R**enovation and construction projects conducted while school is in session often present unnecessary risks to students and staff.



Potential hazards associated with school construction from which construction workers are guaranteed protection but school occupants may not be include: lead contaminated debris, asbestos fibers, dust contaminated with lead/asbestos/molds; fumes from construction (heavy equipment, paints, varnishes or urethanes); fumes from new furnishings and equipment (copiers, carpets, paint, furniture, new particle board or plywood); noise (jackhammers, power saws, bulldozers); risk of injury from moving equipment; improperly stored supplies; demolition and construction debris; failure to maintain fire safety barriers; access to the building by non-school workers; and other serious issues.

Often, the effects of fumes from new carpeting, freshly applied paint, and new furniture are ignored or forgotten; it is important to remember that they are asthma triggers and indoor air pollutants.



School occupants at higher risk for health problems include all children, pregnant women, the elderly, and those with chronic illnesses or impaired immune systems.

## Why are CRACKS in walls, floors, and ceilings dangerous?

Cracks and other weaknesses in buildings are far too common in schools today. The inherent danger in having cracks in walls is obvious: buildings should be solid, and building occupants should not have to worry about the ceiling falling down on them. A more subtle issue is the dust that results from broken walls. Dust and other small particles can make asthma and other breathing problems worse. Further, cracks in buildings provide openings through which pests can enter and find shelter to breed. Cracks may also be indicative of water damage and could serve as an opening for water/moisture to enter.



## Where should you look for STRUCTURAL PROBLEMS?

It is important to look for cracks not only on classroom walls, but on the ceiling and floor as well. Look inside the school building as well as at the exterior of the

## Potential environmental hazards associated with construction:

- √ Lead dust
- √ Asbestos fibers
- √ Mold-laden dust
- √ Noxious fumes
- √ Fire-hazards

## And More...



building. Cracks emerging from the building foundation and climbing up the outside walls can be cause for concern.

## Are there standards for the design and CONSTRUCTION of healthy schools?

In order to address the shortcomings of existing school facilities and create healthier environments for students, many state and local leaders have begun building “high performance” schools.

High performance schools achieve these goals by using a whole building, integrated design strategy that incorporates the best of today’s ideas and technologies. From the beginning of the design process, each of the building elements (windows, walls, building materials, air-conditioning, landscaping, etc.) is considered part of an integrated system of interacting components.

Choices in one area often affect other building systems; integrated design leverages these interactions to maximize the overall building performance.

## Are there laws about RENOVATION AND CONSTRUCTION in schools?

- As discussed in Chapter 5 (Asbestos), the Illinois Asbestos Abatement Act requires that asbestos response actions that involve the removal of friable asbestos take place when students and other school personnel are out of the building, unless appropriate safety measures have been taken. See 105 ILCS 105/12.
- The Illinois Health/Life Safety Code requires a building permit before any construction activities take place in a school building. 23 IAC 180.200. Construction activities include reconstruction, repair and renovation projects, other than “minor repairs.” 23 IAC 180.30.
- An Executive Order setting forth voluntary guidelines for state agencies sets standards for environmentally-friendly renovations, but is not applicable to school buildings. The 2001 Order recommends the use of zero or low VOC (volatile organic compound) paints that meet the “Green Seal” standard, and the use of carpeting that meets the Carpet and Rug Institute’s Indoor Air Quality carpet test. 25 Ill. Reg. 16327 (December 21, 2001). See *Appendix A: Resources*.

If a school is interested in adopting best practices, such as protecting occupants in buildings under renovation, there are other states they can



research. For example, New York, New Jersey, and Massachusetts all have regulations.

## Are there laws about STRUCTURAL PROBLEMS in school buildings?

- The Illinois Health Life Safety Code requires annual inspections by the Regional Superintendent of all public schools outside of Chicago Public Schools. Ten-year inspections by licensed design professionals are also required. One might presume that these inspections would reveal the nature, cause and need for repair of any structural problems discovered in the course of the inspection. However, there is no specific requirement that corrections be made unless a “dangerous or hazardous condition” is found. See 23 IAC Part 180.
- The Chicago Public Schools are governed by the Chicago Building Code.

## Could a parent find out about the school’s STRUCTURAL PROBLEMS?

A parent can ask the school administration to see the results of the annual and/or decennial safety inspection reports. If your request is denied, see *Appendix F: Your Right to Information to use the Freedom of Information Act*.

### Appendices relevant to this Chapter:

1. *Appendix A: Resources*
2. *Appendix F: Your Right to Information for guidance on how to use the Freedom of Information Act*



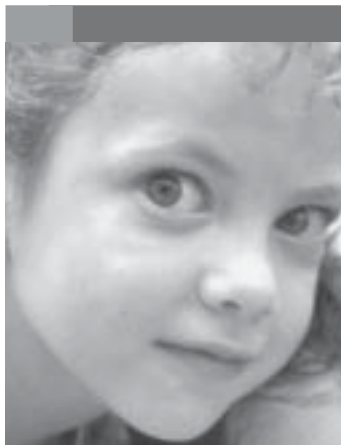
## CHAPTER 10

# POLYCHLORINATED BIPHENYLS (PCBs)

### What is the problem with PCBs in light fixtures?



Many schools in Illinois have light ballasts containing Polychlorinated Biphenyls, or PCBs. The PCBs are contained within the light ballasts' capacitors and in the ballasts' potting material, which is used for insulation. Until the late 1970s, PCBs were commonly used as insulators in electrical equipment because they have a high tolerance to heat, do not burn easily, and are non-explosive.



As long as the PCBs remain in the ballasts and potting material, they do not pose a health risk or environmental hazard.

However, as they age, the ballasts degrade, increasing the risk of leaks or even fires, which would pose a health and environmental hazard. The hazard can be worsened by mishandling the incident.

### Why do PCBs present problems for schools?

PCBs are very stable chemical compounds that do not readily break down. Because of this, they may remain in the body, causing long-lasting toxic effects over many years. For this reason, it is critical to minimize any potential exposure to them.

The EPA banned the manufacture and import of PCBs to the U.S. in 1979 because of their toxic effects. They also banned the processing or use of PCBs, except in totally enclosed equipment.

However, no state or federal regulations precluded the continued **use** of the older PCB ballasts. Therefore, a large number of PCB ballasts are still believed to be in use in Illinois schools.

### What are the health effects of PCBs?

The EPA has classified all PCBs as probable human carcinogens (cancer-causing substances). Evidence suggests a possible association between PCB exposure and liver cancer. PCBs also have significant ecological and human health effects other than cancer.

The most likely way that staff may become exposed to PCBs from light ballasts is through breathing contaminated air, touching PCB oil, or touching PCB-contaminated materials after a ballast leak or fire. No information is available on



## Long-term Effects of PCB exposure include:

- Effects upon the nervous and reproductive system, immune system suppression;
- Hormone disruption;
- Respiratory tract symptoms;
- Gastrointestinal effects;
- Mild liver effects; and
- Effects on the skin and eyes such as chloracne, skin rashes, and eye irritation.

the short-term effects of PCBs in humans. However, long-term effects can occur at any time after exposure and may last for months or years (see sidebar at left). Infants or mothers exposed to PCBs can experience developmental effects impairing movement, visual recognition memory, and short-term memory. PCBs may also be passed onto infants through their pregnant or nursing mothers.

## The Solution: Lighting Retrofits

The EPA recommends removing PCB-containing ballasts as part of a complete lighting retrofit. A complete lighting retrofit includes removing old fluorescent tubes as well as ballasts, and replacing the entire lighting fixture with newer, more energy-efficient fixtures. Replacing the older ballasts with newer lighting technology improves lighting quality, distributing the light more uniformly and thus providing a more comfortable and productive learning environment. The newer lighting technology also increases energy efficiency which means cost savings for the school in the long term.

## Should Light Ballasts in Your School Be Removed?

- √ **Your school was built before 1979.**
- √ **Your school has not had a complete lighting retrofit since 1979.**

If these statements apply to your school, then the answer is most likely yes, your light ballasts probably contain PCBs and should be removed. PCB-free light ballasts manufactured after 1979 are required to have the statement “No PCBs.” Any building built before that time is likely to have PCB-containing ballasts if it has not recently undergone a complete lighting retrofit (all light fixtures in the school were upgraded).

Also, PCB-containing light ballasts were allowed to be used in fluorescent lights after 1979 if the ballasts had been manufactured before the 1979 ban. Thus, schools built after 1979 that have not undergone a complete lighting retrofit could have PCB-containing light ballasts in their fluorescent light fixtures as well. To determine whether your school has PCB-containing ballasts, conduct a visual inspection of a representative number of light fixtures (not just the tubes).

## How Should the Old Ballasts be Safely Disposed?

Safe disposal of the old ballasts is critical. Because the ballasts contain PCBs, the waste ballasts should be handled as hazardous waste. The Toxic Substances Control Act (TSCA) regulates how PCBs, including ballasts that contain PCBs, should be disposed. All ballasts containing PCBs must be packaged in a PCB-approved container, marked properly, and shipped by an authorized PCB transporter. All *leaking* PCB-containing ballasts must be destroyed through high temperature incineration.



TSCA allows several disposal options for non-leaking ballasts, including disposal in a hazardous waste landfill or recycling.

## What Postponing a Lighting Retrofit Could Mean

As PCB-containing light ballasts age, the chance that they will leak or catch fire increases. This risk is compounded by the fact that there is virtually no way to detect whether ballasts are leaking or about to catch fire by simply looking at the light fixture. One school in Oregon found this out the hard way when a light ballast leaked PCB-containing oil over books, desks, and other school equipment. After the EPA became aware of this incident, they examined other light ballasts in the school and found more leaking ballasts potentially exposing students and staff to PCBs.

During the inspection, the EPA also learned that the school district was in the process of remodeling and upgrading light fixtures district-wide. Unaware that the old fixtures contained PCBs, the district had been taking them to another local school to be dismantled. The EPA discovered that the old fixtures were not being handled properly and that the leaking PCB ballasts were actually being stored on the school's playground. In addition, the workers handling the leaking ballasts were not trained in the proper handling of hazardous materials. Lack of awareness of the problem and mishandling of the response needlessly exposed students, staff, and maintenance workers to PCBs. The school district has spent more than \$250,000 to clean up spilled PCBs, and is facing possible monetary penalties for improper storage and handling of PCB wastes.

## Are there laws about PCBs in schools?

- The federal Toxic Substances Control Act (TSCA) authorizes the U.S. EPA to regulate the manufacture, sale and use of toxic products on a national level and sets disposal guidelines for PCBs.
- Disposal of materials containing over 50 parts per million (ppm) of PCBs is regulated under the federal TSCA. The IEPA regulates the disposal of materials containing between 2 ppm to 50 ppm PCBs. For more information, contact the IEPA's Bureau of Land Permit Section at 217-524-3300.
- There is no known Illinois law regulating the use of PCBs. The Illinois Department of Public Health issued a one-page "Safety Alert" in 1991 suggesting schools do an inventory of lighting fixtures and possible PCB ballasts. However, the Department's Safety Alert does not require that schools hire professionals to deal with PCB leaks.

Text adapted from US EPA Region 9, "Removing PCBs from Light Fixtures: Protecting Students from Hidden Dangers," EPA 909B-00-003, May 2001

## Is there funding to help schools with lighting upgrades?

Yes, the Illinois Clean Energy Community Foundation has funding for schools to upgrade their lights. While these grants are aimed at improving energy efficiency, this program, in effect, eliminates PCB exposure by replacing old lights. For more information, call 312-372-5191 or visit their Web site at [www.illinoiscleanenergy.org/apply/schoolapp.htm](http://www.illinoiscleanenergy.org/apply/schoolapp.htm).

For more help, see:

*Appendix A: Resources*



# APPENDIX A

## RESOURCES



The following listings are for government agencies, organizations, unions and other sources anyone can call for help with an environmental problem at school.



### RESOURCES FOR PARENTS

Your school's Principal: \_\_\_\_\_

Your school's Superintendent: \_\_\_\_\_

Your school's Director of Buildings  
and Grounds or Head Custodian: \_\_\_\_\_

#### **U.S. EPA Region 5**

(includes Illinois)

1-800-621-8431 or 312-353-2000

#### **Illinois EPA**

1021 North Grand Avenue East

Springfield, Illinois 62794

217-782-3397 (phone)

217-557-2125 (fax)

[www.epa.state.il.us/green-illinois/green-schools/index.html](http://www.epa.state.il.us/green-illinois/green-schools/index.html)

#### **Illinois Waste Management and Research Center**

One East Hazelwood Drive

Champaign, Illinois 61820

217-333-8940 (phone)

217-333-8944 (fax)

[www.wmrc.uiuc.edu](http://www.wmrc.uiuc.edu)

#### **Illinois Department of Public Health**

535 West Jefferson Street

Springfield, Illinois 62761

217-782-4977 (phone)

217-782-3987 (fax)

[www.idph.state.il.us/home.htm](http://www.idph.state.il.us/home.htm)

#### **Illinois State Board of Education**

100 North 1<sup>st</sup> Street

Springfield, Illinois 62777

866-262-6663

[www.isbe.state.il.us](http://www.isbe.state.il.us)



## RESOURCES FOR SCHOOL PERSONNEL

### Other Parental Resources:

#### National Education Association's Health Information Network

[www.nea.org/health](http://www.nea.org/health)

**Parenting books**, including *Guide to Your Child's Allergies and Asthma*, are available from the American Academy of Pediatrics.

[www.aap.org/pubserv/](http://www.aap.org/pubserv/)

#### How to obtain MSDS information:

- MSDS Frequently Asked Questions is a site produced by the Interactive Learning Paradigms Incorporated  
[www.ilpi.com/msds/faq/parta.html#whatis](http://www.ilpi.com/msds/faq/parta.html#whatis)
- University of Vermont Safety Information Resources on the Internet that allow you to search for MSDSs by manufacturer  
<http://siri.uvm.edu>

Your union health and safety officer or President: \_\_\_\_\_

#### Illinois Department of Labor, Safety Inspection and Education Division

[www.state.il.us/agency/idol/forms/pdfs/training.pdf](http://www.state.il.us/agency/idol/forms/pdfs/training.pdf)

The Safety Inspection and Education Division offers a free advisory inspection program for public employers. Upon request, they will evaluate your work site to determine compliance status. Advantages include:

- No monetary penalties
- Predetermined inspection schedule
- No inspection fee
- Removal from the general inspection rolls for one year

To request an inspection of your facility, contact:

- Chicago Area – 312-793-1964
- Central Illinois – 217-782-9386
- Southern Illinois – 618-993-7092

#### Illinois Education Association

100 East Edwards Street  
Springfield, Illinois 62704-1999  
217-544-0706  
[www.ieanea.org](http://www.ieanea.org)

#### Illinois Federation of Teachers

P.O. Box 390  
Westmont, Illinois 60559  
630-571-0100 (phone)  
800-942-9242 (phone)  
630-571-1204 (fax)  
[www.ift-aft.org](http://www.ift-aft.org)

#### Service Employees International Union, Local 1

[www.seiu1.org](http://www.seiu1.org)

#### Service Employees International Union, Local 73

[www.seiu73.org](http://www.seiu73.org)

#### Occupational Safety & Health Administration

200 Constitution Avenue, NW  
Washington, D.C. 20210  
[www.osha.gov](http://www.osha.gov)



**University of Illinois-Chicago**  
**School of Public Health Great Lakes Centers**  
Healthy School, Healthy You Conference  
<http://128.248.232.70/glakes/ce/courseDetail.asp?GID=112>

**Illinois EPA**  
1021 North Grand Avenue East, P.O. Box 19276  
Springfield, Illinois 62794  
217-782-3397 (phone)  
217-557-2125 (fax)  
[www.epa.state.il.us/green-illinois/green-schools/index.html](http://www.epa.state.il.us/green-illinois/green-schools/index.html)

**Illinois Waste Management and Research Center**  
One East Hazelwood Drive  
Champaign, Illinois 61820  
217-333-8940 (phone)  
217-333-8944 (fax)  
[www.wmrc.uiuc.edu](http://www.wmrc.uiuc.edu)

**Greening Schools**  
A Project by the Illinois EPA and Illinois Waste Management Research Center  
[ilgs@wmrc.uiuc.edu](mailto:ilgs@wmrc.uiuc.edu)  
[www.greeningschools.org](http://www.greeningschools.org)

**Illinois Department of Public Health**  
535 West Jefferson Street  
Springfield, Illinois 62761  
217-782-4977 (phone)  
217-782-3987 (fax)  
[www.idph.state.il.us/home.htm](http://www.idph.state.il.us/home.htm)

## RESOURCES FOR PEDIATRICIANS

**Pediatricians** who are members of the *American Academy of Pediatrics* (AAP) may call AAP and request a free consultation from environmental health clinicians on cases where exposures to lead, mold, pesticides, asbestos, and other hazards are suspected of causing health problems.

