

Indoor Air Quality & Asthma Trigger Reduction

Presented by:

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WHY TALK ABOUT ASTHMA?

- Asthma can be deadly.
- Most asthma episodes can be prevented.
- There are legal requirements that affect how schools deal with students who have asthma.
- Children with asthma account for almost 15 million missed school days a year, and miss more days on average than their friends who don't have asthma.¹

CDC. *Asthma prevalence, health care use and mortality, 2002*. Hyattsville, MD: U.S. Department of Health and Human Services; 2004.

Do school facilities compromise student health and achievement?

- Environmental triggers exacerbate asthma and other respiratory ailments.¹
- 50% of schools serving over 20 million children have unsatisfactory environmental conditions such as poor ventilation, heating and lighting.²
- Studies support the link between poor indoor air quality and low student achievement.^{1,3}

¹*Indoor Air Quality and Student Performance*. Environmental Protection Agency, March 2001, Revised 2003.

²U.S. General Accounting Office. *School Facilities: The Condition of America's Schools*. 2000.

³Schneider, M. *Do School Facilities Affect Academic Outcomes?* National Clearinghouse for Educational Facilities, November 2002.

School facilities and achievement

- Students whose school facilities are in *poor* condition have test scores about 5.5 percentage points below students whose school facilities are in *fair* condition, and about 11 percentage points below students in *excellent* facilities.¹
- 90% of U.S. schools were built before 1980, and 50% before 1960.²

¹*Indoor Air Quality and Student Performance*. Environmental Protection Agency, March 2001, Revised 2003.

²U.S. General Accounting Office. *School Facilities: The Condition of America's Schools*. 2000.

- In 2008 there were more than 14.8 million asthma-related school absences. (Meng. et. al. 2012).
- Per the C.D.C., Asthma Prevalence increased from 7.3 % to 8.4% in 2010.
- In 2011, the American Lung Assoc. reported that 7.1 million children under 18 had asthma.
- The assoc. also reported that the annual direct care health costs of asthma was approx. \$50.1 billion.
- These are the cases that have been diagnosed. It is very likely there are many more un-diagnosed cases causing school absences.



Poor Indoor Air - The Asthma Connection

- Asthma episodes can be triggered by contaminants inside/around school buildings
- Triggers commonly found in school buildings
 - animal dander
 - cockroach body parts and feces
 - dust mites
 - elevated mold spore counts
- Bronchial irritants commonly found in schools
 - fragrances from personal hygiene products, etc.
 - exhaust fumes, ...etc.
 - chemicals and cleaners

INDOOR AIR QUALITY

Americans spend **90%** of their time indoors.

Indoor humidity levels should be **30-60%**

Cigarette smoke contains more than **4,000** chemicals, most of them harmful.

The average American breathes **3,400 gallons** of air each day.

The rate at which outdoor air replaces indoor air is called the **air exchange rate**.

When the air exchange rate is low,

pollutant levels can be high

Asthma Triggers:

- tobacco smoke (including second hand smoke)
- mold
- pets
- unvented gas stoves & appliances
- pests
- pesticides
- outdoor air pollution
- pollen
- dust mites

Asthma

is the most common chronic illness in children.

9% of Utahns suffer from asthma

Types of indoor air pollutants:

Particulate matter

Including: dust, smoke, pollen, animal dander, tobacco smoke, soot, and particles from dust mites, molds, bacteria, and viruses.

Gaseous pollutants

Sources: combustion processes (gas cooking stoves, vehicle exhaust, tobacco smoke), building materials, furnishings, adhesives, paints, varnishes, cleaning products, and pesticides.

Poor indoor air quality is caused by:

- Inadequate ventilation of fresh outdoor air
- Poor upkeep of ventilation, heating and air-conditioning systems
- Excess moisture or high humidity
- Construction or remodeling
- Indoor and outdoor contaminated air

What can schools do?

