



# Healthy School Environments

## Finding Solutions with the *IAQ Tools for Schools* Framework

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**Schools Coordinator**

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# Introduction

- Schools Program Coordinator for the Region 6 office of the Environmental Protection Agency
- Graduated from the University of Pittsburgh with a BS in Electrical Engineering
- Have been with the EPA since the fall of 2005
- Protecting kids is my #1 priority!

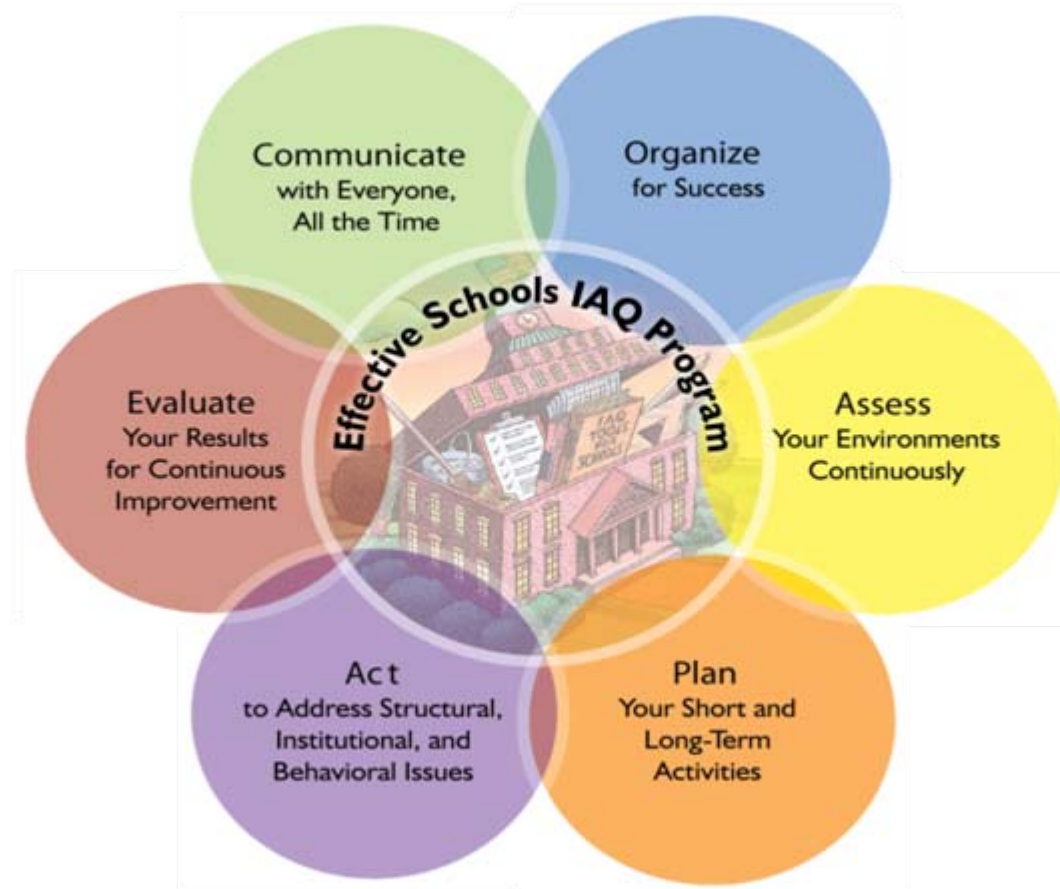


# Overview

- Review the *IAQ Tools for Schools* Framework: Key Drivers and Technical Solutions
- Year-Round Learning Opportunities through the Connector, Plus New Tools and Resources