**Primary health care providers** may call the federally-designated Pediatric Environmental Health Specialty Units for a referral or help with a site-specific concern. In Illinois, primary care health providers can contact Great Lakes Center for Children's Environmental Health, at Stroger Cook County Hospital, Chicago, Illinois, (312)864-5520.

The Academy of Pediatrics' Committee on Environmental Health published "The Green Guide" to Pediatric Environmental Health, 1999. Available by calling: (847) 228-5005.





## RESOURCES BY TOPIC

### INDOOR AIR QUALITY

#### U.S. EPA

Indoor Air Quality Info Clearinghouse (IAQ INFO)

P.O. Box 37133

Washington, D.C. 20013-7133

1-800-438-4318

301-588-3408 (fax)

iaqinfo@aol.com

www.epa.gov/iaq

National Hispanic IAQ Hotline: 1-800-725-8312

Region 5's IAQ website: [www.epa.gov/region5/air/radon/indoorair.htm](http://www.epa.gov/region5/air/radon/indoorair.htm)

The EPA Region 5 Indoor Air Program assists schools in solving and preventing IAQ problems. Program staff provide information on EPA's IAQ Tools for Schools Action Kit (TfS), training opportunities, and other materials. Contact the EPA Region 5 IAQ Coordinator for more information:

#### **EPA Region 5 IAQ Coordinator**

77 West Jackson Boulevard (AE-17J)

Chicago, Illinois 60604

1-800-621-8431 (Region 5 states only) or 312-353-2205

EPA TfS Action Kit/Support Materials (obtain through IAQ INFO, EPA Region 5, or Internet)

- *IAQ Basics for Schools*, (EPA 402-F-960004) or [www.epa.gov/iaq/schools/pubs.html](http://www.epa.gov/iaq/schools/pubs.html)
- *IAQ TfS Action Kit*, (EPA 402-K-95-001) or [www.epa.gov/iaq/schools/pubs.html](http://www.epa.gov/iaq/schools/pubs.html)
- *IAQ TfS: Taking Action and Ventilation Basics* (video), (EPA 402-V-98-001)
- *IAQ TfS: Actions to Improve Indoor Air Quality*, (EPA 402-F-99-008)
- *IAQ TfS: Bulletins*, (EPA 402-F-00-002 & EPA 402-F-99-00) or [www.epa.gov/iaq/schools/pubs.html](http://www.epa.gov/iaq/schools/pubs.html)
- *IAQ TfS Road Map*, (EPA-402-F-00-011) General information for TfS Implementation.
- *IAQ and Student Performance*, (EPA-402-F-00-009) or [www.epa.gov/iaq/schools/pubs.html](http://www.epa.gov/iaq/schools/pubs.html)

EPA IAQ Technical Bulletins/Guidance for Schools (obtain through IAQ INFO)

- *Measuring Air Flow, Temperature, Relative Humidity and Carbon Dioxide in Schools*
- *HVAC System Automatic Controls and Indoor Air Quality in Schools*

**According to the EPA figures, indoor air pollution can sometimes be as much as 100 times more severe than outdoor pollution.**

- *Building Ecology and School Design*
- *Maintenance of Heating, Ventilation and Air-condition Systems and IAQ in Schools*
- *Maintaining Acceptable Indoor Air Quality During the Renovation of a School*
- *Selecting HVAC Systems for Schools—Balance, IAQ, Energy Conservation and Maintenance*
- *Interior Painting and Indoor Air Quality in Schools*
- *Science Laboratories and Indoor Air Quality in Schools*
- *Carpet and Indoor Air Quality in Schools*
- *Tools for New Schools. Indoor Air Quality Guidelines for the Design and Construction of Schools*

Other EPA IAQ resources (obtain through IAQ INFO or Internet)

- *Building Air Quality: A Guide for Building Owners and Facility Managers (NIOSH 98-144)*, or [www.epa.gov/iaq/largebldgs/baqtoc.html](http://www.epa.gov/iaq/largebldgs/baqtoc.html)
- *An Office Building Occupant's Guide to Indoor Air Quality*, or [www.epa.gov/iaq/pubs/occupgd.html](http://www.epa.gov/iaq/pubs/occupgd.html)
- *Building Air Quality Action Plan (98-123)*, or [www.epa.gov/iaq/largebldgs/actionpl.html](http://www.epa.gov/iaq/largebldgs/actionpl.html)
- *Introduction to Indoor Air Quality: A Self-Paced Learning Module*
- *Introduction to Indoor Air Quality: A Reference Manual*
- *Indoor Air Quality and Student Performance*

### **Illinois Sustainable Schools Project**

#### **Illinois EPA Office of Pollution Prevention**

1021 North Grand Avenue East,  
P.O. Box 19276  
Springfield, Illinois 62794  
217-782-3397 (phone)  
217-557-2125 (fax)  
[www.epa.state.il.us/p2/](http://www.epa.state.il.us/p2/)

#### **Illinois Waste Management and Research Center**

One East Hazelwood Drive  
Champaign, Illinois 61820  
217-333-8940 (phone)  
217-333-8944 (fax)  
[www.wmrc.uiuc.edu](http://www.wmrc.uiuc.edu)

The Illinois EPA's Office of Pollution Prevention (OPP) and the Illinois Waste Management and Research Center (WMRC) have developed a sustainable schools program. It is a technical assistance and outreach project that will help K-12 schools in Illinois promote and adopt environmentally sustainable practices in both curricula and facility management. As part of this program, OPP and WMRC staff are available to assist schools in identifying IAQ problems and solutions. Contact the OPP to arrange for assistance.

### **National Association of Energy Service Companies**

202-822-0950

[www.naesco.org](http://www.naesco.org)

- *School Solutions: How to Save Money and Improve IAQ Using Energy Performance Contracts*
- *Breathing Easy: Using Energy Performance Contracting to Improve IAQ in School*

**Despite the fact that children breathe more air per pound of body weight than adults and are more vulnerable to toxins, there are no indoor air quality standards specific to their exposures.**

**In actuality, the school environment exposes children to more densely occupied spaces than commercial offices.**





## ASTHMA

### U.S. EPA

Obtain through IAQ INFO (see Indoor Air Quality)

- IAQ TFS—Managing Asthma in School Environments (EPA 402-K-00-003)

Other information on asthma: [www.epa.gov/iaq/asthma](http://www.epa.gov/iaq/asthma)

### National Heart, Lung, and Blood Institute Information Center

301-592-8573 (phone)

301-592-8563 (fax)

National Asthma Education and Prevention Program's asthma in schools information:

- *Making a Difference: Asthma Management in School* (video; pub. #55-643)
- *Asthma and Physical Activity in the School* (pub. #95-3651)
- *Managing Asthma: A Guide for Schools* (pub. #91-2650)
- *Asthma Awareness Curriculum for Elementary Classrooms* (pub. #93-2894)
- *Your Students with Asthma Can Be Winners, Too!* (Poster; pub. #55-504)
- How Asthma-Friendly Is Your School?  
[www.nhlbi.nih.gov/health/public/lung/asthma/friendhi.htm](http://www.nhlbi.nih.gov/health/public/lung/asthma/friendhi.htm)

### American Lung Association

1-800-LUNG-USA

[www.lungusa.org](http://www.lungusa.org)

#### *Open Airways Schools Kit*

This is a program for children with asthma and educates them on effective asthma management. The six 40-minute educational sessions for children include topics such as asthma triggers and helping each other to manage their asthma.

#### *Asthma 101—The Basics for School Personnel*

Asthma 101 is a one-hour program designed to increase the awareness of basic asthma management in the school setting. The program is targeted for K-12 faculty, support staff, and volunteers and child care providers.

Asthma 101 is delivered by medical professionals and educators. They review the prevalence of asthma, basic signs and symptoms of asthma, common triggers found in the school environment, basic management of an acute asthma episode, asthma medications and delivery devices, asthma management, and monitoring tools. For more information, see [www.lungil.org/programs.html](http://www.lungil.org/programs.html). To schedule a program for your school or child care facility, call 1-800-LUNG-USA or 217-787-5864

## Asthma:

■ is the leading cause of school absenteeism due to chronic disease.

■ affects nearly 5 million children below the age of 18 in the United States.

## HAZARDOUS CHEMICALS

Your County Health Department: \_\_\_\_\_

### U.S. EPA

Office of Pollution Prevention and Toxics

- *Chemical Fact Sheets* [www.epa.gov/chemfact](http://www.epa.gov/chemfact)
- Integrated Risk Information System—*Chemical Substance List*  
[www.epa.gov/iris](http://www.epa.gov/iris)
- Chemical Emergency Preparedness and Prevention Office's  
Chemical Information—*Information on Extremely Hazardous  
Substances, Chemical Profiles, and Emergency Aid Guide*  
<http://yosemite.epa.gov/oswer/ceppoehs.nsf/>

EHS\_Profile?openform

- *Health Effects Notebook for Hazardous Air Pollutants*  
[www.epa.gov/ttn/atw/hapindex.html](http://www.epa.gov/ttn/atw/hapindex.html)
- *U.S. National Profile on Management of Chemicals*—Information  
on all Federal Chemical Safety Programs  
[www.epa.gov/opppsp1/profile/](http://www.epa.gov/opppsp1/profile/)
- *EPA Chemical Testing and Information*  
[www.epa.gov/opptintr/chemtest/index.htm](http://www.epa.gov/opptintr/chemtest/index.htm)

### Illinois Sustainable Schools Project

#### **Illinois EPA**

#### **Office of Pollution Prevention**

1021 North Grand Avenue East,  
P.O. Box 19276  
Springfield, Illinois 62794  
217-782-3397 (phone)  
217-557-2125 (fax)  
[www.epa.state.il.us/p2/](http://www.epa.state.il.us/p2/)

#### **Illinois Waste Management and Research Center**

One East Hazelwood Drive  
Champaign, Illinois 61820  
217-333-8940 (phone)  
217-333-8944 (fax)  
[www.wmrc.uiuc.edu](http://www.wmrc.uiuc.edu)

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### National Institutes of Health

- Toxicology Data Network (TOXNET)  
<http://toxnet.nlm.nih.gov>
- Specialized Information Services Chemical Information  
<http://sis.nlm.nih.gov/Chem/ChemMain.html>

### State Board Assistance Regarding Hazardous Chemicals:

#### Illinois State Board of Education

Guidebook for Science Safety in  
Illinois

[www.isbe.state.il.us/ils/  
sciassess/  
Safety%20Guidebook.html](http://www.isbe.state.il.us/ils/sciassess/Safety%20Guidebook.html)

## CLEANING PRODUCTS

### U.S. EPA

- *Cleaning Products Pilot Project* document  
[www.epa.gov/opptintr/epp/pubs/cleanfct.pdf](http://www.epa.gov/opptintr/epp/pubs/cleanfct.pdf)
- Environmentally Preferential Purchasing Update  
[www.epa.gov/opptintr/epp/pubs/update12.pdf](http://www.epa.gov/opptintr/epp/pubs/update12.pdf)

### Illinois Sustainable Schools Project

#### **Illinois EPA Office of Pollution Prevention**

1021 North Grand Avenue East,  
P.O. Box 19276  
Springfield, Illinois 62794  
217-782-3397 (phone)  
217-557-2125 (fax)  
[www.epa.state.il.us/p2/](http://www.epa.state.il.us/p2/)

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### Healthy Schools Network, Inc.

773 Madison Avenue  
Albany, New York 12208  
518-462-0632  
518-462-0433 (fax)

- *Healthier Cleaning & Maintenance: Practices and Products for Schools*

[www.healthyschools.org/guides\\_materials.html](http://www.healthyschools.org/guides_materials.html)

### Janitorial Products Pollution Prevention Project

[www.westp2net.org/janitorial/jp4.htm](http://www.westp2net.org/janitorial/jp4.htm)

Links to sites aiding in evaluation of janitorial product hazards and how to select/use safe janitorial products.

### U.S. General Services Administration

#### **Safer Paints, Cleaning and Other Chemical Products**

[http://www.gsa.gov/Portal/gsa/ep/contentView.do?CONTACT\\_ID=Safer+Paints+Cleaning+and+Other+Chemical+Products&CONTACT\\_TYPE=GROUP&content Type=GSA\\_CONTACTS](http://www.gsa.gov/Portal/gsa/ep/contentView.do?CONTACT_ID=Safer+Paints+Cleaning+and+Other+Chemical+Products&CONTACT_TYPE=GROUP&content Type=GSA_CONTACTS)



## Other 'Environmental' Products and Services

<http://www.gsa.gov/Portal/gsa/ep/channelView.do?pageTypeId=8207&channelPage=/ep/channel/gsaOverview.jsp&channelId=-12972>

## MERCURY

### U.S. Agency for Toxic Substances Disease Registry

- *National Alert: A Warning about Continuing Patterns of Metallic Mercury Exposure*  
<http://atsdr1.atsdr.cdc.gov/alerts/970626.html>

### Illinois Department of Public Health

217-782-5830

- *Mercury Spills*  
[www.idph.state.il.us/envhealth/factsheets/mercuryspills.htm](http://www.idph.state.il.us/envhealth/factsheets/mercuryspills.htm)
- *Help Spread the Word*  
(Mercury in Schools)  
[www.idph.state.il.us/envhealth/pdf/mercuryschool.pdf](http://www.idph.state.il.us/envhealth/pdf/mercuryschool.pdf)

### Illinois Sustainable Schools Project

#### **Illinois EPA**

#### **Office of Pollution Prevention**

1021 North Grand Avenue East,  
P.O. Box 19276  
Springfield, Illinois 62794  
217-782-3397 (phone)  
217-557-2125 (fax)  
[www.epa.state.il.us/p2/](http://www.epa.state.il.us/p2/)

#### **Illinois Waste Management and Research Center**

One East Hazelwood Drive  
Champaign, Illinois 61820  
217-333-8940 (phone)  
217-333-8944 (fax)  
[www.wmrc.uiuc.edu](http://www.wmrc.uiuc.edu)

The Illinois EPA's Office of Pollution Prevention (OPP) and the Illinois Waste Management and Research Center (WMRC) have developed a sustainable schools program. It is a technical assistance and outreach project that will help K-12 schools in Illinois promote and adopt environmentally sustainable practices in both curricula and facility management. OPP and WMRC staff are available to assist schools with identifying mercury and mercury-containing items in schools, their alternatives and recycling/disposal options. Contact the OPP to arrange for assistance.