Be proactive

1. Create local policies that support asthma-friendly schools. Obtain approved Board Policy & Administrative Regulations including “Green Cleaning”, Chemical Hygiene, Art Supplies, etc.
2. Provide school health services for students with asthma.
3. Offer asthma-management education to students, staff, and families.
4. Provide a safe and healthy environment by reducing asthma triggers in the school environment.
5. Coordinate school, family, and community resources to better manage asthma symptoms and reduce school absences.

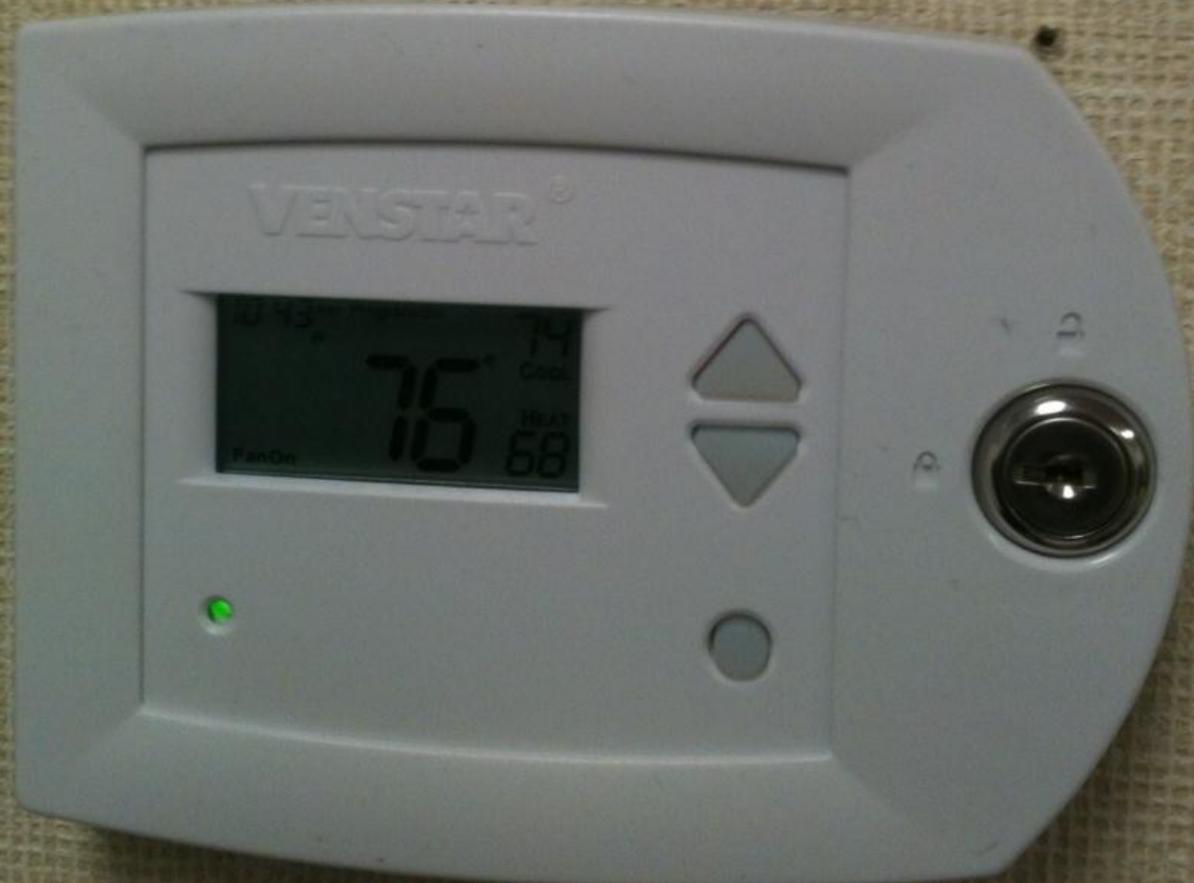
ATTENTION

California State Law Title 24 requires continuous ventilation in this room whenever occupied.