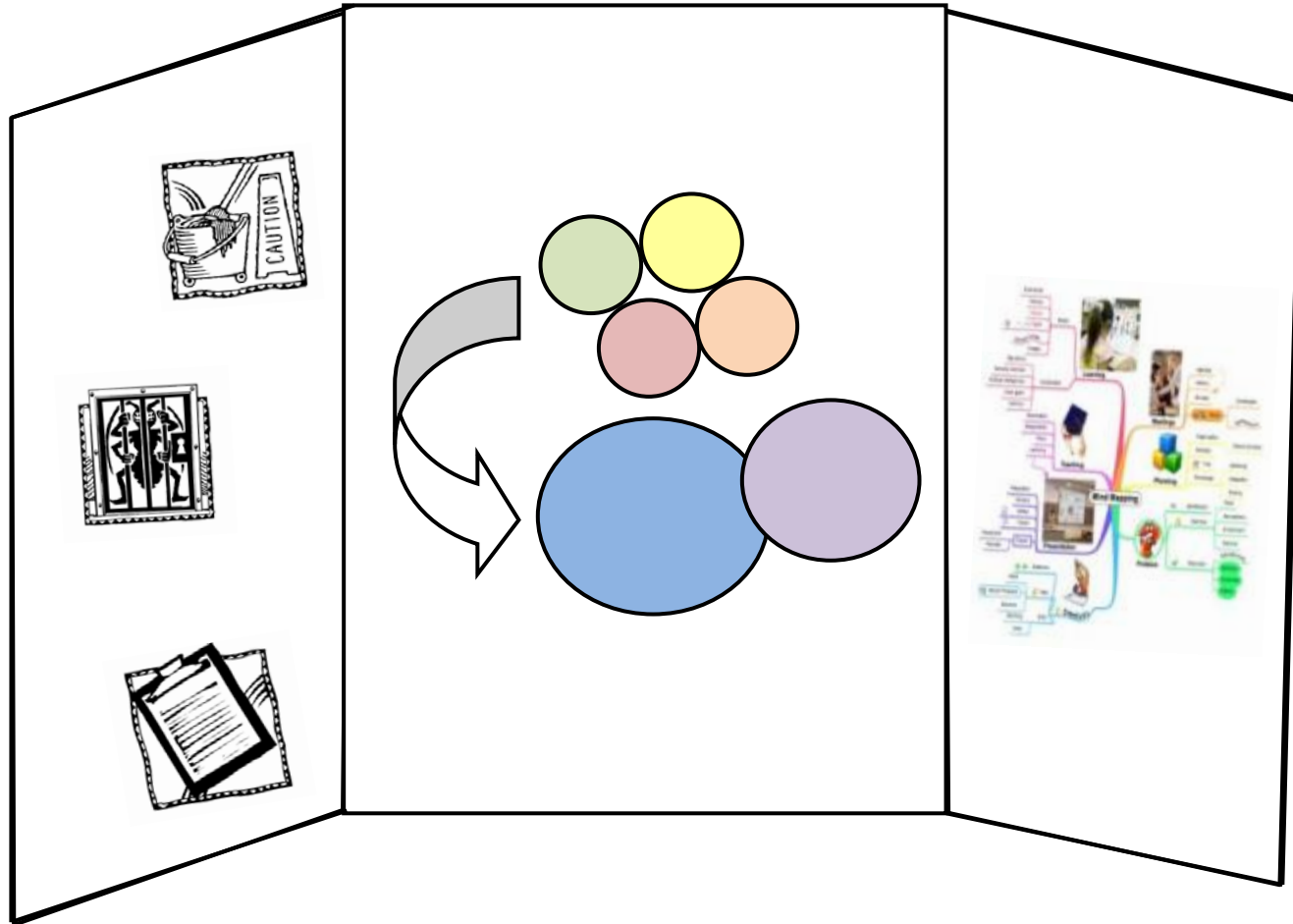
# Objective 1: Putting a Program in Place



# Objective 2: Installing the Best Technical Solutions



# Objective 3: Resources *for* Action





# The Framework for Effective School IAQ Management:

Putting in Place the Pieces  
that Work



# The Framework for Effective School IAQ Management



# The Framework for Effective School IAQ Management: **Six Key Drivers**



# The Framework for Effective School IAQ Management: Key Drivers

## ORGANIZE

- Develop Systematic Approach
- Identify Existing Assets
- Design SOPs
- Empower an IAQ Leader
- Build an Effective Team
- Create Champions
- Secure Senior Buy-In

**Organize**

## COMMUNICATE

- Share Your Goals
- Make IAQ Meaningful
- Be Transparent & Inclusive
- Communicate Results (ROI)

**Communicate**

## EVALUATE

- Solicit Feedback
- Capture ROI

**Evaluate**

## ASSESS

- Walk the Grounds
- Listen to Occupants
- Use Technology
- Determine a Baseline
- Keep Customers Satisfied
- Identify and Prevent Risks

**Assess**

## ACT

- Educate Staff About IAQ to Change Behavior
- Train Occupants to Address IAQ Risks
- Address the Source of Problems