- *Mercury Free Alternatives for Schools*  
[www.epa.state.il.us/green-illinois/green-schools/mercury-free-alternatives-for-schools.pdf](http://www.epa.state.il.us/green-illinois/green-schools/mercury-free-alternatives-for-schools.pdf)
- *Mercury Fever Thermometers - What you need to know*  
[www.epa.state.il.us/mercury/mercury-thermometers.pdf](http://www.epa.state.il.us/mercury/mercury-thermometers.pdf)

### Mercury in Schools Website

[www.mercury-k12.org](http://www.mercury-k12.org)

## Mercury...

...is easily absorbed into the body.

...builds up over time, as it doesn't easily break down.

...is linked to reduced developmental IQ, problems with motor skills, and damage to the cardiovascular, immune and reproductive systems in children.

## PESTS AND PESTICIDES

### **Safer Pest Control Project**

25 East Washington Boulevard, Suite 1515  
Chicago, Illinois 60602  
312-641-5575 (phone)  
312-641-5454 (fax)  
[www.spcpweb.org](http://www.spcpweb.org)

Safer Pest Control Project (SPCP) is a nonprofit organization dedicated to reducing the public health risks and environmental impacts of pesticide use and promoting safer alternatives in Illinois. They focus on children—especially those living in underserved communities—a population both critically vulnerable and disproportionately exposed to these toxic chemicals. SPCP not only promotes awareness about the dangers of pesticides, but also provides the people they serve with viable alternatives that are safer and more effective than conventional pest control methods.

One of the foundations of SPCP's work is its free resource and information service. SPCP responds to requests for information regarding alternatives to pesticides and the dangers of pesticides on a daily basis, many from residents of low-income areas with otherwise limited access to this type of information. SPCP maintains a resource center of articles, journals, and books on pesticide hazards and alternative pest control methods to support this service. In addition to addressing individual pest problems, SPCP conducts outreach to the public through workshops, events, conferences, newsletters, and a website. SPCP is the only organization in Illinois providing this type of service.

#### SPCP Resources

- *Towards a Safer Pest Control Policy in Illinois*
- *Integrated Pest Management and Notification Handbook* (for Illinois schools). 2000. SPCP and Illinois State Board of Education. [www.isbe.net/construction/pdf/IPM.pdf](http://www.isbe.net/construction/pdf/IPM.pdf)
- School Integrated Pest Management (IPM) Poster: *Pests, Pesticides: Both are Bad News, Let's Keep Them Out of Our School.*
- *Integrated Pest Management in Schools: A Better Method* (Educational Video). Available in Illinois-specific version or general version.

The following fact sheets can be downloaded from SPCP's website:

- Results of School IPM & Notification Surveys
- Pesticides in Schools: What are the Health Risks?
- A Parent's Guide to Safer Pest Management in Schools (English and Spanish)
- Cost of IPM in Schools
- Summary of the 1999 Legislation Reforming Pest Management Practices in Illinois Schools
- School IPM Resource List



- The ABC's of IPM Implementation
- Testimonial from IPM Coordinator Sue Kamuda
- Guidelines for IPM in School Pest Management Contracts
- Guidelines and Sample Notification
- New School Pest Management Policy
- Kids' Guide to Pesticides

### **Illinois Department of Public Health**

217-782-5830

- *Integrated Pest Management of Structural Pests in Schools.* 1994.
- *A Practical Guide to Management of Common Pests in Schools.* 1999.

### **Illinois State Board of Education**

- Integrated Pest Management and Notification Handbook  
[www.isbe.net/construction/pdf/IPM.pdf](http://www.isbe.net/construction/pdf/IPM.pdf)

### **U.S. EPA**

National Center of Environmental Publications

P.O. Box 42419

Cincinnati, Ohio 45242

1-800-490-9198 or 513-489-8190

[www.epa.gov/ncepihom/](http://www.epa.gov/ncepihom/)

- *Citizen's Guide to Pest Control and Pesticide Safety* (EPA 730-K-95-001, 9/95)
- *Help! It's a Roach—A Roach Prevention Activity Book for Kids* (EPA 735-F-98-016, 6/99)
- *Urban IPM—A Guide for Commercial Applicators* (EPA 735-B-92, 001, 7/92)
- *Roaches mini-poster* (EPA 735-F-98-015, 2/00)
- *Pest Control in the School Environment: Adopting Integrated Pest Management (IPM)* (EPA 735-F-93-012, 1993)
- *Integrated Pest Management for Schools: A How-To Manual*  
[www.epa.gov/pesticides/ipm/schoolipm/index.html](http://www.epa.gov/pesticides/ipm/schoolipm/index.html)

### **U.S. EPA Region 5 Pesticide Coordinator**

77 West Jackson Boulevard (DT-8J)

Chicago, Illinois 60604

312-353-2192

[www.epa.gov/region5/pesticides](http://www.epa.gov/region5/pesticides)

- *To Spray or Not to Spray* (EPA 905-F-95-003, 1995)

### **Other EPA Pests and Pesticide Resources**

- EPA Office of Pesticide Programs:  
[www.epa.gov/pesticides](http://www.epa.gov/pesticides)

- √ Pesticides can be absorbed through the skin, inhaled, or swallowed by humans.
- √ Children have more pesticide exposures than adults.
- √ Pesticides have been linked to certain cancers, damage to the central nervous system, neurological and behavior problems, as well as acute poisoning.

## **Illinois Sustainable Schools Project**

### **Illinois EPA Office of Pollution Prevention**

1021 North Grand Avenue East,  
P.O. Box 19276  
Springfield, Illinois 62794  
217-782-3397 (phone)  
217-557-2125 (fax)  
[www.epa.state.il.us/p2/](http://www.epa.state.il.us/p2/)

### **Illinois Waste Management and Research Center**

One East Hazelwood Drive  
Champaign, Illinois 61820  
217-333-8940 (phone)  
217-333-8944 (fax)  
[www.wmrc.uiuc.edu](http://www.wmrc.uiuc.edu)

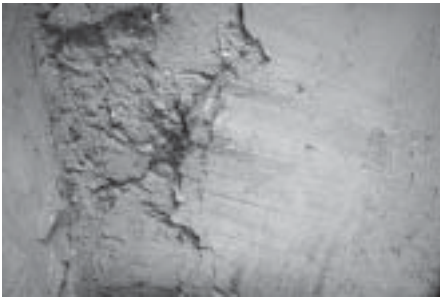
The Illinois EPA's Office of Pollution Prevention (OPP) and the Illinois Waste Management and Research Center (WMRC) have developed a sustainable schools program. It is a technical assistance and outreach project that will help K-12 schools in Illinois promote and adopt environmentally sustainable practices in both curricula and facility management. OPP and WMRC staff are available to assist schools with developing an integrated pest management program. Contact the OPP to arrange for assistance.

### **Beyond Pesticides**

701 E Street S.E. Suite 200  
Washington, D.C. 20003  
202-543-5450 (phone)  
202-543-4791 (fax)  
[info@beyondpesticides.org](mailto:info@beyondpesticides.org)  
[www.beyondpesticides.org](http://www.beyondpesticides.org)

### **Other resources**

- National Pesticides Telecommunications Network:  
1-800-858-PEST for 24-hour information
- Extonet website provides toxicity information on pesticides  
<http://extonet.orst.edu/>
- Purdue University School IPM Hotline: 1-877-668-8476  
[www.entm.purdue.edu/entomology/outreach/schoolipm/](http://www.entm.purdue.edu/entomology/outreach/schoolipm/)
- University of Minnesota Extension Community & School IPM  
[www.extension.umn.edu/pesticides/index.html](http://www.extension.umn.edu/pesticides/index.html)
- Improving Kids Environment (Indiana): 317-442-3973  
[www.ikeycoalition.org](http://www.ikeycoalition.org)



Children exposed to molds can exhibit persistent upper and lower respiratory tract problems.

## **MOLD**

Your County Health Department: \_\_\_\_\_

### **The Facts About Mold: For Everyone**

[www.aiha.org/governmentaffairs-pr/html/mold-consumer.htm](http://www.aiha.org/governmentaffairs-pr/html/mold-consumer.htm)

### **The Facts About Mold: For the Professional**

[www.aiha.org/governmentaffairs-pr/html/mold-professional.htm](http://www.aiha.org/governmentaffairs-pr/html/mold-professional.htm)

## **Facts About Mold – New York City Department of Health**

<http://www.nyc.gov/html/doh/html/ei/eimold.html>

## **University of Minnesota Environmental Health and Safety School Indoor Air Quality Questions – Mold**

[www.dehs.umn.edu/iaq/school/quest43.html](http://www.dehs.umn.edu/iaq/school/quest43.html)

## **Questions and Answers on Stachybotrys chartarum and other molds**

[www.cdc.gov/nceh/airpollution/mold/stachy.htm](http://www.cdc.gov/nceh/airpollution/mold/stachy.htm)

### **U.S. EPA**

Mold Remediation in Schools and Commercial Buildings (EPA 402-K-01-001) [www.epa.gov/iaq/molds/mold\\_remediation.html](http://www.epa.gov/iaq/molds/mold_remediation.html)

Indoor Air Quality Tools for Schools – Appendix H: Moisture, Mold, and Mildew

[www.epa.gov/iaq/molds/index.html](http://www.epa.gov/iaq/molds/index.html)

IBEAM – IAQ Building Education and Assessment Model – CD-Rom (EPA 402-C-01-001) [www.epa.gov/iaq/largebldgs/ibeam\\_page.htm](http://www.epa.gov/iaq/largebldgs/ibeam_page.htm)

### **Healthy Schools Network, Inc.**

Molds at School

[www.healthyschools.org/guides\\_materials.html](http://www.healthyschools.org/guides_materials.html)

### **Building Science Corporation**

[www.buildingscience.com](http://www.buildingscience.com)

## **ASBESTOS**

A parent (or other interested party) can ask for the Asbestos Management Plan at the school office. If the office cannot provide this, the parent should ask for the Asbestos Program Manager for the school. Each school is required by AHERA to have an Asbestos Program Manager (a.k.a. AHERA designated person) who is responsible for updating, maintaining and making the Asbestos Management Plan available to the public. If the school office is unable to identify the Asbestos Program manager, or if there is no Asbestos Program Manager, then the parent should contact U.S. EPA at 312-886-6003.

### **U.S. EPA**

EPA regulations, under the Asbestos Hazard Emergency Response Act (AHERA), require schools to inspect for asbestos and develop, update, and maintain appropriate asbestos management plans. In addition, other EPA regulations, under the National Emission Standards for Hazardous Air Pollutants (NESHAP), require owners/operators to notify the applicable state and local agencies and/or EPA regional offices before demolition or renovation of a building occurs which contains a certain threshold amount of asbestos. The

When inhaled, asbestos lodges itself in the lungs or in the intestines.

Studies of occupational exposure of people who are regularly exposed to asbestos have indicated that they may later develop asbestosis, lung cancer, or mesotheliomas of the chest cavity or abdominal cavity.

Region 5 Asbestos Programs are implemented primarily by the states with EPA support and oversight. Contact the EPA Region 5 Asbestos Coordinators for information on either AHERA or NESHAP regulations or the Toxic Substances Control Act (TSCA) Hotline for more information.

- *The ABC's of Asbestos in Schools – 6/89*
- *Answers to the Most Frequently Asked Questions about Re-inspections under the AHERA Asbestos in Schools Rule – 5/91*
- *Asbestos in Schools: Guide to New Federal Requirements for Education Agencies – 2/88*
- *Guide to Performing Reinspections Under AHERA*
- *Managing Asbestos in Place: A Building Owners Guide to Operations and Maintenance Programs for Asbestos Containing Materials – 7/90*
- *How to Manage Asbestos in School Buildings – AHERA Designated Person's Self-Study Guide (EPA Region 10) 6/96*

### **Region 5 Asbestos Coordinator**

77 West Jackson Boulevard

Chicago, IL 60604

(Mail: DT-8J) / Phone: 312-886-6003 (AHERA)

(Mail: AE-17J) / Phone: 312-353-2088 (NESHAP)

[www.epa.gov/reg5foia/asbestos](http://www.epa.gov/reg5foia/asbestos) (AHERA)

[www.epa.gov/ARD-R5](http://www.epa.gov/ARD-R5) (NESHAP)

TSCA Hotline: 202-554-1404

- Provides asbestos information

Asbestos Ombudsman: 1-800-368-5888

- Assists citizens with school asbestos issues



## **LEAD**

### **U.S. EPA**

EPA's Region 5 Lead Program works with states to implement certification/training requirements for lead hazard evaluation and abatement. EPA also conducts extensive lead poisoning prevention and awareness outreach to all stakeholders, including schools. Contact the Region 5 Lead Coordinator, the Lead Information Hotline and Clearinghouse, or the Internet for more information.

- *Lead in School Drinking Water (EPA 570-9-89-001)*
- *Lead in Drinking Water in Schools and Non-Residential Buildings (EPA 812-B-94-002)*  
[www.epa.gov/safewater/consumer/leadinschools.html](http://www.epa.gov/safewater/consumer/leadinschools.html)
- *Lead in Drinking Water, Schools, and Day Care Centers*  
[www.epa.gov/safewater/lead/schoolanddccc.htm](http://www.epa.gov/safewater/lead/schoolanddccc.htm)
- *EPA Technical Reports/Scientific Studies*  
[www.epa.gov/lead/](http://www.epa.gov/lead/)

**EPA Region 5 Lead Coordinator**  
77 West Jackson Boulevard (DT-8J)  
Chicago, IL 60604  
312-886-6003

**National Lead Information Clearinghouse:**  
1-800-424-LEAD

**Safe Drinking Water Hotline** (can help locate a lab to test water):  
1-800-426-4791

### **U.S. Housing and Urban Development**

Office of Lead Hazard Control  
Washington, D.C. 20410-0000  
202-755-1785 ext. 104

- *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* (This manual provides guidance on lead abatement methods and protection of building occupants during abatement.)

### **Commercial Service**

(listing of inspectors and abatement contractors) [www.leadlisting.org](http://www.leadlisting.org)

### **Institute for Environmental Assessment**

763-315-7900  
[www.ieainstitute.com/HazardousMaterials/knowledge-base/lead-in-american-schools.htm](http://www.ieainstitute.com/HazardousMaterials/knowledge-base/lead-in-american-schools.htm)

- *Lead in American Schools: What School Districts Should and Should Not Do*

## **RADON**

### **U.S. EPA**

General information on radon is available at [www.epa.gov/iaq/radon/](http://www.epa.gov/iaq/radon/) on the Web.

This website will provide a list of state contacts on radon. The contact can provide a list of contractors in the “proficiency program” which are eligible for conducting radon measurement and mitigation.

Also, to obtain a copy of the study of statewide radon levels classified by county and city, ask for the “Gazetteer” code report.

This site will also have information on charcoal canisters, alpha-track-etch detectors, and a list of radon-in-water testing contractors.



**Radon is the second leading cause of lung cancer in the United States.**

EPA and State Radon Programs provide assistance on radon measurement and mitigation. Contact EPA Region 5 Radon Coordinator or National Safety Council (NSC) for information.