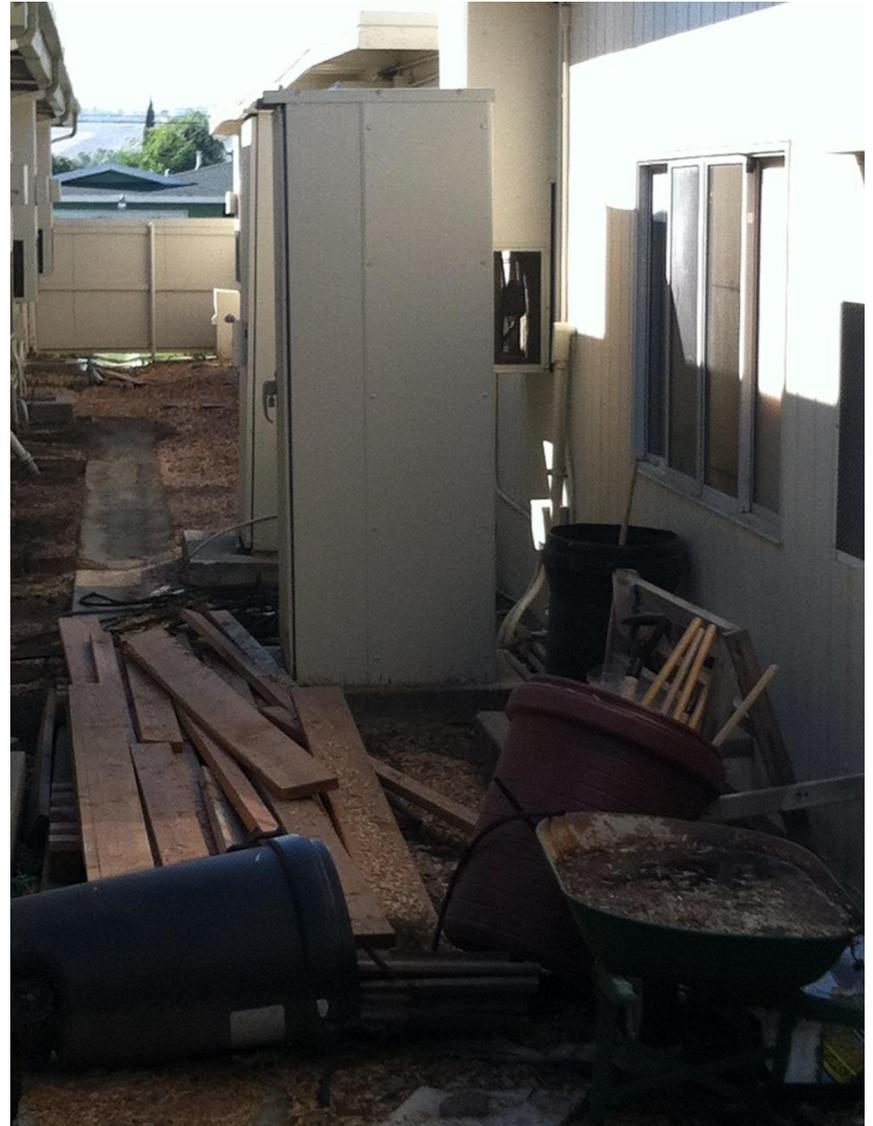
IF THERMOSTAT IS NOT PROGRAMMED FOR VENTILATION

1. Set thermostat fan switch to ON when room is occupied.
2. Return switch to AUTO when room is vacant.

NOTE: Air Filters must be replaced regularly.



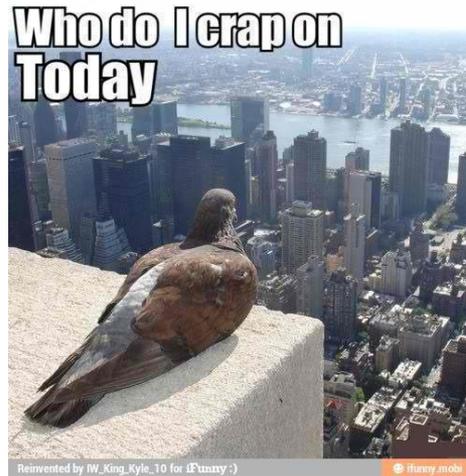
Interior & Exterior Clutter!