**Act**

## PLAN

- Prioritize Actions
- Put Goals in Writing
- Start Small
- Work in Stages
- Plan for the Future

**Plan**

## ACTION KIT

- HVAC
- Moisture/Mold
- IPM
- Cleaning & Maintenance
- Materials Selection
- Source Control



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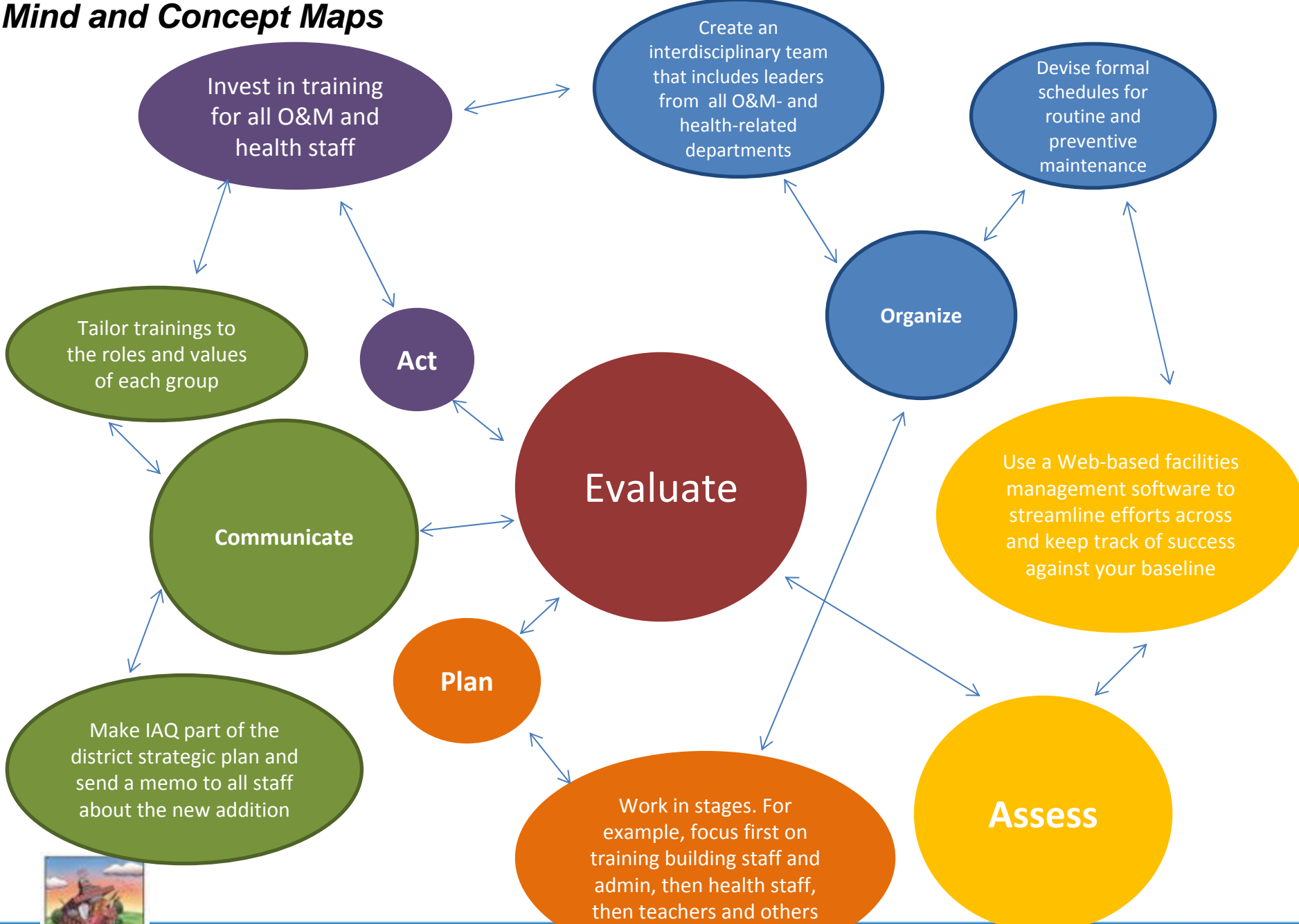
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# Mind and Concept Maps