- *Radon Measurements in Schools* – Revised Edition (EPA 402-R-92-014)
- *Radon Measurement in Schools* – Self Training Workbook (EPA 402-B-94-001)
- *Reducing Radon in Schools* – A Team Approach (EPA 402-R-94-008)
- *Radon: Diagnostics in Schools* – Video (EPA-402-V-95-005)
- *Radon Prevention – Design & Construction of Schools & Large Buildings* (EPA 625-R-92-016)
- Radon in Schools (Second Edition) – Every School Should Take This Simple Test (EPA-402-F-94-009) or [www.epa.gov/iedweb00/radon/pubs/schoolrn.html](http://www.epa.gov/iedweb00/radon/pubs/schoolrn.html)

**EPA Region 5 Radon Coordinator**

77 West Jackson Boulevard (AE-17J)  
Chicago, Illinois 60604-3590  
312-353-2205  
[www.epa.gov/ARD-R5/radon/indoorair.htm](http://www.epa.gov/ARD-R5/radon/indoorair.htm)

**NSC Radon Hotline:** 1-800-SOS-RADON

**NSC Radon Helpline** (Info Specialists): 1-800-557-2366

**Illinois Emergency Management Agency Division of Nuclear Safety**

1-800-325-1245  
217-785-9958  
[webmaster@DNS.state.il.us](mailto:webmaster@DNS.state.il.us)  
[www.state.il.us/idns/html/radon/lists/measurement.asp](http://www.state.il.us/idns/html/radon/lists/measurement.asp)

This website has a list of licensed individuals by county that meet the requirements of the Radon Industry Licensing Act and must perform radon or radon progeny measurement in accordance with 32 Illinois Administrative Code Part 422.

**EXHAUST FROM DIESEL ENGINE VEHICLES**

**U.S. EPA**

Clean School Bus USA  
[www.epa.gov/cleanschoolbus/](http://www.epa.gov/cleanschoolbus/)



**Union of Concerned Scientists**

[www.ucsusa.org/clean\\_vehicles/trucks\\_and\\_buses/index.cfm](http://www.ucsusa.org/clean_vehicles/trucks_and_buses/index.cfm)

- Clean School Bus Campaign  
[www.cleanschoolbus.org](http://www.cleanschoolbus.org)

**Environment and Human Health, Inc.**

1191 Ridge Road  
North Haven, Connecticut 06473  
203-248-6582 (phone)  
203-288-7571 (fax)  
[info@ehhi.org](mailto:info@ehhi.org)

- *Children’s Exposure to Diesel Exhaust on School Buses*  
[www.ehhi.org/reports/diesel/](http://www.ehhi.org/reports/diesel/)

**Natural Resources Defense Council**

40 West 20th Street  
New York, New York 10011  
212-727-2700 (phone)  
212-727-1773 (fax)  
[www.nrdc.org](http://www.nrdc.org)

- *No Breathing in the Aisles: Diesel Exhaust Inside School Buses*  
[www.nrdc.org/air/transportation/schoolbus/sbusinx.asp](http://www.nrdc.org/air/transportation/schoolbus/sbusinx.asp)
- What Parents Need to Know about Diesel School Buses  
[www.nrdc.org/air/transportation/qbus.asp](http://www.nrdc.org/air/transportation/qbus.asp)

**RENOVATION, CONSTRUCTION, AND STRUCTURE**

Your local school district Health and Safety Committee Representative: \_\_\_\_\_

Your regional office of education: \_\_\_\_\_

**Illinois Sustainable Schools Project**

**Illinois EPA  
Office of Pollution Prevention**

1021 North Grand Avenue East,  
P.O. Box 19276  
Springfield, Illinois 62794  
217-782-3397 (phone)  
217-557-2125 (fax)  
[www.epa.state.il.us/p2/](http://www.epa.state.il.us/p2/)

**Illinois Waste Management  
and Research Center**

One East Hazelwood Drive  
Champaign, Illinois 61820  
217-333-8940 (phone)  
217-333-8944 (fax)  
[www.wmrc.uiuc.edu](http://www.wmrc.uiuc.edu)

The Illinois EPA’s Office of Pollution Prevention (OPP) and the Illinois Waste Management and Research Center (WMRC) have developed a sustainable schools

Idling buses waiting for children in the schoolyard have the potential to create localized air pollution that far exceeds ambient outdoor levels reported from State monitoring efforts.





program. It is a technical assistance and outreach project that will help K-12 schools in Illinois promote and adopt environmentally sustainable practices in both curricula and facility management. OPP and WMRC staff are available to assist schools in identifying and implementing environmentally friendly renovation and construction practices and materials. Contact the OPP to arrange for assistance.

In addition, the OPP and the WMRC are members of the Green Illinois Coordinating Council. This council is responsible for overseeing the Green Illinois Program, which requires that state executive agencies incorporate environmentally sustainable practices into their day-to-day management and operations. Promoting the use of environmentally preferable products and sustainable renovation practices are components of the Green Illinois Program. The 2001 Green Illinois Executive Order #11 identifies specific practices for state agencies. It contains information on green products. The executive order may be accessed online at: [www.epa.state.il.us/green-illinois/executive-orders/number-11.html](http://www.epa.state.il.us/green-illinois/executive-orders/number-11.html)

### **U.S. EPA**

#### **IAQ Design Tools for Schools**

[www.epa.gov/iaq/schooldesign/](http://www.epa.gov/iaq/schooldesign/)

The information available here is presented as a tool to help school districts and facility planners design the next generation of learning environments so that the school facility will help—rather than hinder—schools in achieving their core mission of educating children. IAQ is a critically important aspect of creating and maintaining school facilities. This website provides both detailed guidance as well as links to other information resources to help design new schools as well as repair, renovate and maintain existing facilities. Though its primary focus is on indoor air quality, it is also intended to encourage school districts to embrace the concept of designing High Performance Schools.

#### **Environmentally Preferable Purchasing Program**

[www.epa.gov/opptintr/epp/](http://www.epa.gov/opptintr/epp/)

Environmentally Preferable Purchasing is a federal-wide program that encourages and assists Executive agencies in the purchasing of environmentally preferable products and services.

#### **Collaborative for High Performance Schools**

c/o Eley Associates  
142 Minna St.  
San Francisco, California 94105  
877-642-CHPS (phone)  
415-957-1381 (fax)  
[www.chps.net/](http://www.chps.net/)

The CHPS goal is to facilitate the design of high performance schools: environments that are not only energy efficient, but also healthy, comfortable,



well lit, and containing the amenities needed for a quality education. The CHPS website has free downloads of publications and resources, including a criteria scorecard/checklist for high performance schools.

### **United States Green Building Council**

1015 18th Street, NW, Suite 805  
Washington, D.C. 20036  
(202) 82-USGBC or 828-7422 (phone)  
(202) 828-5110 (fax)  
[www.usgbc.org/](http://www.usgbc.org/)

The U.S. Green Building Council is the nation's foremost coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work.

### **Environmental Law Institute**

1616 P Street, NW, Suite 200  
Washington, D.C. 20036  
202-939-3800 (phone)  
202-939-3868 (fax)  
[law@eli.org](mailto:law@eli.org)  
[www.eli.org](http://www.eli.org)

- *Building Healthy, High Performance Schools: A Review of Selected State and School District Initiatives*

### **Green Seal**

1001 Connecticut Avenue, NW, Suite 827  
Washington, D.C. 20036-5525  
202-872-6400 (phone)  
202-872-4324 (fax)  
[green seal@green seal.org](mailto:green seal@green seal.org)  
[www.green seal.org](http://www.green seal.org)

Green Seal is a non-profit organization that strives to achieve a healthier and cleaner environment by identifying and promoting products and services that cause less toxic pollution and waste, conserve resources and habitats, and minimize global warming and ozone depletion.

They have no financial interest in the products that they certify or recommend nor in any manufacturer.

### **Carpet and Rug Institute**

1-800-882-8846  
706-278-3176  
[www.carpet-rug.com](http://www.carpet-rug.com)

Often, the effects of fumes from new carpeting, freshly applied paint, and new furniture are ignored or forgotten; it is important to remember that they are asthma triggers and indoor air pollutants.

School occupants at higher risk for health problems include all children, pregnant women, the elderly, and those with chronic illnesses or impaired immune systems.



As long as the PCBs remain in lighting ballasts and potting material, they do not pose a health risk or environmental hazard.

However, as they age, the ballasts degrade, increasing the risk of leaks or even fires, which would pose a health and environmental hazard. The hazard can be worsened by mishandling the incident.

## POLYCHLORINATED BIPHENYLS (PCBs)

### U.S. EPA

PCB Home Page  
[www.epa.gov/opptintr/pcb/](http://www.epa.gov/opptintr/pcb/)

### U.S. EPA Region 9

- *PCB Lighting Ballasts in Schools*  
[www.epa.gov/Region9/cross\\_pr/p2/projects/pcbs.html](http://www.epa.gov/Region9/cross_pr/p2/projects/pcbs.html)

### Illinois Clean Energy Community Foundation

School Lighting Upgrade Program  
312-372-5191  
[www.illinoiscleanenergy.org/programs/schools.htm](http://www.illinoiscleanenergy.org/programs/schools.htm)

## CHILDREN'S ENVIRONMENTAL HEALTH

### U.S. EPA

<http://yosemite.epa.gov/ochp/ochpweb.nsf/homepage>  
Children's Environmental Health Hotline: 1-877-590-KIDS  
*Child Health Champion Resource Guide* (EPA 100-B-98-004)

### University of Illinois-Chicago School of Public Health Great Lakes Centers

Center for Children's Environmental Health  
[www.uic.edu/sph/glakes/childrenshealth/childrenshealth.htm](http://www.uic.edu/sph/glakes/childrenshealth/childrenshealth.htm)

## ENVIRONMENTAL EDUCATION

### Healthy Schools Campaign

#### **School-Based Environmental Audit Program**

The Healthy Schools Campaign, with help from the University of Illinois-Chicago School of Public Health, has designed an assessment tool that parents, teachers, and high school students can utilize while doing a visual inspection walkthrough of their school. The program is an ideal way for students and the school community to become more knowledgeable about school environmental health and to involve them in making recommendations for environmental health improvements specific to their school.

For more information about this program, call 312-419-1810 or e-mail [info@healthyschoolscampaign.org](mailto:info@healthyschoolscampaign.org)

### Environmental Education Association of Illinois

[www.eeai.net/](http://www.eeai.net/)

The Environmental Education Association of Illinois (EEAI) is interested in educating people of all ages to the importance of understanding and protecting

the environment. EEAI is the only organization in Illinois that makes environmental literacy its primary goal as it strives to instill a sense of community between native ecosystems and people. It is also a communication network among conservationists and environmentalists from all walks of life.

**Illinois Department of Commerce and Economic Opportunity's Illinois Energy Education Development Program (ILEED)**

620 E. Adams  
Springfield, Illinois 62701  
217-782-7500  
[www.illinoisbiz.biz/com/energy/ileed.html](http://www.illinoisbiz.biz/com/energy/ileed.html)

ILEED is a multi-disciplinary approach to energy education for grades K-12. ILEED provides energy education resources and materials to interested Illinois K-12 teachers and students, free of charge.

**Illinois Department of Commerce and Economic Opportunity's School Recycling and Waste Reduction Grant Program**

620 E. Adams  
Springfield, Illinois 62701  
217-782-7500  
[www.illinoisbiz.biz/com/recycling/school\\_recycling.html](http://www.illinoisbiz.biz/com/recycling/school_recycling.html)

The Illinois School Recycling and Waste Reduction Grant Program helps schools recycle and reduce waste. It also strongly supports teachers who are looking for recycling curriculum which comply with Illinois Learning Standards.

**Illinois Department of Natural Resources**

Division of Education  
One Natural Resources Way  
Springfield, Illinois 62702-1271  
217-782-6302  
<http://dnr.state.il.us/lands/education/index.htm>

The Illinois Department of Natural Resources Division of Education is responsible for the development, training, and dissemination of educational programs and events. The Division works closely with educators, state agencies and other groups to ensure that environmental education goals are being met.

**U.S. EPA**

Materials, including curriculum, posters, coloring books, and films, are available through EPA Region 5. There are also opportunities to apply for environmental education grants, request speakers, etc. Contact EPA Region 5 Environmental Education Coordinator for information.

- Reach Out & Teach Someone – Region 5 Library's Environmental Educational Resources
- Environmental Education Materials: Guidelines for Excellence – North American Association for Environmental Education, 1996



- Catalog of EPA Environmental Education Materials and Resources (EPA 171-B-98-003) National Service Center for Environmental Publications: 1-800-490-9198
- Let's Get the Lead Out, University of Illinois-Chicago School of Public Health & EPA Region 5. 312-886-6003
- Pollution Prevention (P2) Toolbox, EPA Region 5.  
[www.epa.gov/RCRIS-Region-5/wptdiv/p2pages/toolbox.htm](http://www.epa.gov/RCRIS-Region-5/wptdiv/p2pages/toolbox.htm)
- Teacher's Guide to Indoor Air Pollutants. Companion for EPA's IAQ TFS Action Kit. National Safety Council.  
1-800-557-2366 or [www.nsc.org/ehc/indoor/teachers.htm](http://www.nsc.org/ehc/indoor/teachers.htm)
- Students' & Teachers' Radiation Protection Pages.  
[www.epa.gov/radiation/students/](http://www.epa.gov/radiation/students/)
- Learn About Chemicals Around Your House: Interactive website to identify household chemicals and learn their hazards.  
[www.epa.gov/kidshometour/](http://www.epa.gov/kidshometour/)
- Additional environmental education information available at EPA's websites for the education community:
  - Kids' page: [www.epa.gov/kids](http://www.epa.gov/kids)
  - Students' page: [www.epa.gov/students](http://www.epa.gov/students)
  - Teachers' page: [www.epa.gov/teachers](http://www.epa.gov/teachers)



**U.S. EPA Region 5 Environmental Education Coordinator/U.S. EPA Region 5 Library**

77 West Jackson Boulevard (P-19J)  
Chicago, Illinois 60604-3590  
1-800-621-8431 between 9:00 AM – 4:30 PM (CST)  
[www.epa.gov/region5/enved/](http://www.epa.gov/region5/enved/)

**Illinois Sustainable Schools Project**

**Illinois EPA  
Office of Pollution Prevention**

1021 North Grand Avenue East,  
P.O. Box 19276  
Springfield, Illinois 62794  
217-782-3397 (phone)  
217-557-2125 (fax)  
[www.epa.state.il.us/p2/](http://www.epa.state.il.us/p2/)

**Illinois Waste Management  
and Research Center**

One East Hazelwood Drive  
Champaign, Illinois 61820  
217-333-8940 (phone)  
217-333-8944 (fax)  
[www.wmrc.uiuc.edu](http://www.wmrc.uiuc.edu)

[www.epa.state.il.us/green-illinois/green-schools/index.html](http://www.epa.state.il.us/green-illinois/green-schools/index.html)  
[www.epa.state.il.us/education.html](http://www.epa.state.il.us/education.html)

The Illinois EPA's Office of Pollution Prevention (OPP) and the Illinois Waste Management and Research Center (WMRC) have developed a sustainable schools program. It is a technical assistance and outreach project that will help K-12 schools in Illinois promote and adopt environmentally sustainable practices in both curricula and facility management. Promoting Green Chemistry is one of the program components. Contact the WMRC for more information on Green Chemistry. The IEPA has a web site with tools for educators. Contact the OPP for information on environmental education.

### **Natural Resources Defense Council**

The Green Squad's interactive website teaches kids about the relationship between their schools and environmental and health issues. It is designed primarily for students in fifth through eighth grade, but also offers information for younger and older students as well as parents and teachers.

[www.nrdc.org/greensquad/intro/intro\\_1.asp](http://www.nrdc.org/greensquad/intro/intro_1.asp)

### **National Environmental Education and Training Foundation**

The National Environmental Education & Training Foundation is a private non-profit organization dedicated to advancing environmental education. The Foundation has become a leader in the development of new policies, grant-making approaches, and direct programming to advance environmental literacy in America.

They link environmental education to better health, improved education, environmentally sound and profitable business, and volunteerism in local communities. Each of their programs also focuses on the needs of under-resourced people.