Other Exterior Contributors



Who do I crap on
Today





Chemical Management





Integrated Pest Management (I.P.M.)

- The main purpose of an IPM program is to ensure the least toxic methods/products are used to control pests in our schools.
- Following an IPM program will reduce the amount of chemicals in our environment thereby reducing one of the major “Asthma Triggers” (causes of asthma attacks).

What is IPM?

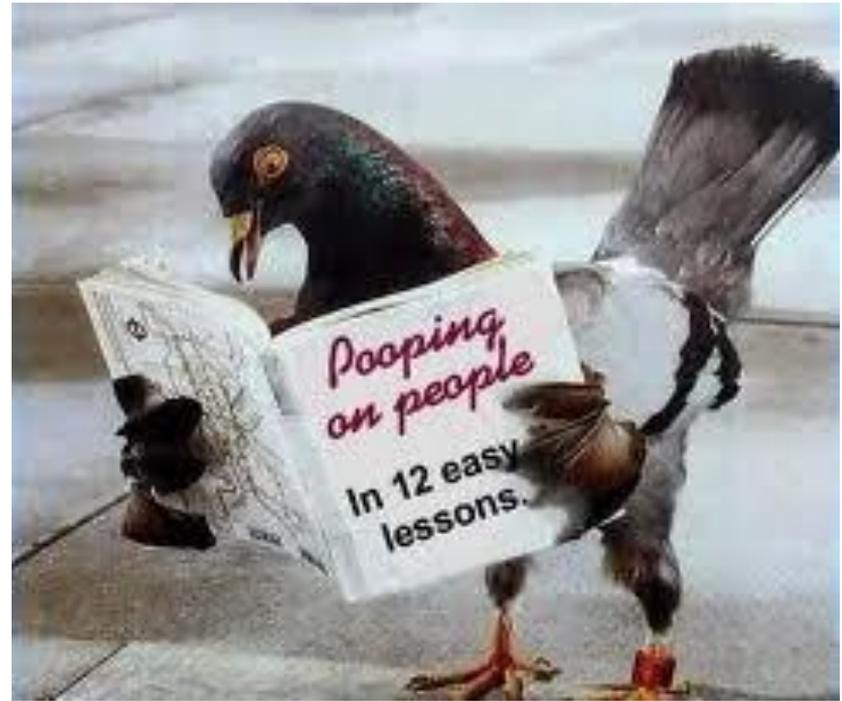