# School IAQ: Mastering the Framework

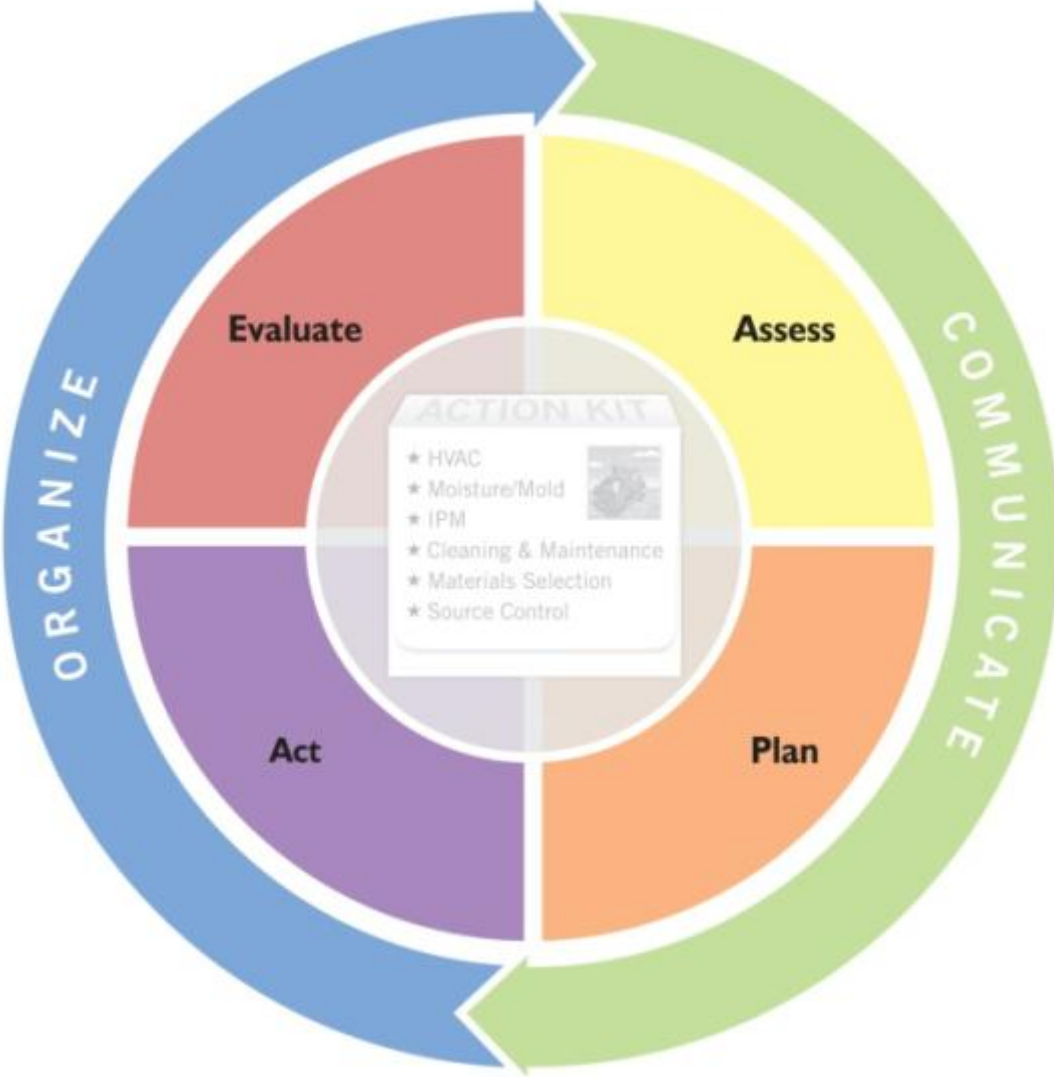
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- Be in Action for Results
- Install the Best Solutions



