

School Environmental Health and Safety

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School EHS and IAQ Programs
2016 Fall Workshops



Public Health – Always Working for a Safer and Healthier Washington

Washington State Department of Health School Environmental Health & Safety Program

Our Mission

To protect and improve the
Environmental Health and Safety
condition of schools in Washington state.



DOH School Environmental Health & Safety Program

Provide technical support & training

- Local Health Jurisdictions (LHJs)
- Schools

Authority

- **RCW 43.20.050(2)(c)** Adopt rules controlling public health related to environmental conditions including but not limited to heating, lighting, ventilation, sanitary facilities, cleanliness and space in all types of public facilities including but not limited to food service establishments, **schools**, institutions, ...
- **WAC 246-366**
- **DOH / OSPI K12 Health & Safety Guide**

School

Environmental Health and Safety

- ▶ **Animals**
- ▶ **Control of Communicable & Zoonotic Diseases**
 - Disinfection and Green Cleaning
- ▶ **Hazardous Chemicals**
 - Arts, Science Labs, CTE
- ▶ **Indoor Air Quality**
 - Asthma, Mold, Particulates Ventilation, Filtration
- ▶ **Injury Prevention**
 - Athletics, Playgrounds, Fall Protection
- ▶ **Integrated Pest Management**
- ▶ **Lighting**
- ▶ **Noise**
- ▶ **Thermal comfort**



Governor's Lead Directive

- ▶ WAC 246–366 in effect since at least 1960
- ▶ WAC 246–366A adopted by the SBOH in 2009, implementation prohibited by legislative budget proviso.
- ▶ Recommendations as a result of the GLD will be finalized by the end of October.
 - A decision package (request for funding) may include support for WAC 246–366 across the state.
 - School drinking water testing funding may be requested.

Global Handwashing Day – October 14

- ▶ “Handwashing – prevent respiratory and many gastrointestinal infections!”
- ▶ CDC: *Handwashing: Clean Hands Save Lives*
 - <http://www.cdc.gov/handwashing/training-education.html>
 - Classroom Lessons & Activities
 - Learning Tools & Materials
- ▶ CDC: *When & How to Wash Your Hands*
 - <http://www.cdc.gov/handwashing/when-how-handwashing.html>
- ▶ 4 Principals of Hand Awareness
 1. Wash your hands when they are dirty & BEFORE eating
 2. DO NOT cough into your hands
 3. DO NOT sneeze into your hands
 4. Do not touch the “T ZONE” –of the eyes, nose & mouth.



New Carbon Monoxide Alarm Rules

- ▶ The State Building Code Council adopted the 2015 IBC and IFC with amendments regarding CO Alarms
- ▶ New building/fire code requirements for certain Group E occupancies
 - [WAC 51-50-0915](#)
 - [WAC 51-54A-0915](#)
- ▶ Alarms must meet the requirements of NFPA 720 – 2015 edition

<https://fortress.wa.gov/ga/apps/sbcc/Page.aspx?nid=168>

Wired Glass

- ▶ USCPSC – !2,250 injuries/year in schools
- ▶ Gym and hallway doors, stairwells
- ▶ 8 mil safety/security window film
 - Interior portion of the wired glass
 - Follow manufacturer's recommendations
 - Direct UV deteriorates
 - No abrasives
- K12 H&S Guide C 001 – safety glass required – doors, display cases, large glass areas
- WSRMP September 2016

Who Are Your Neighbors?

- ▶ West Fertilizer Company Explosion April 17, 2013, 7:51 PM
 - Chemical Safety Board investigation
- ▶ Fertilizer-grade ammonium nitrate
 - 12.5 tones of TNT
- ▶ 15 died(12 emergency responders), 260 injured, 150+ offsite buildings destroyed including a middle and high school
 - MS – ~550 feet – w/i ¼ mile radius, HS – ~1,150 feet – w/i ½ mile radius
- ▶ Consult with your local emergency response officials

Environmental Health Perspectives, October 2016

[School siting near industrial chemical facilities: findings from the US Chemical Safety Board's investigation of the West Fertilizer explosion.](#)

Shelter in Place

- ▶ Move students to your assigned shelter location.
- ▶ Bring any students in hallways with you to the shelter location.
- ▶ Lock exterior doors near your room.
- ▶ Keep students calm and busy.
- ▶ Take attendance.
- ▶ Use e-mail or text message. Do not use phone to call.
- ▶ Close windows and seal them if directed.
- ▶ Turn off classroom heating and air vents. Cover vents.