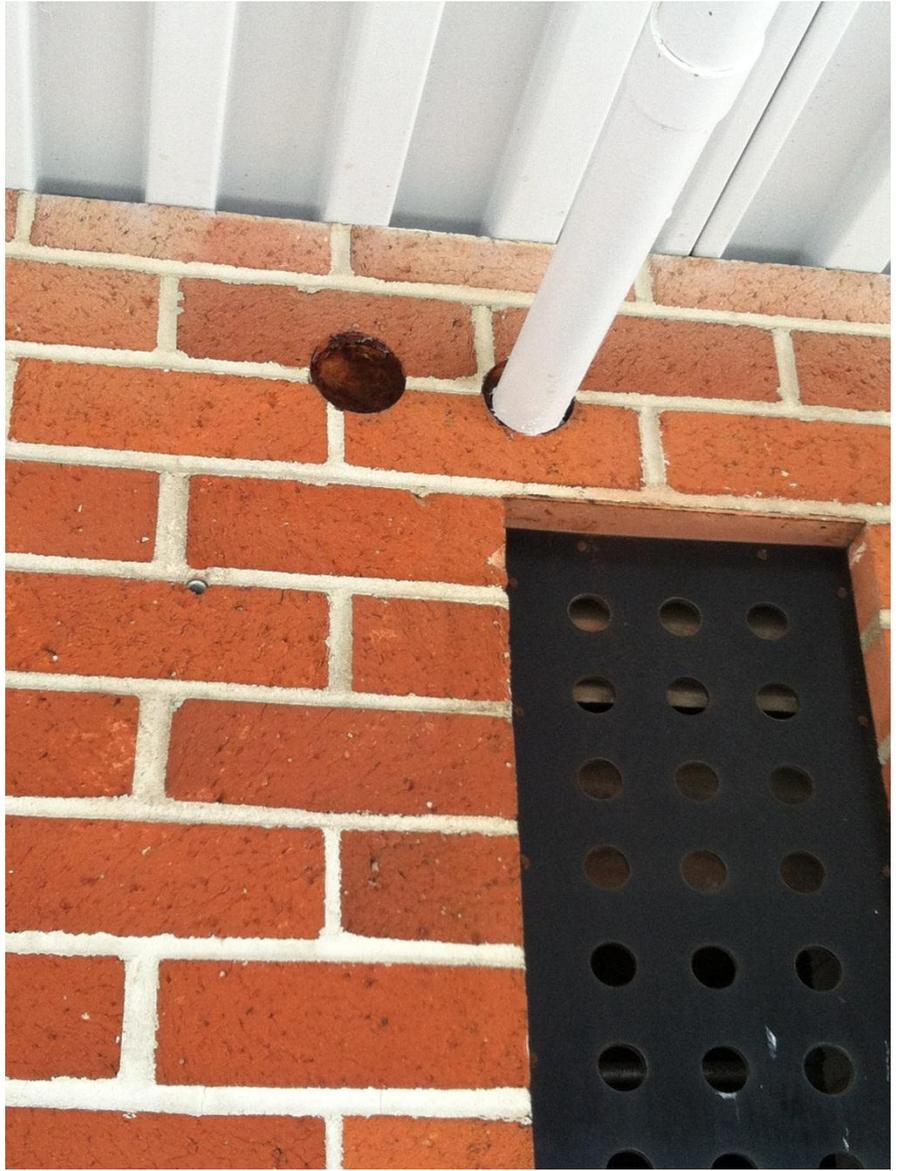
➔ IPM focuses on reducing pest conducive conditions and ecologically sound remedial action

➔ IPM is people oriented and the most effective management strategy.



Pests are smart!





Prevention

- Educate community
 - Inform people about IPM
- Good sanitation
 - Don't feed pests
- Exclusion and pest-proofing
 - Don't let pests in
- Modify the habitat
 - Don't give them a place to live