[www.neetf.org/](http://www.neetf.org/)

### **Green Flag Program**

The Green Flag Program encourages environmental leadership in schools and is designed to help communities make their schools healthier places to learn, and to educate students about school environmental health. In the program, students and adults work together to investigate environmental issues in their school, identify problems, create solutions, and improve their school environment.

With each positive step a school community takes, the Green Flag Program presents awards to the school and students, culminating in the presentation of the Green Flag Award for Environmental Leadership. The Healthy Schools Campaign serves as the official mentor of any Illinois school that wishes to participate in the Green Flag Program.

[www.greenflagschools.org](http://www.greenflagschools.org)



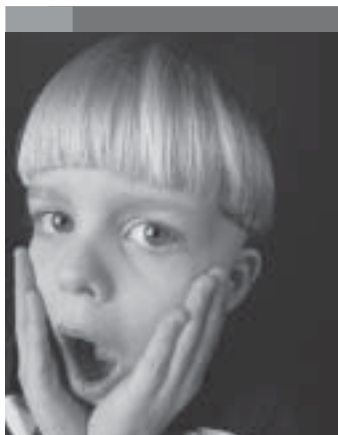


## APPENDIX B

# RECOMMENDED CRITERIA FOR ACCEPTABLE INDOOR AIR QUALITY & INFORMATION ON HAZARDOUS PRODUCTS USED IN SCHOOLS & THEIR TOXIC IMPACT

### Acceptable Indoor Air Quality

The standards recommended by ASHRAE, the American Society of Heating, Refrigerating, and Air Conditioning Engineers, are consensus standards prepared by a project committee whose members are technically qualified in the subject area of the standard. These recommended professional standards are typically used by architects and engineers to design buildings and are incorporated into building codes by state agencies.



To achieve acceptable indoor air quality, the ASHRAE Standard 62-2001, *Ventilation for Acceptable Indoor Air Quality*, recommends ventilation needs in terms of the amount of the cubic feet per minute per person (cfm/person) of fresh air for rooms and buildings depending upon their occupancy and usage. This standard recommends ventilation needs for classrooms, libraries, and music rooms at 15 cfm/person of fresh outside air and laboratories at 20 cfm/person of fresh outside air (assuming that local exhaust ventilation such as a lab hood is used to exhaust specific contaminant sources). Fresh air can be supplied by open windows or by mechanical ventilation systems. Recommended commercial office ventilation rates are 20 cfm.

ASHRAE also suggests that comfort criteria with respect to human bioeffluents are likely to be satisfied if the ventilation results in indoor carbon dioxide concentrations less than 700 parts per million (ppm) above the outdoor air concentrations. In addition, the standard also provides HVAC operation and maintenance recommendations.

See ASHRAE. 2001, Standard 62-2001, *Ventilation for Acceptable Indoor Air Quality*.

American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc.  
1791 Tullie Circle NE  
Atlanta, Georgia 30329  
1-800-527-4723 or 404-636-8400 (phone)  
404-321-5478 (fax)

### How to obtain Material Safety Data Sheet (MSDS) information:

- MSDS Frequently Asked Questions is a site produced by the Interactive Learning Paradigms Incorporated  
[www.ilpi.com/msds/faq/parta.html#whatis](http://www.ilpi.com/msds/faq/parta.html#whatis)
- University of Vermont Safety Information Resources on the Internet that allows you to search for MSDSs by manufacturer  
<http://siri.uvm.edu>



## Examples of Toxic and Hazardous Products Used in Schools

Product Type	Chemical Ingredient	Adverse Health Effect
<b>Glass Cleaner</b>	✓ 2-Butoxyethanol	Absorbed through skin and can cause blood changes. EPA environmental hazard.
<b>Powderized Glass Cleaner</b>	✓ Ammonium Hydroxide	A poison and severe irritant to mouth and throat when large amounts are swallowed. Creates toxic gas when mixed with chlorine bleach.
<b>Bleach</b>	✓ Sodium Hypochlorite	Corrosive to eyes and skin, respiratory irritant, creates toxic gas when mixed with other common cleaning ingredients.
<b>Powderized General Cleaner</b>	<ul style="list-style-type: none"> <li>✓ Sodium Carbonate</li> <li>✓ Calcium Hydroxide</li> <li>✓ Sodium alkylbenzene sulfonate</li> </ul>	<p>Toxic. Harmful if mist or aerosol inhaled. Irritating to the eyes and the respiratory tract. Corrosive to metals.</p> <p>Strongly corrosive to eyes and skin.</p> <p>Irritating to eyes and skin.</p>
<b>Dry Erase Surface Cleaner</b>	<ul style="list-style-type: none"> <li>✓ Isopropanol</li> <li>✓ Ethylene Glycol Monobutyl ether</li> </ul>	<p>Flammable Volatile Organic Compound, low flash point.</p> <p>Absorbed through skin and can cause blood changes. EPA environmental hazard.</p>
<b>Antibacterial Soap</b>	<ul style="list-style-type: none"> <li>✓ Lauramide DEA</li> <li>✓ Ammonium Lauryl Sulfate</li> <li>✓ Glycerin</li> </ul>	<p>DEA is suspected of causing cancer or the formation of cancer-causing nitrosamines.</p> <p>Eye and skin irritant.</p> <p>Mildly toxic by swallowing large amounts. Skin and eye irritant.</p>
<b>Carpet Cleaner</b>	<ul style="list-style-type: none"> <li>✓ Sodium Metasilicate</li> <li>✓ Urea</li> <li>✓ Ethoxylated Nonylphenol</li> <li>✓ N, N-Dialkyl (C8-10)-N, N-Dimethylammonium chloride</li> </ul>	<p>Highly corrosive to eyes and skin.</p> <p>Mutagen. A skin irritant.</p> <p>Eye and skin irritant. Suspected mutagen. Slow biodegradation.</p> <p>Eye and skin irritant.</p>

*These adverse health effects are listed from MSDS sheets of each chemical.*

**SEE OTHER EXAMPLES OF TOXIC AND HAZARDOUS PRODUCTS USED IN SCHOOLS ON THE FOLLOWING PAGES.**



The following tables and lists are from the “Health and Safety Guide for K-12 Schools in Washington” jointly published for Washington State in December 2000 by the State Department of Health (DOH) and Office of Superintendent of Public Instruction (OSPI). These tables contain lists of toxic and hazardous products used in schools.

## Table 1

DOH–OSPI list of chemicals found in science laboratories deemed unsuitable for use in K–12 schools due to excessive risk that exceeds educational utility

<u>Chemical Name</u>	<u>Hazards</u>
Acetic Anhydride	Explosive potential, corrosive
Acetyl Chloride	Corrosive, dangerous fire risk, reacts violently w/water and alcohol
Acrylamide	Toxic by absorption, suspected carcinogen
Acrylonitrile	Flammable, poison
Adipoyl Chloride	Corrosive; absorbs through skin, lachrymator (causes tears)
Ammonia, gas	Corrosive lachrymator
Ammonium Bifluoride	Reacts with water, forms hydrofluoric acid
Ammonium Bichromate	May explode on contact with organics, suspected carcinogen
Ammonium Chromate	Oxidizer, poison; may explode when heated
Ammonium Dichromate	Reactive, may cause fire and explosion
Aniline	Carcinogen, toxic, absorbs through skin
Aniline Hydrochloride	Poison
Antimony Oxide	Health and contact hazard
Antimony Powder	Flammable as dust, health hazard
Antimony Trichloride	Corrosive, emits hydrogen chloride gas if moistened
Arsenic compounds	Poison, carcinogen
Asbestos, Friable	Inhalation health hazard, carcinogen
Azide Compounds	Explosive in contact with metals, extremely reactive, highly toxic
Barium Chromate	Poison, carcinogen
Benzene	Flammable, carcinogen
Benzoyl Peroxide	Organic peroxide, flammable, explosive oxidizer
Beryllium and its compounds	Poison, dust is P-listed & highly toxic, carcinogen
Cadmium compounds	Toxic heavy metal, carcinogen
Calcium Fluoride (Fluorspar)	Teratogen, emits toxic fumes when heated
Carbon Disulfide	Flammable, toxic, P-listed
Carbon Tetrachloride	Toxic, carcinogen
Chloral Hydrate	Hypnotic drug, controlled substance
Chlorine	Poison gas, corrosive

Continues on next two pages

## Table 1 (continued)

DOH–OSPI list of chemicals found in science laboratories deemed unsuitable for use in K–12 schools due to excessive risk that exceeds educational utility

<u>Chemical Name</u>	<u>Hazards</u>
Chlorobenzene	Explosive limits 1.8% to 9.6%, toxic inhalation and contact hazard
Chloroform	Carcinogen, if old forms deadly Phosgene gas
Chlorosulfonic Acid	Toxic, also known as sulfuric chlorohydrin
Chromic Acid	Strong oxidizer, poison
Collodion	Flammable, explosive when dry, nitrocellulose compound
Cuprous Cyanide	Toxic
Cyanogen Bromide	Poison, strong irritant to skin and eyes
Cyclohexene	Flammable, peroxide former
Dichloroethane	Flammable, toxic
Dinitro Phenol	Explosive
Dinitrophenyl Hydrazine	Severe explosion and fire risk
Dioxane	Flammable, peroxide former
Ether, Anhydrous	Flammable, peroxide former
Ether, Isopropyl	Flammable, peroxide former
Ethylene Dichloride	Toxic, contact hazard, dangerous fire risk, explosive in air 6-16%
Ethyl Nitrate	Explosive
Ethyleneimine	Flammable, toxic, P-listed
Ferrous Sulfide	Spontaneously ignites with air if wet
Formaldehyde (Formalin)	Toxic, carcinogen, sensitizer
Gunpowder	Explosive
Hydrazine	Flammable, absorbed through skin, carcinogen, corrosive
Hydriodic Acid	Corrosive, toxic
Hydrogen Sulfide, gas	Poison, stench, very toxic
Isopropyl Ether	Flammable, highest-risk peroxide former
Lithium Aluminum Hydride	Flammable, reacts with air, water, and organics
Lithium Metal	Reacts with water and nitrogen in air
Mercaptoethanol	Flammable, corrosive, intense stench
Mercury compounds	Poisonous heavy metal
Methylene Chloride	Toxic, carcinogen, narcotic
Methyl Ethyl Ketone	Flammable, dangerous fire risk, toxic
Methyl Iodide (Iodomethane)	May be a narcotic, carcinogen, lachrymator.
Methyl Isocyanate	Flammable, dangerous fire risk, toxic
Methyl Isopropyl Ketone	Toxic
Methyl Methacrylate	Flammable, vapor causes explosive mix with air
Naphthylamine, a-	Combustible, toxic, carcinogen
Nickel Oxide	Flammable as dust, toxic, carcinogen
Nicotine	Poison, P-listed
Nitrilotriacetic Acid	Corrosive
Nitrobenzene	Highly toxic

## Table 1 (continued)

DOH–OSPI list of chemicals found in science laboratories deemed unsuitable for use in K–12 schools due to excessive risk that exceeds educational utility

<u>Chemical Name</u>	<u>Hazards</u>
Nitrocellulose	Flammable, explosive
Nitrogen Triiodide	Explosive
Nitroglycerin	Explosive
Osmium Tetraoxide (Osmic Acid)	Highly toxic, P-listed
Pentachlorophenol	Extremely toxic
Perchloric Acid	Powerful oxidizer, reactive
Phosphorus Pentasulfide	Water reactive, toxic, incompatible with air and moisture
Phosphorus Pentoxide	Oxidizer, toxic
Phosphorus, Yellow or White	Air reactive, poison
Picric Acid, Trinitrophenol	Explosive when dry
Potassium Chromate	Oxidizer, toxic
Potassium Dichromate	Powerful oxidizer, carcinogen
Potassium Cyanide	Poison, P-Listed
Potassium Sulfide	Flammable, may ignite spontaneously
Potassium, metal	Water reactive, peroxide former (orange fog/crystals)
Pyridine	Flammable, toxic, vapor forms explosive mixture with air
Selenium	Toxic
Silver Cyanide	Extremely toxic
Sodium Arsenate	Toxic
Sodium Arsenite	Toxic
Sodium Azide	Poison, explosive reaction with metals, P-listed
Sodium Borohydride	Flammable solid, water reactive
Sodium Chromate	Oxidizer, carcinogen
Sodium Cyanide	Poison, P-Listed
Sodium Fluoride (Bifluoride)	Highly toxic by ingestion or inhalation, strong skin irritation
Sodium Fluoroacetate	Toxic, deadly poison
Strontium	Flammable, store under naphtha, reacts with water
Testosterone HCl	Controlled substance
Tetrahydrofuran	Flammable, peroxide former
Thioacetamide	Toxic, carcinogen, combustible
Thionyl Chloride	Corrosive
Thiourea	Carcinogen
Titanium Trichloride	Flammable, fire risk
Triethylamine	Flammable, toxic, irritant
Trinitrobenzene	Explosive
Trinitrotoluene	Explosive

## Table 2

DOH–OSPI list of chemicals appropriate only for advanced level high school science classes due to high risk and limited to small or micro scale quantities

<u>Chemical Name</u>	<u>Hazards</u>
Acetamide	Carcinogen, P-Listed
Aluminum Chloride, anhydrous	Water reactive, corrosive
Ammonium Nitrate	Powerful oxidizer, reactive
Ammonium Perchlorate	Explosive; highly reactive
Ammonium Sulfide	Poison, corrosive, reacts with water and acids
Barium Peroxide	Fire and explosion risk with organic materials, oxidizer, toxic
Bromine	Corrosive, oxidizer, volatile liquid
Butyric Acid	Corrosive, intense stench
Cadmium sulfide	Highly toxic, carcinogen
Calcium Carbide	Flammable, reacts with water
Chromium Trioxide	Oxidizer, poison
Dichlorobenzene	Toxic, also known as “Moth Balls”
Ethidium Bromide	Potent mutagen
Ether, Ethyl	Flammable, peroxide former, 6-month shelf-life max
Hexamethylenediamine	Corrosive, absorbs through skin, lachrymator
Hexanediamine, 1-6	Corrosive, absorbs through skin, lachrymator
Hydrobromic Acid	Corrosive, poison
Hydrofluoric Acid	Corrosive, poison
Hydrogen Peroxide, greater than 29%	Powerful oxidizer, corrosive to skin
Lead compounds	Highly toxic
Lead Nitrate	Toxic heavy metal, oxidizer
Magnesium, powder	Flammable
Mercury, liquid	Toxic heavy metal, carcinogen – not a reagent
Mercury Thermometers	Toxic heavy metal, carcinogen – not a reagent
Phenol	Poison
Phosphorus, Red	Flammable solid, very small quantities only
Potassium Chlorate	Powerful oxidizer, reactive
Potassium Perchlorate	Powerful oxidizer, reactivity hazard
Radioactive Materials	Radioactive
Sebacoyl Chloride	Corrosive fumes, lachrymator
Silver compounds	Toxic
Silver Oxide	Poison
Sodium Chlorate	Powerful oxidizer
Sodium Dichromate	Reactive, may cause fire and explosion
Sodium metal lump	Water reactive, ignites spontaneously in dry hot air
Sodium, metal, small chips	Water reactive, corrosive
Sodium Peroxide	Water reactive; may cause fire & explosion
Sodium Sulfide	Fire and explosion risk
Strontium Nitrate	Oxidizer, may explode when heated or shocked
Thermite	Flammable solid, small quantities
Toluene	Flammable, dangerous fire risk, toxic
Uranium/Uranyl Compounds	Radioactive
Wood’s Metal	Poison
Xylene	Flammable, toxic

# LIST

## DOH-OSPI list of chemical hazards associated with arts and crafts

### PAINTING

Making Paints	Dusts with heavy and radioactive metals. Solvents, especially Toluene. Driers, preservatives, and binders, possibly including Pb, Mn, and Co. SHOULD NOT BE DONE IN SCHOOLS.
Oil, Acrylic, and Epoxy Painting	Toxic pigments, especially lead, arsenic, chromate, and cadmium. Solvent exposure, especially Toluene. With epoxy resins, hypersensitivity reactions are a danger. (Note: old pastels may contain asbestos-laden French Talc.)
Spray Painting	Inhalation of solvents and toxic pigments.
Clean-up	Solvent exposures.