Schools and Pesticides

<http://www.doh.wa.gov/CommunityandEnvironment/Schools/EnvironmentalHealth/Pesticides>

Agricultural Pesticide Drift

Illnesses at schools from exposure to pesticide drift (drifting spray and dust from pesticide applications) from neighboring farmlands have also occurred. There are more than 100 public schools in Washington located within 200 feet of agricultural operations and more than 200 within one-quarter mile. The proximity of schools and agricultural operations presents a risk of unintended exposure of students and staff to pesticides through drift.

To prevent illness, follow [WSU School IPM-Guidelines for Schools Next to Agricultural Operations](#) on how to communicate with agriculturalists about practices to reduce the risk of pesticide drift and on what emergency procedures to take if a drift occurs.



In 2014, three teachers reported illness when pesticides drifted from apple orchards that surround their school. What to do in a [pesticide drift emergency](#).

What to do if a pesticide drift occurs

- ▶ Close up the building
- ▶ Turn off the ventilation
- ▶ Keep people indoors
- ▶ Stop the application
- ▶ Address health concerns
- ▶ Report immediately to the WSDA
 - 1-877-485-7316
- ▶ Notify parents/users
- ▶ Consult/prepare for post event clean up.
 - Open windows/ventilate thoroughly
 - Clean contaminated surfaces – soap and water
 - Monitor for health symptoms
 - Replace all air filters



Art Hazards

[Home](#) >> [Art Hazards](#)

Art Hazards

Art materials in most types of art media contain many **toxic ingredients**. Using these products can result in health problems including dermatitis, allergies, silicosis, liver, kidney or eye damage, reproductive harm, cancer and other ailments.



[Ceramics](#)
[Encaustics](#)
[Glassworking](#)
[Jewelry & Metalsmithing](#)

[Painting & Pastels](#)
[Photo Processing](#)
[Textiles](#)
[Woodworking](#)

[Art Supplies & Safer Storage](#)
[Protect Your Lungs](#)
[Protecting Your Skin & Eyes](#)
[Selecting Protective Gloves for Solvent Use](#)
[Waste Disposal for Artists](#)

[Studio Visits](#)
[Financial Assistance](#)
[4Culture | Guest Blogger](#)
[Art Hazards Video Series \(YouTube\)](#)

<http://hazwastehelp.org/ArtHazards/index.aspx>

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as part of the
King County Local Hazardous Waste Management Program in King County

Connect With Us





Rehab the Lab

Home >> Resources for Schools >> Rehab the Lab

- Hazardous Chemicals in Schools
- School Chemical List
- Proper Disposal of School Chemicals
- Rehab the Lab

Rehab the Lab: Creating Safer School Labs

Program Services

During visits to secondary schools in King County, program staff have found stockpiles of unneeded hazardous chemicals, incompatible chemicals stored together, improper disposal of hazardous wastes and poor chemical hygiene practices. These hazardous chemicals and their related issues are found in science labs, arts and crafts studios and storage rooms, photo labs, and custodial closets. To help improve chemical management in these programs we offer these services.



Rehab the Lab Resources

[Lab Safety Videos](#)

Four short videos provide information on managing hazardous laboratory chemicals, responding to spills, properly storing and labeling chemicals, and disposing of chemicals safely and legally when they're no longer needed.