Pests want the same things we want:
Food Water Shelter

IPM Tactics

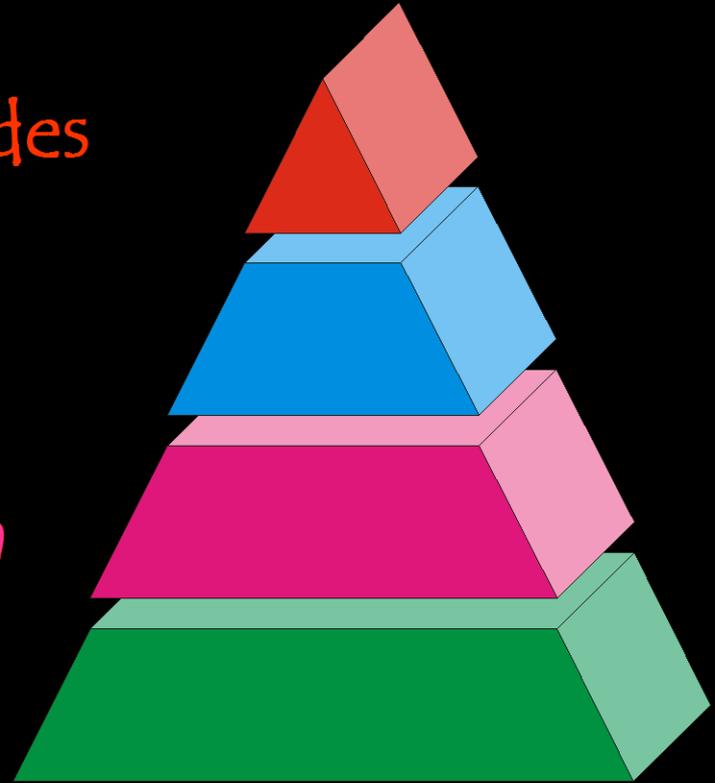


Pesticides

Exclusion

Sanitation and
habitat modification

Education and
communication



Integrated Pest Management (I.P.M.) cont'd

- Indiscriminant spraying or application of pesticides is not the best method for pest control.
- We must keep our schools clean and sanitized to prevent pests from seeking harborage.
- Refrain from eating in the classroom.
- If food or snacks are stored in the classrooms, they **MUST** be stored in air-tight sealed containers.
- If holes or door gaps are present; request repairs right away to prevent pests from entering.
- Don't bring pesticides & cleaning products from home.
- Only use District-approved products for cleaning and pest control.

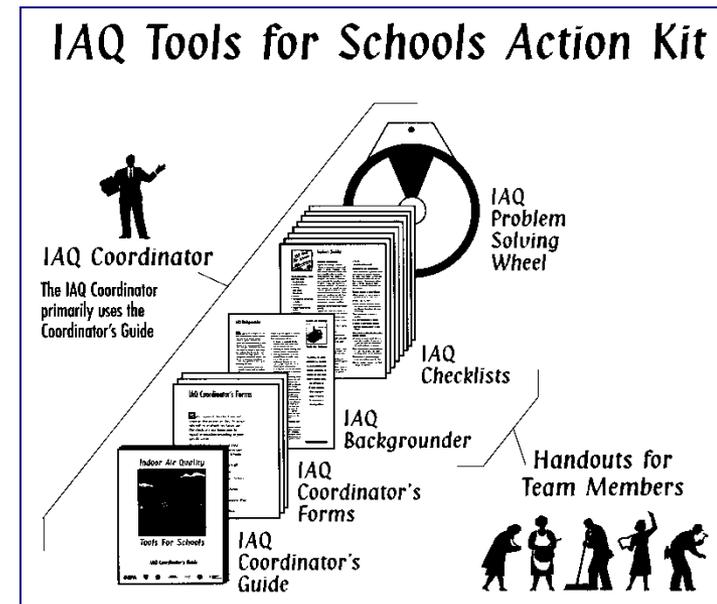




Many IAQ problems can be easily identified and solved by school staff

EPA's Indoor Air Quality **Tools for Schools** Kit provides flexible guidance

- Not burdensome
- Eye-opening
- Simple steps
- Not a lot of training





"Reality"

It costs less to *prevent* IAQ problems than to *fix* them

- TfS helps school districts *prioritize* their IAQ needs
- *Educates* the school community about what's "real" (risks and "solutions") and what's not.