### PRINT MAKING

Silk-screening with Oil-Based Inks	Exposure to solvents especially in the printing and drying process. Toxic solvents (lacquer solvents and toluene) and isophorone are particular hazards. It is safer to use water-based inks.
Clean-up of Silk Screening Process	Exposure to solvents. Safer to use disposable stencils and other materials.
Lithography	Possible exposure to Lampblack, a carcinogen. Solvent exposure. Metal fumes and gasses from photolithography.
Intaglio	Risk of injury from sharp tools. Solvent exposure, possible methyl chloroform.
Acid Etching (Nitric or Hydrochloric Acid)	Exposure to asphaltum (carcinogenic). K Chlorate (explosive) and Cl gas from Dutch mordant. H <sub>2</sub> gas and NO <sub>x</sub> gasses released in acid etching.
Relief Printing	Risk of injury from sharp tools. Skin irritants from exotic woods. Glue solvents, dusts, and fixatives in collograph making.

# LIST (continued)

DOH-OSPI list of chemical hazards associated with arts and crafts

## CERAMICS, JEWELRY, AND ENAMELING

Clays and Talcs	Silica and asbestos (especially Tremolite) in dried clay residues, allergenic molds in old moist clay.
Kick Wheels	Injury risk.
Glaze Preparation	Exposure to powders of highly toxic heavy metals. INAPPROPRIATE IN SCHOOLS. Exposure to heavy metal pigments especially lead, cadmium, chrome, antimony, vanadium, nickel, and possibly uranium oxide in old compounds. Frittered leads are still hazardous to use in the glazing and firing processes.
Kiln Firing	Exposure to heavy metal fumes (especially Pb as it vaporizes at low temperature) and poisonous gases (e.g. Cl, F1, SO <sub>2</sub> , NO <sub>x</sub> , O <sub>3</sub> ) from unventilated processes. Accumulation of heavy metal fume residue from overnight or weekend firing. Burns, heat exposure, and infrared radiation hazards.
Use of Pottery as Foodservice Utensils	The safety of final products using frittered lead glazes depends on the quality control in the firing process and on the type of kiln used. In small electric kilns often used by schools, frittered leads should be expected to vaporize and reprecipitate on pottery in a dangerous, soluble form.

## SCULPTURE

Plastics	Formaldehyde, phenol, carbon monoxide, and hydrogen cyanide exposure from work with amino and phenolic resins. Skin and respiratory irritants and allergens with epoxy resins. Methyl methacrylate monomer (irritant and narcotic), benzoyl peroxide (flammable and explosive), acrylic polymer dust (sensitizer) are hazards with acrylic resins. Styrene (highly toxic narcotic, neurotoxin, and internal organ risk), cobalt naphthalenic, dimethylaniline (causes methemoglobinemia), fiberglass, and solvents are potential hazards in work with polyester resins. Work with polyurethane resins may cause exposure to diisocyanates (TDI, MDI), toxic amines, organotin compounds, fluorocarbon blowing agents (cardiotoxic). Heating polyurethane may produce carbon monoxide, nitrogen oxides, acrolein, and hydrogen cyanide. Work with silicones and natural rubbers may cause exposure to acetic acid, methanol, methylene chloride, and flammable and explosive peroxides and hexane. Work with finished plastics may cause exposure to plastic dusts, some of which are irritants or allergens. Heat decomposition of molding pellets and other plastics may produce carbon monoxide, nitrogen oxides, hydrogen cyanide, plastic monomers, monomer methyl methacrylate, hydrogen chloride gas, and toxic polyfluorocarbon decomposition products. Toxic solvents including methylene chloride may be encountered in many processes.
Plaster	Plaster dust and additives (Potassium sulfate, potassium alum, borax, acetic acid, burnt lime). Physical hazards in modeling or carving. Powdered pigments, acrylics, and lacquer solvents in finishing processes.

# LIST (continued)

## DOH-OSPI list of chemical hazards associated with arts and crafts

### SCULPTURE (continued)

Wax	Flammable wax vapors, acrolein fumes, decomposition products from heating wax. Solvent exposures (including CC1, in some applications). Chlorinated synthetic waxes (with PCB's) may be found in old materials.
Stone	Physical hazards, silica, and asbestos in some applications.
Wood	Allergenic and irritating saps and wood dusts. Carcinogenic wood dust exposure (requires chronic exposures). Highly toxic wood dusts (e.g. giant sequoia, cork oak, some maple woods, and redwood). Glues and solvents.

### PHOTOLABS

Black and White	Inhalation of chemical fumes and contact with eyes or skin are primary hazards. Exposures to mono-methyl-p-aminopheno sulfate, paraphenylene diamine, hydroquinone, sodium hydroxide, sodium carbonate, potassium bromide, sodium sulfite are possible in developers. Acetic acid, especially prior to dilution is the primary hazard with stop baths. Potassium chrome alum is another possible exposure. Mixing the sodium sulfite in the fixing bath with the acetic acid in the stop bath can produce sulfur dioxide gas. Other mixture hazards exist with intensifying and reducing compounds. Intensifiers, reducers, and toners can be HIGHLY toxic and include cyanide compounds, chromates, and toxic metals among other chemicals.
Color	In addition to chemicals used in Black and White photography, color photography involves the use of other hazardous chemicals (e.g. the cellusolves, ethylene glycol, and tertiary-butylamine borane).

### MISCELLANEOUS CRAFTS

Fiber Arts— Vegetable Fibers (e.g., jute, sisal, cotton)	Fiber dusts and molds may cause acute or chronic pulmonary illnesses.
Fiber Arts— Animal Fibers (e.g., wool)	Anthrax from imported wool or hair.
Dyeing Fabrics	Skin contact and inhalation of dyes which are allergenic, irritating, or otherwise toxic are the primary hazards.
Leather Craft	Physical hazards, leather dusts (a possible carcinogen with chronic exposure), and solvents from leather cementing are the primary hazards.

# LIST (continued)

## DOH-OSPI list of chemical hazards associated with arts and crafts

### MISCELLANEOUS CRAFTS (continued)

Bone and Shell Materials	Physical hazards. Irritants, allergens, and pathogens from bone and shell dusts.
Stained Glass	Physical hazards. Possible exposures during glass decoration: metallic oxides, enamels, silver nitrate, hydrofluoric acid, and wax vapors. Glazing hazards: Pb dust and fumes, Zn chloride. Antiquing hazards: antimony sulfide, copper sulfate, and selenium dioxide.

### METALWORK

Welding	Fire/explosion hazards, hot metal and sparks, ultraviolet light, infrared radiation, poisonous gases (CO, NO <sub>x</sub> , O <sub>3</sub> ), toxic fumes (F, Cu, Zn, Fe, Ni, Mg, Mn, Pb, Cd, Cr, Ni, Be).
Brazing	Fire/explosion hazards, hot metal, flame, infrared radiation, fluoride flux fumes, and metal fumes (Cd, Pb, and Zn).
Metal Casting	Molding hazards; formaldehyde, silica, asbestos, bone dusts, sodium silicate, and ethyl silicate and wax fumes (in lost wax process). Pouring hazards: CO, metal oxides (Pb, Ni, Zn), hydrogen cyanide (in lost Styrofoam process), molten metal, heat, and infrared radiation.
Forging, Metalwork Fabrication	Sharps, noise, heat, CO gas, infrared, hot objects, flame, fire/explosion hazards, H <sub>2</sub> SO <sub>4</sub> (IN CLEANING SURFACES).
Surface Treatment	Pitch (with Benzo-a-Pyrene), benzene, fire hazards, sharps.
Etching, Photo Engraving	Strong acids and acid gases (e.g. nitric acid), methyl cellulose acetate, and xylene. Carbon arc hazards: NO <sub>x</sub> , O <sub>3</sub> , other poisonous gases, ultraviolet radiation.
Electroplating and Electroforming	Electric currents, caustic soda, sulfuric acid, cyanide, lacquer vapors.
Chemical Coloring	Toxic coloring agents (e.g. Pb Acetate, Iodine, Barium Sulfide). Flammables, solvents, and lacquer vapors.
Niello	Pb fumes and Pb sulfide dusts.
Gilding	Mercury exposure.



# LIST (continued)

## DOH-OSPI list of chemical hazards associated with arts and crafts

### METALWORK (continued)

Cleaning, Polishing, Finishing	Pickling hazards: Strong acids, Na Bisulfate, K dichromate. Sandblasting: Silica. Grinding, sanding, and filing: metal particles, toxic metal dusts (e.g. Pb), grinding wheel dusts and fumes (e.g. silica, formaldehyde, irritants, and allergens).
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### DRAWING AND PAPER CONSTRUCTION

Chalk Drawings	Methylene chloride in the spray fixatives.
Glue Application	Toluene and Xylene exposure from rubber cement and other solvent-based glues. Allergens and solvents from epoxy adhesives. Isocyanates in polyurethane adhesives. Physical hazards from cyanoacrylate instant glues.
Markers	Xylene and toluene exposures from permanent markers and dry erase (white board) markers.

**Source:** McCann, M.: *Artist Beware: The Hazards and Precautions in Working with Art and Craft Materials*. Watson-Guptill Publications. New York, 1979. 2 These potential hazards exist for only some of the processes used. The potential hazards are not a comprehensive listing, but provide important examples.

# Health Effects of 48 Commonly Used Toxic Pesticides in Schools

## A Beyond Pesticides Fact Sheet

Pesticide	Cancer	Reproductive Effects	Neurotoxicity	Kidney / Liver Damage	Sensitizer / Irritant
<b>Insecticides</b>					
Acephate	C <sup>1</sup>	X <sup>2</sup>	X <sup>3</sup>	X <sup>4</sup>	X <sup>2</sup>
Allethrin			X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
Avermectin		X <sup>2</sup>	X <sup>2</sup>		X <sup>2</sup>
Bendiocarb		X <sup>3</sup>	X <sup>3</sup>		X <sup>2</sup>
Bromacil	C <sup>1</sup>			X <sup>2</sup>	X <sup>5</sup>
Chlorpyrifos			X <sup>2</sup>		X <sup>2</sup>
Cyfluthrin		X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
Cypermethrin	C <sup>1</sup>	X <sup>6</sup>	X <sup>2</sup>	X <sup>2</sup>	
Diazinon		X <sup>7</sup>	X <sup>2</sup>		X <sup>2</sup>
Dichlorvos	C <sup>1</sup>		X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
Fenoxycarb	Likely <sup>1</sup>			X <sup>2</sup>	X <sup>2</sup>
Fenvalerate			X <sup>2</sup>		X <sup>2</sup>
Hydramethylnon	C <sup>1</sup>	X <sup>8</sup>		X <sup>2</sup>	X <sup>2</sup>
Isophenfos			X <sup>5</sup>		
Lamda Cyhalothrin	D <sup>1</sup>		X <sup>2</sup>		X <sup>2</sup>
Permethrin	C <sup>1</sup>	X <sup>9</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
Phenothrin			X <sup>10</sup>	X <sup>3</sup>	
Piperonyl butoxide	C <sup>1</sup>	X <sup>11</sup>	X <sup>11</sup>	X <sup>12</sup>	X <sup>11</sup>
Propetamphos			X <sup>2</sup>		
Propoxur	B2 <sup>5</sup>		X <sup>2</sup>	X <sup>2</sup>	
Pyrethrin	Likely <sup>1</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
Tetramethrin	C <sup>1</sup>		X <sup>3</sup>		
Trichlorfon		X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
<b>Herbicides</b>					
Atrazine	2B <sup>13</sup>	X <sup>7</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
Bensulide			X <sup>2</sup>		X <sup>2</sup>
2,4-D	2B <sup>14</sup>	X <sup>15</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>16</sup>
DSMA			X <sup>17</sup>		X <sup>17</sup>
Dacthal	C <sup>1</sup>			X <sup>2</sup>	X <sup>15</sup>
Dicamba	D <sup>1</sup>		X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
Diquat Dibromide		X <sup>18</sup>		X <sup>2</sup>	X <sup>5</sup>
Endothall				X <sup>15</sup>	X <sup>2</sup>
Glyphosate		X <sup>15</sup>	X <sup>15</sup>	X <sup>2</sup>	X <sup>5</sup>
Isoxaben	C <sup>1</sup>				
MCPA		X <sup>2</sup>	X <sup>15</sup>	X <sup>15</sup>	
MCPP				X <sup>2</sup>	X <sup>2</sup>
MSMA		X <sup>9</sup>	X <sup>9</sup>	X <sup>18</sup>	X <sup>9</sup>
Pendimethalin	C <sup>1</sup>	X <sup>15</sup>		X <sup>2</sup>	X <sup>2</sup>
Prometon	D <sup>1</sup>				X <sup>19</sup>
Pronamide	B2 <sup>1</sup>	X <sup>5</sup>		X <sup>5</sup>	X <sup>2</sup>
Siduron					X <sup>9</sup>
Triclopyr	D <sup>1</sup>			X <sup>2</sup>	X <sup>2</sup>
Trifluralin	C <sup>1</sup>	X <sup>7</sup>		X <sup>2</sup>	X <sup>2</sup>

Beyond Pesticides/National Coalition Against the Misuse of Pesticides

701 E Street, SE, Suite 200, Washington, DC 20003, (202) 543-5450 voice, (202) 543-4791 fax, [info@beyondpesticides.org](mailto:info@beyondpesticides.org), [www.beyondpesticides.org](http://www.beyondpesticides.org)

# Health Effects of 48 Commonly Used Toxic Pesticides in Schools

## A Beyond Pesticides Fact Sheet (continued)

Pesticide	Cancer	Reproductive Effects	Neurotoxicity	Kidney / Liver Damage	Sensitizer / Irritant
<b>Fungicides</b>					
Benomyl	C <sup>1</sup>	X <sup>8</sup>	X <sup>15</sup>	X <sup>2</sup>	X <sup>2</sup>
Chlorothalonil	Likely <sup>1</sup>		X <sup>15</sup>		X <sup>15</sup>
Maneb	B2 <sup>1</sup>	X <sup>15</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
PCNB	C <sup>1</sup>	X <sup>15</sup>		X <sup>15</sup>	
Sulfur					X <sup>2</sup>
Triadimefon	C <sup>1</sup>	X <sup>8</sup>	X <sup>2</sup>	X <sup>2</sup>	
Ziram	Likely <sup>1</sup>	X <sup>2</sup>	X <sup>15</sup>	X <sup>15</sup>	X <sup>2</sup>
<b>Total</b>	24 probable, possible or likely	25	33	33	39

X = Adverse effects demonstrated.

B2 = U.S. EPA weight-of-evidence category, “probable human carcinogen, sufficient evidence in animals and inadequate or no evidence in humans.”

C = U.S. EPA weight-of-evidence category, “possible human carcinogen” rating.

D = U.S. EPA weight-of-evidence category, “not classifiable as to human carcinogenicity,” usually due to inadequate data.

2B = International Agency for Research on Cancer, World Health Organization (IARC) category, the agent (mixture) is possibly carcinogenic to humans.

Likely = U.S. EPA, “Likely to be carcinogenic to humans.”