[Least-toxic chemistry labs](#)

This collection of fully-scripted, least-toxic chemistry labs is ready for use by high school chemistry teachers. The set includes student and teacher guides and meets the Washington State Educational Learning Requirements

[School Chemical List](#)

A searchable database of more than 1,000 school chemicals provides information on hazards arising from acute or chronic exposures. It also describes proper chemical storage, the usefulness of chemicals in lab experiments, recommended maximum grade levels, and proper disposal of waste or leftover chemicals. The database can create an EXCEL spreadsheet that can be used as the school's chemical inventory.

[Science Lab Safety Checklist](#)

The Science Classroom and Lab Reference is a resource designed to help schools comply with health and safety practices required by code and incorporate recommended guidelines to ensure prudent practices. The Reference is designed for online use or to be downloaded and used as a checklist during annual safety inspections.

[Chemical Hygiene Plan \(PDF, WORD\)](#)

Every school that has a science laboratory is required to have a site-specific written chemical hygiene plan. The Secondary School Chemical Hygiene Plan can be customized to meet these requirements and help you create safer labs for your staff and students.

[Safely Storing Chemicals in Small Spaces \(PDF\)](#)

A proper chemical storage system separates materials according to chemical compatibility and hazard class. Many schools try to use the excellent chemical storage system found in Flinn Scientific's catalog. Unfortunately, many school stockrooms are too small to provide 23 separated locations for classes of chemicals. The [downloadable chart](#) combines categories of chemicals that have similar hazardous characteristics. By doing so, you will only need 12 separate storage locations.

Resources

[Mercury in Schools rule](#)

Since January 1, 2006, public and private schools in Washington are prohibited from purchasing, storing or using most mercury-containing products and materials.

Prepare for and prevent a mercury spill. Visit the [Don't Mess with Mercury](#) website for educational materials and animated video messages.

[Chemical Hygiene Planning Requirements](#)

School science labs must comply with State regulations for reducing chemical exposures and improving safety.

[Laboratory Waste Management Guide, April 2014](#)

This guidebook provides recommendations to help analytical, medical, teaching, and biotechnology labs properly manage hazardous materials and reduce hazardous waste.

[Chemical Vignettes](#)

These vignettes are true stories about what can – and does – happen when hazardous chemicals are improperly managed.

- Lab Safety Videos
- Least-toxic chemistry labs
- School Chemical List
- Science Lab safety Checklist
- Chemical Hygiene Plan
- Safely Storing Chemicals in Small Spaces

<http://www.hazwaste-help.org/educators/rehabthelab.aspx>

Suggested spill supplies

- ▶ Personal Protective Equipment
 - Gloves, goggles, sturdy shoes, lab coat/apron
- ▶ Acids
 - Sand/cat litter, sodium carbonate, pH paper test
- ▶ Bases
 - Sand/cat litter, then citric acid, pH paper test
- ▶ Solvents
 - Cat litter/absorbent pads
- ▶ Broom, dustpan,
collection containers w/ lid



Another spill management supply



Major spills

- ▶ It's caused injury to personnel or is likely to cause injury
- ▶ Uncontained and spreading out of the immediate area endangering other labs
- ▶ Has the potential to cause a fire.
- ▶ First steps
 - Pull alarm / Call 911
 - **Secure** and evacuate area at risk



Minor spills

Can you answer YES to these 4 questions?

- If so, it may be safe to clean up the spill

▶ Do you know what chemical was spilled?

▶ Do you know the hazards of the chemical?

▶ Do you have a chemical spill kit?

▶ Can you protect yourself from the hazards?