***IAQ Tools for Schools* is Needed Now, More Than Ever**

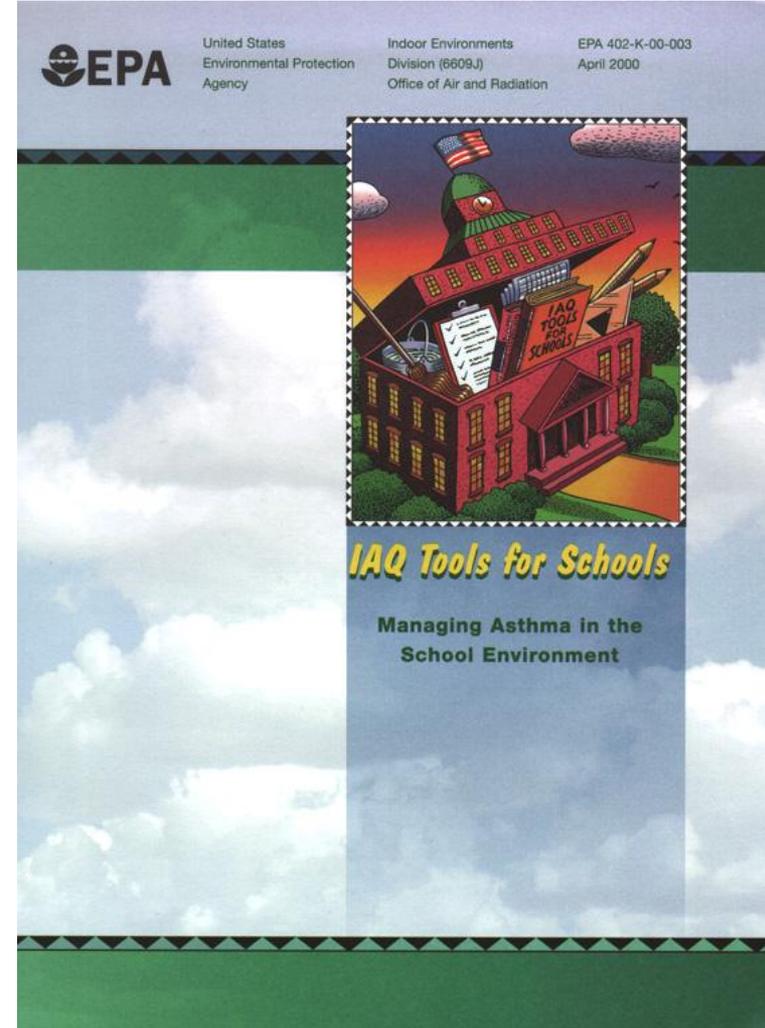
- Schools can't be “asthma-friendly” if poor IAQ provokes asthma episodes.
- ***Education of all Occupants is Critical for success of the program***
- Significant improvements often can be made at **little or no cost** using EPA's ***free Indoor Air Quality Tools for Schools*** program, and other excellent free resources.



Managing Asthma in the School Environment

Excellent Sources of Information:

- **EPA Publication # 400-K-00-003 (right)**
- **EPA's "Envisioning Excellence IAQ Strategies in Action – The Framework for Effective School IAQ Management"**
- **American Lung Association: Additional Resources & Tools at:**
www.lung.org/lung-disease/asthma/creating-asthma-friendly-environments/asthma-i



We must all do our part!



Educators! Keep Pesticides Out of Your Classroom!

Instead, you can prevent a pest invasion:

- 1 Keep surfaces clean and dry
- 2 Use soapy water to clean up ant trails
- 3 Store food in tight-fitting containers
- 4 Reduce clutter, like cardboard boxes and old files
- 5 Make sure trash cans are emptied at the end of each day

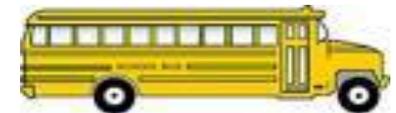
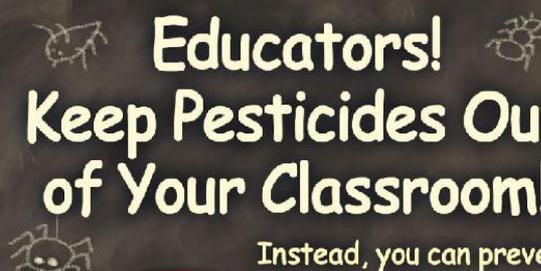
If you notice evidence of pests, like an ant trail, notify your integrated pest management (IPM) coordinator:

name and phone number

Remember: sanitation is the key to eliminating pests.



dpr
California Department
of Pesticide Regulation
www.cdpr.ca.gov



This is what it's all about!



Questions?