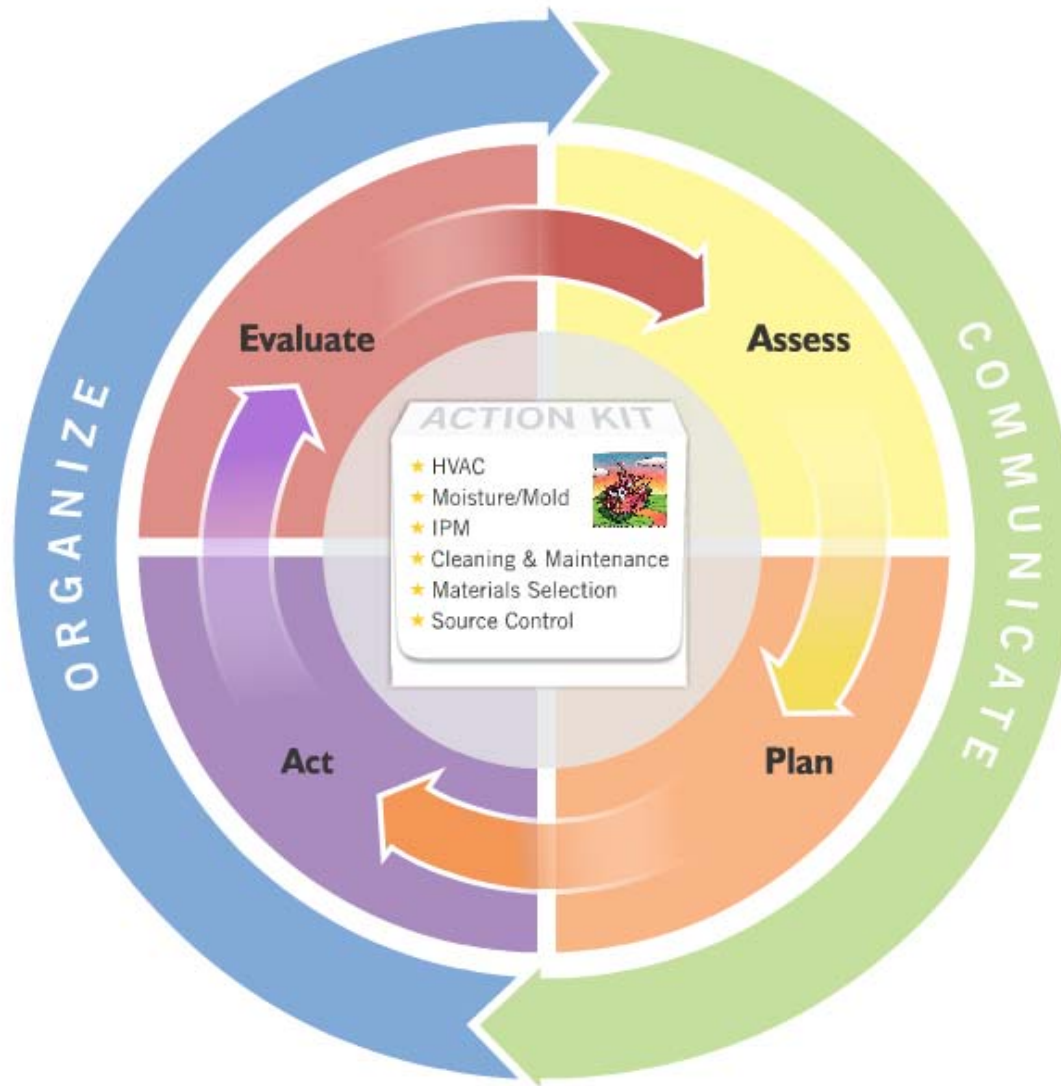
# Design to Sustain Action



# Be in Action for Results



# Install the Best Solutions



# Install the Best Solutions





# Moving From Theory to Practice: Implementing Technical Solutions



# Installing the Best Technical Solutions



# The Framework for Effective School IAQ Management



# The Framework for Effective School IAQ Management: **Six Technical Solutions**



# The Framework for Effective School IAQ Management:

## Six Technical Solutions

### Quality HVAC

- Inspect HVAC systems regularly
- Establish a maintenance plan
- Change filters regularly and ensure condensate pans are draining
- Provide outdoor air ventilation according to ASHRAE Standard or local code
- Clean air supply diffusers, return registers, and outside air intakes
- Keep unit ventilators clear of books, papers, and other items

### Control of Moisture/Mold

- Conduct routine moisture inspections
- Establish mold prevention and remediation plan
- Maintain indoor humidity levels between 30% and 60%
- Address moisture problems promptly
- Dry wet areas within 24-48 hours

### Strong Integrated Pest Management (IPM)

- Inspect and monitor for pests
- Establish an IPM plan
- Use spot treatments and baits
- Communicate with occupants prior to pesticide use
- Mark indoor and outdoor areas treated with pesticides



### Effective Cleaning & Maintenance

- Conduct routine inspections of school environment
- Develop a preventative maintenance plan
- Train cleaning/maintenance staff on protocols
- Ensure material safety data sheets (MSDS) are available to staff
- Clean and remove dust with damp cloth
- Vacuum using high-efficiency filters