Student Health & Academic Performance EPA Quick Reference Guide

- ▶ All Children Deserve a Healthy Learning Environment

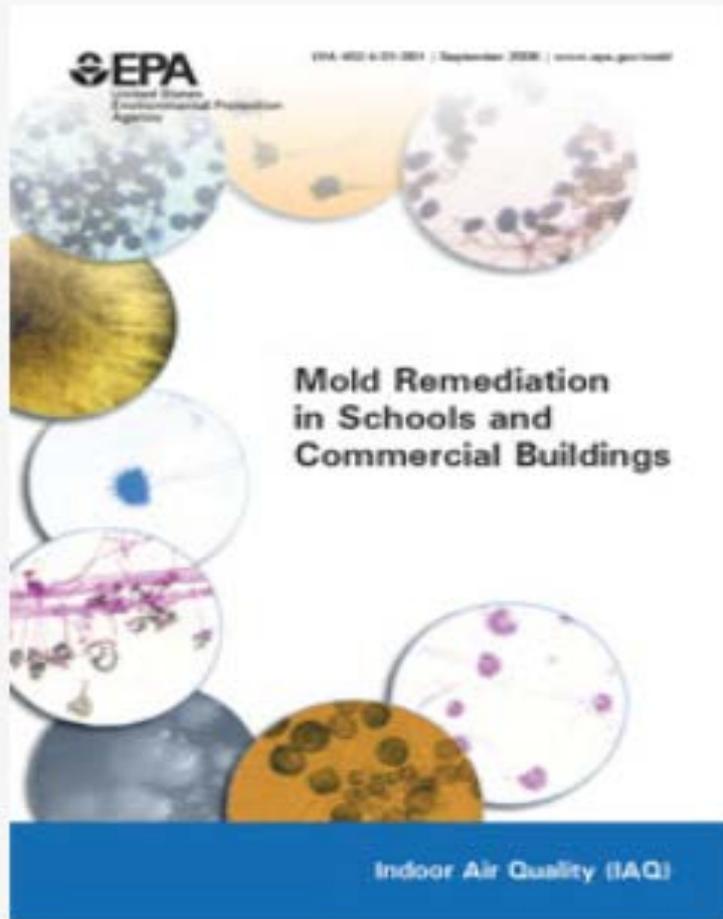
http://www.pehsu.net/_Library/PEHSU_Webinars/EPA_student_performance_findings.pdf

Resources

- ▶ DOH School Indoor Air Quality Best Practices Manual
<http://www.doh.wa.gov/Portals/1/Documents/Pubs/333-044.pdf>
- ▶ Healthy Air Quality in Schools – Tips for Administrators, Custodians, and Teachers
<http://www.doh.wa.gov/Portals/1/Documents/Pubs/333-206.pdf>
- ▶ Classroom Cleaning – Tips for Teachers
<http://www.doh.wa.gov/Portals/1/Documents/Pubs/333-218.pdf>
- ▶ Updated *Automatic External Defibrillator Guidance for Washington State Public Schools*, WASBO Risk Management Committee, May 2016
http://c.ymcdn.com/sites/www.wasbo.org/resource/resmgr/risk_mgmt/AED_Manual_2016.pdf
- ▶ American Lung Association **Sample Fragrance-Free School Policy**
<http://www.healthyschools.org/documents/fragrance-free-policy-sample-updated.pdf>
- ▶ Smart Buildings Center, a project of NEEC, Tool Lending Library:
<http://www.smartbuildingscenter.org/Tool-library/>

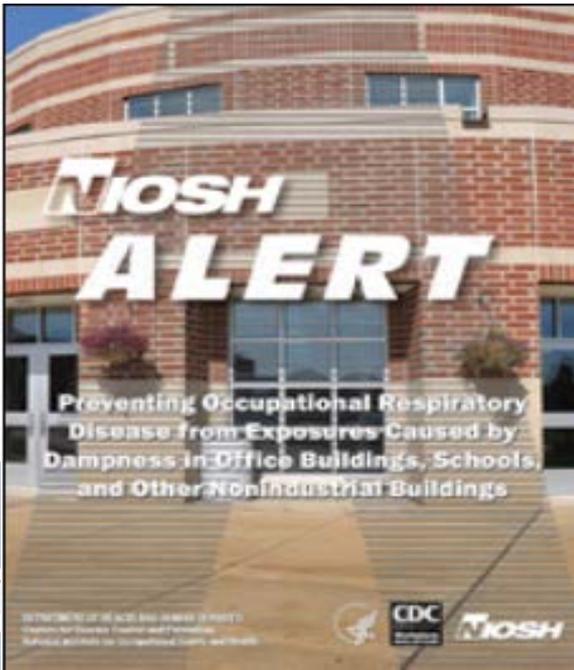
Mold Remediation in Schools and Commercial Buildings