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- <sup>1</sup> U.S. EPA. 2002. List of Chemicals Evaluated for Carcinogenic Potential. Office of Pesticide Programs. [www.epa.gov/pesticides/carlist](http://www.epa.gov/pesticides/carlist).
  - <sup>2</sup> Extension Toxicology Network (EXTOXNET) Pesticide Information Profiles, [ace.orst.edu/info/extoxnet/ghindex.html](http://ace.orst.edu/info/extoxnet/ghindex.html).
  - <sup>3</sup> U.S. EPA. 2000. Table 1: Toxicity Data by Category for Chemicals Listed Under EPCRA Section 313. Toxic Release Inventory (TRI) Program. [www.epa.gov/tri/chemical/hazard\\_categories.pdf](http://www.epa.gov/tri/chemical/hazard_categories.pdf).
  - <sup>4</sup> National Institute for Occupational Safety and Health. Registry of Toxic Effects of Chemical Substances.
  - <sup>5</sup> U.S. EPA. Reregistration Eligibility Decision (RED) Factsheet. Office of Pesticide Program. [www.epa.gov/oppsrrd1/REDs/](http://www.epa.gov/oppsrrd1/REDs/).
  - <sup>6</sup> Illinois EPA. 1997. Illinois EPA Endocrine Disruptors Strategy. Springfield, IL.
  - <sup>7</sup> U.S. EPA. 2003. Handbook for Non-Cancer Health Effects Valuation, Appendix C: Case Studies, Economic Valuation of Endocrine Disruption: Introduction. Science Policy Council.
  - <sup>8</sup> California EPA. 2003. Chemicals Known to the State to Cause Cancer or Reproductive Toxicity. Office of Environmental Health Hazard Assessment.
  - <sup>9</sup> National Library of Medicine, TOXNET, Hazardous Substances Database, <http://toxnet.nlm.nih.gov/>.
  - <sup>10</sup> World Health Organization. 1990. d-Phenothrin. Environmental Health Criteria. Geneva.
  - <sup>11</sup> Cox, C. 2002. “Piperonyl Butoxide.” *Journal of Pesticide Reform* 22(2): 12-20. [www.pesticide.org/PiperonylButoxide.pdf](http://www.pesticide.org/PiperonylButoxide.pdf).
  - <sup>12</sup> National Pesticide Information Center. Pesticide Fact Sheets. <http://ace.orst.edu/info/npic/npicfact.htm>.
  - <sup>13</sup> U.S. EPA. 1999. Table 4: Cancer Data for Chemicals Listed Under EPCRA Section 313.
  - <sup>14</sup> National Cancer Institute epidemiological evidence.
  - <sup>15</sup> Environmental Defense Fund, Scoreboard Database, [www.scorecard.org/chemical-profiles/](http://www.scorecard.org/chemical-profiles/).
  - <sup>16</sup> U.S. EPA. 2003. 2,4-D. Technology Transfer Network, Air Toxics Website. [www.epa.gov/ttnatw01/hlthef/di-oxyac.html](http://www.epa.gov/ttnatw01/hlthef/di-oxyac.html).
  - <sup>17</sup> Material Data Safety Sheet for DSMA.
  - <sup>18</sup> New Jersey Department of Health and Senior Services. Right to Know Hazardous Substance Fact Sheets. <http://www.state.nj.us/health/eoh/rtkweb/rtkhsfs.htm>.
  - <sup>19</sup> Cornell University. 1985. Prometon Herbicide Profile. Ithaca, NY. <http://pmep.cce.cornell.edu/>.

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# APPENDIX C

## ILLINOIS STATE & REGIONAL EDUCATION OFFICES



The following listings will help guide you to the correct offices for questions, complaints, support, educational materials and other needs.



### **Illinois State Board of Education**

The Illinois State Board of Education provides leadership, advocacy, and support for the work of school districts, policymakers, and citizens. The eight-member State Board, along with the State Superintendent, is appointed by the Governor.

Responsibilities include improving the quality and supply of the education workforce through certification and professional development, reporting of school and district performances in relation to legislative requirements and Board goals, ensuring compliance with state and federal requirements, and providing programs and services for students with specialized educational needs.



### **Illinois Regional Offices of Education**

The Regional Superintendent of Schools is the chief administrative officer of a Regional Office of Education, and the only elected education professional office in Illinois. As of July 2004, there are 56 Regional Offices of Education (see below). For the most current information, visit [www.iarss.org](http://www.iarss.org). As an intermediate agency between the Illinois State Board of Education and local school districts, the office of the Regional Superintendent performs regulatory functions as directed by the Illinois School Code. Specific duties of the Regional Superintendent fall into two major areas: service and assurance to the public.

Service components include the dissemination of information on education legislation, legal issues, cooperative management, research and administration. The Regional Superintendent also provides information to citizens about state and local programs that will help meet the needs of their children. The Regional Superintendent serves as an intermediate agent who brings together people, concepts, and resources to provide educational services. Assurances to the public cover areas such as health/life safety inspections, fiscal responsibilities, local school performances, certification, supervision, and curriculum.



In these areas, legislation places enforcement responsibilities on the Regional Superintendent to guarantee that certain minimums are met and legal parameters followed. (A list of the regional offices begins on the next page)

<b>Region No.</b>	<b>Counties served</b>	<b>Location</b>	<b>Telephone/Fax/Website</b>
01	Adams/Pike	507 Vermont Street Quincy, Illinois 62301	217/277-2080 Fax: 217/277-2092 www.wc4.org/
02	Alexander/Johnson/ Massac/Pulaski/ Union	17 Rustic Campus Drive Ullin, Illinois 62992	618/634-2292 Fax: 618/634-2294 www.roe02.k12.il.us/
03	Bond/Effingham/ Fayette	300 South 7th Street Vandalia, Illinois 62471	618/283-5011 Fax: 618/283-5013 www.fayette.k12.il.us/roeweb/
04	Boone/Winnebago	300 Heart Boulevard Loves Park, Illinois 61111-7516	815/636-3060 Fax: 815/636-3069 www.4roe.org/
08	Carroll/JoDavies/ Stephenson	500 North Rush Street Stockton, Illinois 61085	815/947-3810 Fax: 815/947-2717 http://roe8.lth2.k12.il.us/
09	Champaign/Ford	200 South Fredrick Street Rantoul, Illinois 61866	217/893-3219 Fax: 217/893-0024 www.roe9.k12.il.us/home.html
10	Christian/ Montgomery	101 South Main Street Taylorville, Illinois 62568	217/824-4730 Fax: 217/824-2464 www.montgomery.k12.il.us
11	Clark/Coles/ Cumberland/ Douglas/Edgar/ Moultrie/Shelby	730 7th Street Suite A Charleston, Illinois 61920	217/348-0151 Fax: 217/348-0171 www.roe11.k12.il.us/
12	Clay/Crawford/ 103 Jasper/Lawrence/ Richland	West Main Street Olney, Illinois 62450	618/392-4631 Fax: 618/392-3993 www.roe12.k12.il.us/
13	Clinton/Marion/ Washington	930-B Fairfax Street Carlyle, Illinois 62231	618/594-2432 Fax: 618/594-7192 www.roe13.k12.il.us
14	Suburban Cook	10110 Gladstone Westchester, Illinois 60154	708/865-9330 Fax: 708/865-9338 www.cook.k12.il.us/
16	DeKalb	245 W. Exchange St., Suite 2 Sycamore, Illinois 60178	815/895-3096 Fax: 815/895-4847 http://dekalbroe.org/
17	DeWitt/Livingston/ McLean	905 N. Main St., Suite One Normal, Illinois 61761	309/888-5120 Fax: 309/862-0420 www.roe17.k12.il.us/

<b>Region No.</b>	<b>Counties served</b>	<b>Location</b>	<b>Telephone/Fax/Website</b>
19	DuPage	421 County Farm Road Wheaton, Illinois 60187	630/682-7150 Fax: 630/682-7773 <a href="http://www.dupage.k12.il.us/">www.dupage.k12.il.us/</a>
20	Edwards/Gallatin/ Hardin/Pope/Saline/ Wabash/Wayne/White	512 North Main Street Harrisburg, Illinois 62946	618/253-5581 Fax: 618/252-8472 <a href="http://www.roe20.k12.il.us/">www.roe20.k12.il.us/</a>
21	Franklin/ Williamson	202 West Main Benton, Illinois 62812	618/438-9711 Fax: 618/435-2861 <a href="http://www.roe21.k12.il.us/">www.roe21.k12.il.us/</a>
22	Fulton/Schuyler	P.O. Box 307, 100 North Main Fulton County Courthouse Lewistown, Illinois 61542	309/547-3041 Ext.27/28 Fax: 309/547-3326 <a href="http://fulton.k12.il.us/quickanswers22/">http://fulton.k12.il.us/ quickanswers22/</a>
24	Grundy/Kendall	1320 Union Street Morris, Illinois 60450	815/941-3247 Fax: 815/942-5384 <a href="http://www.grundy.k12.il.us/">www.grundy.k12.il.us/</a>
25	Hamilton/Jefferson	1714 Broadway Street Mount Vernon, Illinois 62864	618/244-8040 Fax: 618/244-8073 <a href="http://www.roe25.com/home.htm">www.roe25.com/home.htm</a>
26	Hancock/ McDonough	130 South LaFayette, Suite 200 Macomb, Illinois 61455-2556	309/837-4821 Fax: 309/837-2887 <a href="http://mcdonough.k12.il.us/roe26/">http://mcdonough.k12.il.us/ roe26/</a>
27	Henderson/ Mercer/Warren	200 West Broadway Monmouth, Illinois 61462	309/734-6822 Fax: 309/734-2452 <a href="http://www.hmwroe27.com">www.hmwroe27.com</a>
28	Bureau/Henry/Stark	107 S. State Street Atkinson, Illinois 61235	309/936-7890 Fax: 309/936-1111 <a href="http://www.bhsroe.k12.il.us/bhs/">www.bhsroe.k12.il.us/bhs/</a>
30	Jackson/Perry	Jackson County Courthouse 1001 Walnut Street Murphysboro, Illinois 62966	618/687-7290 Fax: 618/687-7296 <a href="http://www.roe30.k12.il.us/">www.roe30.k12.il.us/</a>
31	Kane	210 South 6 <sup>th</sup> Street Geneva, Illinois 60134	630/232-5955 Fax: 630/208-5115 <a href="http://www.kane.k12.il.us/">www.kane.k12.il.us/</a>
32	Iroquois/Kankakee	189 East Court Street Suite 600 Kankakee, Illinois 60901	815/937-2950 Fax: 815/937-2921 <a href="http://www.roe32.k12.il.us/">www.roe32.k12.il.us/</a>
33	Knox	161 South Cherry Street P.O. Box 430 Galesburg, Illinois 61401	309/345-3828 Fax: 309/343-2677 <a href="http://knox.k12.il.us/knoxcountyroe33/">http://knox.k12.il.us/ knoxcountyroe33/</a>

<b>Region No.</b>	<b>Counties served</b>	<b>Location</b>	<b>Telephone/Fax/Website</b>
34	Lake	800 Lancer Lane Suite E-128 Grayslake, Illinois 60030-2656	847/543-7833 Fax: 847/543-7832 <a href="http://www.lake.k12.il.us/">www.lake.k12.il.us/</a>
35	LaSalle	119 West Madison Room 102 Ottawa, Illinois 61350	815/434-0780 Fax: 815/434-2453 <a href="http://www.roe35.lth2.k12.il.us/main.html">www.roe35.lth2.k12.il.us/ main.html</a>
38	Logan/Mason/ Menard	Logan County Courthouse 122 N. McLean Street P.O. Box 460 Lincoln, Illinois 62656	217/732-8388 Fax: 217/735-1569 <a href="http://logan.k12.il.us/quickanswers38/index.html">http://logan.k12.il.us/ quickanswers38/index.html</a>
39	Macon/Piatt	1690 Huston Drive Decatur, Illinois 62526	217/872-3721 Fax: 217/872-0239 <a href="http://www.roe39.k12.il.us/">www.roe39.k12.il.us/</a>
40	Calhoun/Greene/ Jersey/Macoupin	220 North Broad Street Carlinville, Illinois 62626	217/854-4016 Fax: 217/854-2032 <a href="http://www.macoupin.k12.il.us/">www.macoupin.k12.il.us/</a>
41	Madison	157 North Main, Suite 438 P. O. Box 600 Edwardsville, Illinois 62025	618/692-6200 Ext. 4530 Fax: 618/692-7018 <a href="http://www.madison.k12.il.us/">www.madison.k12.il.us/</a>
43	Marshall/ Putnam/Woodford	117 South Jefferson Street P.O. Box 340 Washburn, Illinois 61570-0340	309/248-8212 Fax: 309/248-7983 <a href="http://www.roe43.k12.il.us/">www.roe43.k12.il.us/</a>
44	McHenry	2200 North Seminary Avenue Woodstock, Illinois 60098	815/334-4475 Fax: 815/338-0475 <a href="http://www.mchenry.k12.il.us/">www.mchenry.k12.il.us/</a>
45	Monroe/Randolph	107 E. Mill Street Waterloo, Illinois 62298	618/939-5650 Fax: 618/939-5332 <a href="http://www.monroe.k12.il.us/roe/">www.monroe.k12.il.us/roe/</a>
46	Brown/Cass/ Morgan/Scott	110 N. West Street Jacksonville, Illinois 62650	217/243-1804 Fax: 217/243-5354 <a href="http://morgan.k12.il.us/roe46/">http://morgan.k12.il.us/roe46/</a>
47	Lee/Ogle	7772 Clinton St.-Grand Detour Dixon, Illinois 61021	815/652-2054 Fax: 815/652-2053 <a href="http://www.leecogle.lth2.k12.il.us/">www.leecogle.lth2.k12.il.us/</a>
48	Peoria	Peoria County Courthouse 211 Fulton, Suite 207 Peoria, Illinois 61602	309/672-6906 Fax: 309/672-6053 <a href="http://peoria.k12.il.us/roe48/">http://peoria.k12.il.us/roe48/</a>
49	Rock Island	3430 23rd Avenue Moline, Illinois 61265	309/736-1111 Fax: 309/736-1127 <a href="http://www.riroe.k12.il.us/riroe/">www.riroe.k12.il.us/riroe/</a>



<b>Region No.</b>	<b>Counties served</b>	<b>Location</b>	<b>Telephone/Fax/Website</b>
50	St. Clair	500 Wilshire Drive Belleville, Illinois 62223	618/397-8930 Ext. 144 Fax: 618/397-8928 <a href="http://www.stclair.k12.il.us/">www.stclair.k12.il.us/</a>
51	Sangamon	Sangamon County Complex 200 South Ninth Street Room 303 Springfield, Illinois 62701-1629	217/753-6620 Fax: 217/535-3166 <a href="http://www.roe51.org">www.roe51.org</a>
53	Tazewell	Tazewell Building 414 Court Street, Suite 104 P. O. Box 699 Pekin, Illinois 61555-0699	309/477-2290 Fax: 309/347-3735 <a href="http://www.tazewell.k12.il.us/quickanswers53/">www.tazewell.k12.il.us/ quickanswers53/</a>
54	Vermilion	200 South College Street Suite B Danville, Illinois 61832	217/431-2668 Fax: 217/431-2671 <a href="http://www.roe54.k12.il.us/">www.roe54.k12.il.us/</a>
55	Whiteside	1001 West 23rd Street Sterling, Illinois 61081	815/625-1495 Fax: 815/625-1625 <a href="http://wside.k12.il.us/">http://wside.k12.il.us/</a>
56	Will	302 N. Chicago Street Joliet, Illinois 60432-4059	815/740-8360 Fax: 815/740-4788 <a href="http://www.will.k12.il.us/">www.will.k12.il.us/</a>

### **The School Board and the Superintendent**

Outside of Chicago, the School Board consists of locally elected officials, who then hire the Superintendent. Fundamental duties of a School Board include:

- Governing the School District
- Continuing to shape with the community a mutual understanding of the purposes of the school district
- Communicating the goals and monitoring the performance of the district
- Selecting the Superintendent
- Overseeing basic legal and ethical standards and responsibilities
- Analyzing its own performance

Responsibilities of the Superintendent include:

- Serving as Chief Executive Officer
- Recommending applicants for appointment to the school staff and promote a strong staff development program
- Interpreting needs and making recommendations to improve education
- Implementing board decisions and policies
- Managing the fiscal and administrative operations of the school district

### **Illinois State Legislators**

To identify your State Senator or Representative and obtain contact information go to:

Senate: <http://www.legis.state.il.us/senate/>

House: <http://www.legis.state.il.us/house/>



# APPENDIX D

## ILLINOIS AGENCIES



The following listings are for state agencies that deal with the issues addressed in this resource guide.