### Smart Materials Selection

- Maintain products inventory
- Develop low-emitting products purchasing and use policies
- Use only formaldehyde-free materials
- Use only low-toxicity and low-emitting paint
- Select products based on product rating systems
- Use least toxic cleaners possible (only those approved by the district)

### Aggressive Source Control

- Conduct regular building walkthrough inspections
- Test for radon; mitigate if necessary
- Implement a hazardous materials plan (use, label, storage and disposal)
- Implement Smoke-Free policies
- Establish an anti-idling school bus policy
- Use walk-off mats at building entrances
- Conduct pollutant-releasing activities when school is unoccupied

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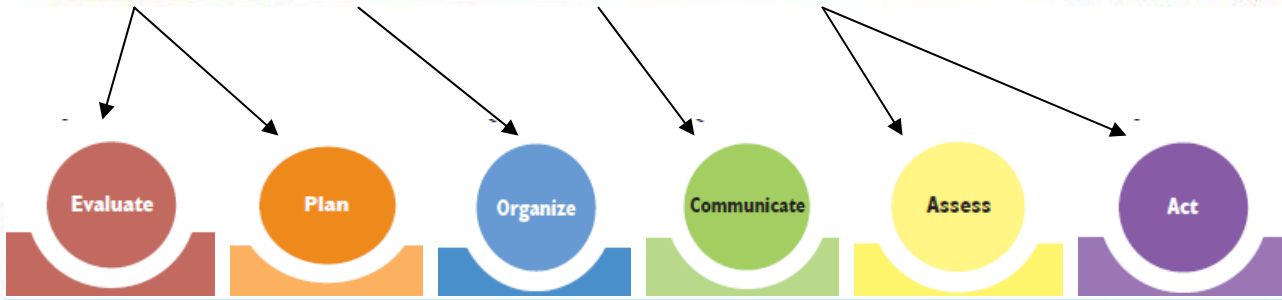
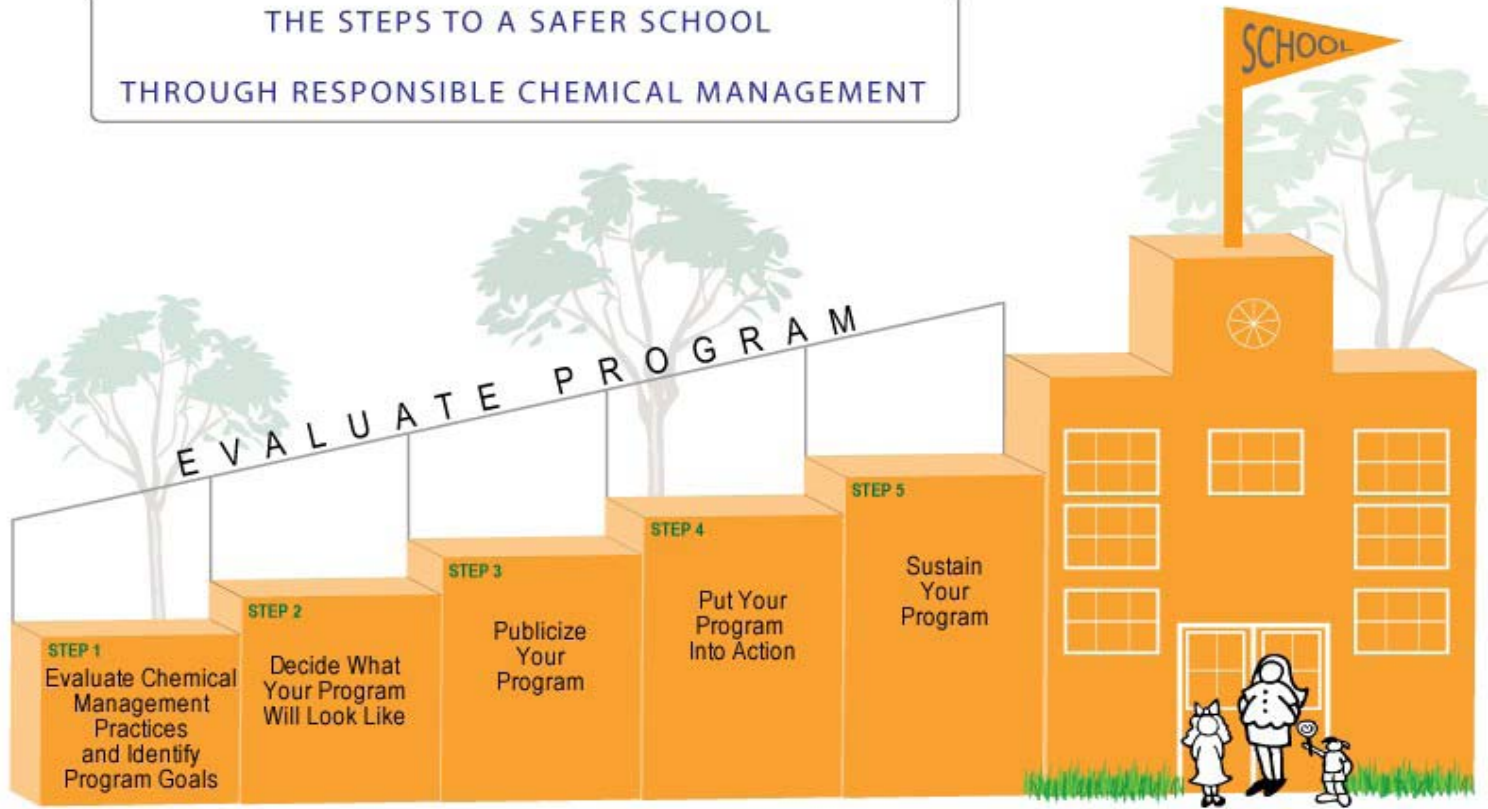
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# Framework Applied to Chemical Management