EPA 402-K-01-001, Reprinted
September 2008



http://www.epa.gov/mold/mold_remediation.html

NIOSH Alert: Preventing Occupational Respiratory Disease from Exposures Caused by Dampness in Office Buildings, Schools, and Other Nonindustrial Buildings



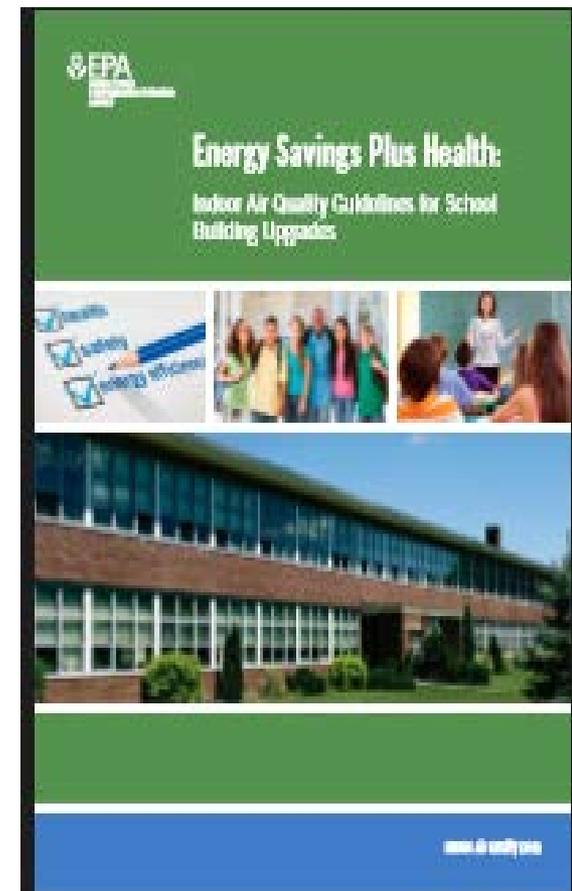
<http://www.cdc.gov/niosh/docs/2013-102/>

Energy Savings Plus Health: IAQ Guidelines for School Building Upgrades New EPA Resource

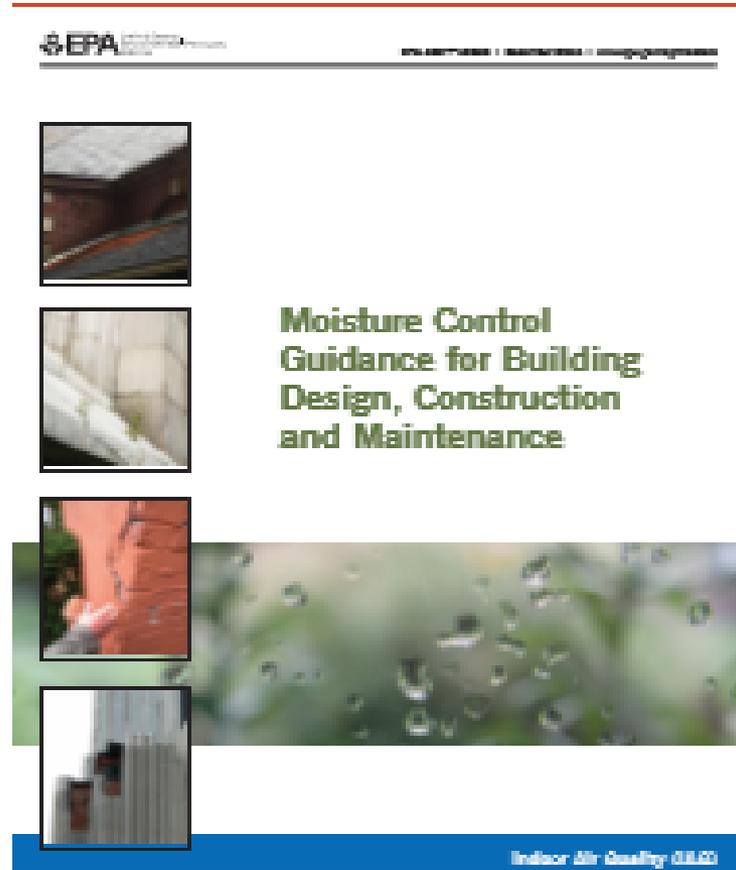
Assessment Protocols and Recommended Actions