### **ILLINOIS DEPARTMENT OF AGRICULTURE**

The Illinois Department of Agriculture regulates pesticides and pesticide application.

Illinois Department of Agriculture  
State Fairgrounds  
P.O. Box 19281  
Springfield, Illinois 62794-9281  
217-782-2172



### **ILLINOIS DEPARTMENT OF PUBLIC HEALTH**

The Illinois Department of Public Health's Division of Environmental Health protects the public from improperly prepared and used pesticides, from groundwater contamination around commercial pesticide storage sites, and promotes the concept of integrated pest management in schools. Illinois has approximately 750 licensed structural pest control business locations as well as 60 registered non-commercial (not-for-hire, in-house pest control) locations that use restricted pesticides. The division licenses and routinely inspects each of these locations. It also certifies approximately 2,600 individuals by examination to use or oversee the application of general and restricted-use pesticides, and investigates incidents of pesticide misuse.

### **ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

The Illinois Environmental Protection Agency regulates the treatment, storage and disposal of hazardous wastes.

**Region 1** 4302 North Main Street  
Rockford, Illinois 61103  
815-987-7760

Boone, Bureau, Carroll, DeKalb, JoDaviess, Lee, LaSalle, Ogle,  
Putnam, Stephenson, Whiteside, Winnebago counties

**Region 2** 9511 W. Harrison Street  
DesPlaines, Illinois 60016  
847-294-4000

Cook, DuPage, Grundy, Kane, Kankakee, Kendall, Lake,  
McHenry, Will counties



<b>Region 3</b>	<i>Bureau of Air, Water</i> 5415 North University Suite 210 Peoria, Illinois 61614 309-693-5463	<i>Bureau of Land</i> 7620 North University, Peoria, Illinois 61614  309-693-5462
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Fulton, Hancock, Henderson, Henry, Knox, Marshall, McDonough, Mercer, Peoria, Rock Island, Stark, Tazewell, Warren, Woodford counties

<b>Region 4</b>	2125 South First Street Champaign, Illinois 61820 217-278-5800
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Champaign, Clark, Coles, Crawford, Cumberland, Dewitt, Douglas, Edgar, Effingham, Ford, Iroquois, Jasper, Livingston, Macon, McLean, Moultrie, Piatt, Shelby, Vermilion counties

<b>Region 5</b>	4500 South Sixth Street Road Springfield, Illinois 62706 217-786-6892
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Adams, Brown, Calhoun, Cass, Christian, Greene, Jersey, Logan, Macoupin, Mason, Menard, Montgomery, Morgan, Pike, Sangamon, Schuyler, Scott counties

<b>Region 6</b>	2009 Mall Street Collinsville, Illinois 62234 618-346-5120
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Marion, Monroe, Randolph, St. Clair, Washington counties

<b>Region 7</b>	2309 W. Main Street Marion, Illinois 62959 618-993-7200
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Alexander, Clay, Edwards, Franklin, Gallatin, Hamilton, Hardin, Jackson, Jefferson, Johnson, Lawrence, Massac, Perry, Pope, Pulaski, Richland, Saline, Union, Wabash, Wayne, White, Williamson counties



## APPENDIX E

# ILLINOIS OCCUPATIONAL & CHILDREN'S HEALTH RESOURCES



The following listings are for organizations and agencies that deal with occupational and/or children's health issues.



### **OCCUPATIONAL HEALTH SERVICE INSTITUTE University of Illinois-Chicago School of Public Health**

The Occupational Health Service Institute (OHSI) provides a comprehensive range of occupational and environmental health services to businesses, unions, governmental agencies, communities, and individuals.

Current services include an occupational and environmental medicine clinic affiliated with the Association of Occupational and Environmental Clinics; a medical surveillance program; a travelers' health and immunization program; a medical advisorship program, and a health hazard evaluation program.

OHSI also develops innovative programs to serve special risk populations such as its new "Health in the Arts Program" that serves the needs of anyone working in the arts.

OHSI offers medical assistance through its Occupational and Environmental Medicine Clinics in Chicago.

The clinics' healthcare services include:

- Evaluation and treatment of occupational and environmental injuries and diseases, such as: Asthma, allergies, asbestos-related diseases, cancer, toxicology conditions, carpal tunnel syndrome, sick building syndrome
- Medical consultations to other health care providers
- Independent Medical Examinations (IMEs)
- Medical surveillance evaluations
- Foreign travel examinations and immunizations

#### **Locations and appointments:**

The UIC Occupational and Environmental Medicine Clinic is located in University Health Service  
835 South Wolcott, Room E-144  
Chicago, Illinois 60612

To schedule an appointment at the University of Illinois Clinic, please call 312-413-0369.



**Locations and appointments (continued):**

The Cook County Occupational and Environmental Medicine Clinic is located in Fantus Clinic  
637 South Winchester, 4th Floor  
Chicago, Illinois 60612

Woodlawn Health Center of Cook County  
6337 South Woodlawn Avenue  
Chicago, Illinois 60637

To schedule an appointment at this clinic, please call 312-747-7732.

**CENTER FOR CHILDREN'S ENVIRONMENTAL HEALTH  
University of Illinois-Chicago School of Public Health**

The Great Lakes Center for Children's Environmental Health was established in 1999 in partnership with the U.S. EPA and the Agency for Toxic Substance and Disease Registry to promote and protect children's health through prevention, education, diagnosis and treatment of environmentally related diseases.

The Children's Clinic has a multi-disciplinary pediatric environmental health clinic staffed by experts in environmental medicine, pediatrics, clinical toxicology, and industrial hygiene. The clinic is open to children from infancy through adolescence and evaluates children with environmental exposures to chemicals, physical stressors, and bio-aerosols. We accept self-referrals as well as physician referrals.

**Location and appointments:**

Fantus Clinic  
1901 West Polk, Room 500  
Chicago, Illinois 60612  
To schedule an appointment, please call 312-864-5520

**Illinois Department of Labor (IDOL)**

Public Employee Safety Division  
1 W. Old State Capitol Plaza  
Room 300  
Springfield, Illinois 62701

Safety Inspection and Education Division 217-782-9386

Toxic Substances Disclosure 217-782-9386

This division investigates exposure to hazardous substances or conditions in the public workplaces. Staff also can provide educational materials concerning occupational health.



The Illinois Health and Safety Act (820 ILCS 225/0.1) and the Safety Inspection and Education Act (820 ILCS 220/0.01) provide safety and health protection for public employees in the State of Illinois, and require that employers furnish places of employment, which are free from recognized hazards that cause or are likely to cause death or serious physical harm. The employers shall comply with occupational safety and health standards adopted under these Acts.



The Safety Inspection and Education Division of IDOL is responsible for inspecting public facilities in the State of Illinois, protecting employees from unsafe and unhealthy working conditions through enforcement of the Acts, and for the adoption of U.S. Department of Labor OSHA standards.

These facilities include, but are not limited to, state, county and municipal agencies, park and school districts and volunteer fire departments.

Inspectors conduct various types of inspections and investigations, which include:

- Fatalities and Catastrophes
- Imminent Danger and Complaints
- General Schedule
- Advisory (Voluntary Compliance)

The Safety Inspection and Education Division offers a free advisory inspection program for public employers.

Upon request, the Division will evaluate your work site to determine compliance status. Advantages include:

- No monetary penalties
- Predetermined inspection schedule
- No inspection fee
- Removal from the general inspection rolls for one year.

## **Great Lakes Centers for Occupational and Environmental Safety and Health's Occupational Health Service Institute**

University of Illinois, School of Public Health  
2121 W. Taylor St., Room 215, M/C 922  
Chicago, Illinois 60612  
[www.uic.edu/sph/glakes/occupational/occu\\_main.htm](http://www.uic.edu/sph/glakes/occupational/occu_main.htm)

The Occupational Health Service Institute provides a comprehensive range of occupational and environmental health services to businesses, unions, governmental agencies, communities, and individuals.



## **Illinois Department of Public Health**

Division of Environmental Health  
525 West Jefferson Street  
Springfield, Illinois 62761  
217-782-5830  
TTY (hearing impaired use only) 1-800-547-0466

This department assesses the health effects of exposure to hazardous substances or conditions in the home, workplace, or environment. Staff develops resource materials for health professionals and citizens about exposure to hazardous substances or conditions. Staff also presents educational programs to citizens and health professionals regarding environmental and occupational health. They review and interpret chemical- and concept-specific literature, and develop special reports on key environmental issues.

## **Chicago Area Committee on Occupational Safety and Health**

1636 West Van Buren  
Chicago, Illinois 60612  
312-666-1611

The Chicago Area Committee on Occupational Safety and Health unites doctors, health and safety professionals, attorneys, unions and individual workers. It serves labor unions, community organizations, and union and non-union workers by providing education, information, advocacy and strategic advice.





Throughout Illinois, some schools have preferred to keep information about environmental issues or hazards: air quality problems, pesticide applications, lead or radon testing, fire hazards, inspections, plans, etc. confidential.



### You have a right to information about your school buildings and grounds.

Records and reports about the conditions of the buildings, copies of Certificates of Occupancy, Fire Safety Inspections, Emergency Management Plans, AHERA reports, 10-year health/life/safety resurvey of schools, Annual Inspection Reports, complaints to Health and Safety Committees, Facility Report Cards, Integrated Pest Management plans, and much more must be made available to the public upon request. You can request the information pursuant to the Illinois Freedom of Information Act, 5 ILCS 140.



The Illinois “Toxic Substances Disclosure to Employees Act”, 820 ILCS 255/1 *et seq.* is Illinois’ Right to Know Law. Although it doesn’t set exposure limits, it requires that employees be properly informed about the hazardous substances they are being exposed to at work. Employers shall provide all employees with an education and training program with respect to all toxic substances to which the employee is routinely exposed in the course of his or her employment.

### Is there a law on RIGHT TO KNOW ABOUT INFORMATION in schools?

- Yes. The Illinois Freedom of Information Act (FOIA), 5 ILCS 140 requires local governmental bodies to maintain certain information and allows public access and inspection of this information. The Illinois Attorney General offers an excellent guide to this law at [www.illinoisattorneygeneral.gov/government/foia\\_illinois.html](http://www.illinoisattorneygeneral.gov/government/foia_illinois.html)
- Use FOIA if your school denies a known document exists or refuses to let you see it. Some records are legally exempt. Only existing records are subject to disclosure. An agency is not required to prepare a new record to respond to a request.





## APPENDIX G

# SAMPLE COMPLAINT LETTERS



The following are samples of what letters to one of the agencies could look like. Feel free to copy it word for word, filling in the blanks so that it applies to your specific situation. It is important to include information such as when, where, and what you saw, whatever it was that made you concerned. The more information you provide, the easier it will be to fix the problem. However, just because you don't know or don't remember every detail, doesn't mean that you shouldn't report it or that it won't be fixed.



### For Parents:

Your Name  
Your Address  
Your City, State, Zip  
Your Phone Number

Name of Person  
Agency  
Address of Person  
Person's City, State, Zip

Today's Date

Dear Person/Organization/Agency that will help me with my problem:

My child is a student at \_\_\_\_\_(school)\_\_\_\_\_in district \_\_\_\_\_(name of district)\_\_\_\_\_. When I visited my child's school on \_\_\_\_\_(write date of incident) I became concerned that my child's health might be at risk in school because I noticed

---

*(Explain what you or you child saw that you think could affect your child's health, for example: mold, pests, peeling paint, something that might be asbestos, a lack of fire extinguishers, etc.). I understand that this violates*

---

*(If a law was mentioned in the guide that addresses what you saw, list it here, for example: Integrated Pest Management in Schools Act, Public Act 91-0525, etc.). What can be done to remedy this situation? I am not happy that my child is being exposed to this condition. Please call me \_\_\_\_\_(write your number here) between the hours of \_\_\_\_\_(write the hours that you are available) or write me at the above address and tell me how and when this problem is going to be resolved.*

Thank you for your time and help.

Sincerely,

Your Name



## For Employees:

The more information you provide, the easier it will be to fix the problem.

However, just because you don't know or don't remember every detail, doesn't mean that you shouldn't report it.

Your Name  
Your Address  
Your City, State, Zip  
Your Phone Number

Name of Person  
Agency  
Address of Person  
Person's City, State, Zip

Today's Date

Dear Person/Organization/Agency that will help me with my problem:

I am a school employee at \_\_\_\_\_ in district \_\_\_\_\_ . Since \_\_\_\_\_ (*insert date that problem began or you first began to notice problem*) I have been experiencing

\_\_\_\_\_ (*fill in health problem: for example: asthma, sore throats, nausea, runny nose*). I'm concerned that there is a condition in school that brought on this problem or is causing the problem to get worse. Specifically, I've noticed \_\_\_\_\_

\_\_\_\_\_ around school. (*Explain what you saw that you think could have affected your health, for example: toxic fumes, dust, mold, etc.*) and that made me concerned about \_\_\_\_\_

\_\_\_\_\_ (*feel free to fill in with one of the categories from the guide, for example: the school's air quality, the possibility of a pest infestation, etc.*). I believe that this problem is in violation of \_\_\_\_\_ (*If a law was mentioned in the guide that addresses what you saw, list it here, for example: Integrated Pest Management in Schools Act, Public Act 91-0525, etc.*). What can be done to remedy this situation? I am not happy that I am being subjected to this condition. Please call me \_\_\_\_\_ (*write your number here*) between the hours of \_\_\_\_\_ (*write the hours that you are available*) or write me at the above address and tell me how and when this problem is going to be resolved.

Thank you for your time and help.

Sincerely,

Your Name

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# “EDUCATIONAL EXPOSURE” SHOULD NOT INCLUDE:

- ⇒ Peeling lead-based paints
- ⇒ Mold
- ⇒ Stopped-up sinks
- ⇒ Overflowing toilets
- ⇒ Asbestos and dust-filled air
- ⇒ Chemicals from cleaning agents or construction
- ⇒ Hazardous art, science and shop supplies
- ⇒ Pest droppings and toxic pesticides
- ⇒ Diesel exhaust



Environmental toxins can affect health and learning and may be linked to the rise in allergies, asthma, chronic infections and some learning disabilities. Children, teachers and others who work in schools every day are exposed to many of these hazards and don't even know it.

The **Healthy Schools Campaign** works to improve the environment for students and school employees by:

- Providing the latest information on school environmental health and increasing public awareness about the link between environmental toxins, health and learning.
- Helping parents, school personnel and other concerned citizens work together to make schools healthy places to learn and work.
- Advocating for school policies and model programs that lead to healthy, productive futures.

If you need to know what's happening and want your voice to be heard by the people who can make a difference:

**Join the Healthy Schools Campaign by calling (312) 419-1810.**

**Or, visit our website at [www.healthyschoolscampaign.org](http://www.healthyschoolscampaign.org).**

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