- Integrated Process
- Moisture and Mold
- Hazardous Materials
- Outdoor Contaminants and Sources
- Indoor Contaminants and Sources
- Heating, Ventilation, and
Air Conditioning (HVAC)
- Safety

http://www.epa.gov/iaq/schools/pdfs/Energy_Savings_Plus_Health_Guideline.pdf



Moisture Control Guidance for Building Design, Construction and Maintenance, December 2013, USEPA



<http://www.epa.gov/iaq/pdfs/moisture-control.pdf>

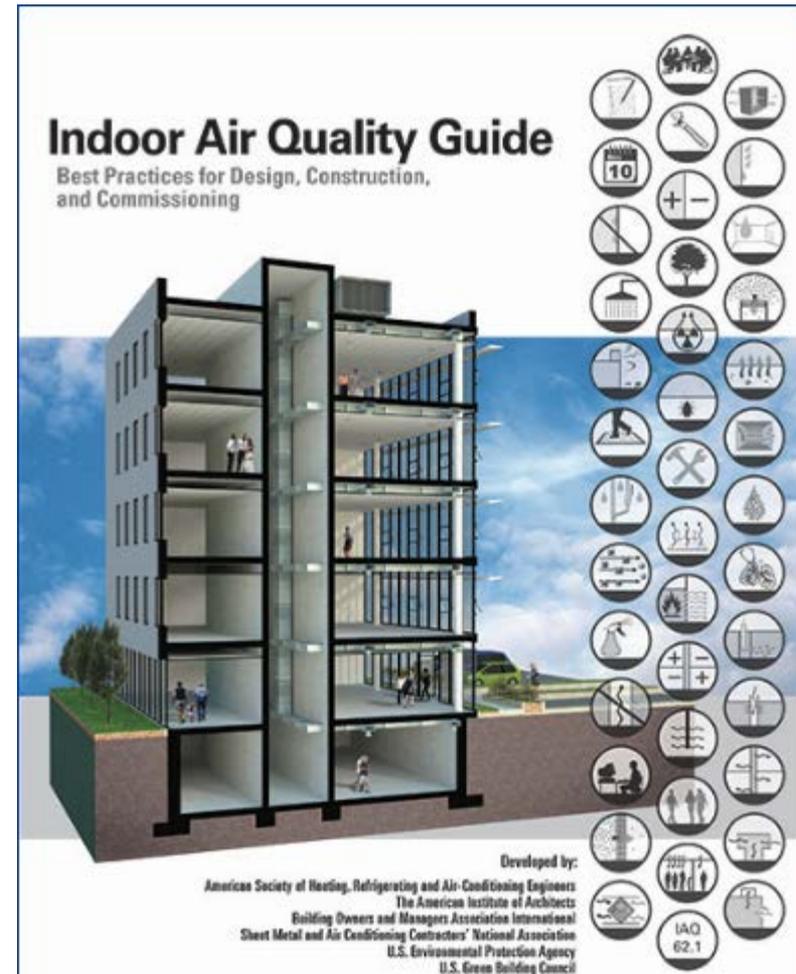
Indoor Air Quality Guide

Best Practices for Design, Construction, and Commissioning

Free ASHRAE download:

<https://www.ashrae.org/resources--publications/bookstore/indoor-air-quality-guide>

Developed in cooperation with the American Institute of Architects, The U.S. Green Building Council, the Builders and Owners Management Association International, the Sheet Metal and Air Conditioning Contractors of North America, and the U.S. Environmental Protection Agency.





Thank You

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Resources available:
www.doh.wa.gov/schoolenvironment
Join my list serve for timely information!