THE STEPS TO A SAFER SCHOOL  
THROUGH RESPONSIBLE CHEMICAL MANAGEMENT



# Sustainability is Inevitable





## *IAQ Tools for Schools Connector*

- **Mentorship**
- **Webinars**
- **E-mail Updates**
- **Listserv**

# ***IAQ Tools for Schools*** **Connector**

- Provides year-round connection, interaction, and inspiration to achieve success.
- New tools and resources available to help you make measurable progress on your journey.



# ***IAQ Tools for Schools Network – In Action!***

- New Tool: Asset Mapping
- Jumpstart Your Success
- Identify Your School Districts Strengths, Weaknesses, Opportunities, and Threats
- Encourage Your IAQ Management Team to Think and Speak using the *IAQ Tools for School Framework*



# Asset Mapping – In Action!

- Evaluate your comprehensive *IAQ Tools for Schools* Management Plan



## II. Current Condition/Problem Statement

b. Use the chart below to identify your current strengths, weaknesses, opportunities, and threats.

<i>Key Drivers for Success</i>	Strengths	Weaknesses	Opportunities	Threats
1. Organize				
2. Communicate				
3. Assess				
4. Plan				
5. Act				
6. Evaluate				





## *Envisioning Excellence: Lessons from Effective School Indoor Air Quality (IAQ) Programs*

### A Snapshot of Seven Profiles in Excellence



Read more about the profiles in IAQ Excellence and the Framework for Effective School IAQ Programs at [www.iaqsymposium.com/excellence.html](http://www.iaqsymposium.com/excellence.html).



IAQ Tools for  
Schools Program

Indoor Air Quality (IAQ)



## *Envisioning Excellence— The IAQ TFS Program Change Package*

*Accelerating Action to Create Healthier  
and Safer Learning Environments*



IAQ Tools for  
Schools Program

Indoor Air Quality (IAQ)



# Requests and Offers

- What do you need from our Network to Install Solutions in your school district?
- What can you offer to others to help them achieve better IAQ management outcomes?



# Resources

- Schools IAQ Connector Listserv:
  - Send a blank e-mail message to [schools\\_iaq\\_connector\\_subscribe@lists.epa.gov](mailto:schools_iaq_connector_subscribe@lists.epa.gov) or
  - Request subscription online on the Listserv Web interface [https://lists.epa.gov/read/all\\_forums/subscribe?name=schools\\_iaq\\_connector](https://lists.epa.gov/read/all_forums/subscribe?name=schools_iaq_connector). Then, check your e-mail inbox for your confirmation and membership details.
- *IAQ Tools for Schools* Updates and E-mails—
  - Send an e-mail to: [IAQTfSConnector@cadmusgroup.com](mailto:IAQTfSConnector@cadmusgroup.com)
  - View archives at: <http://www.epa.gov/iaq/schools/bulletins.html>



# Resources

- Webinar Archives:

<http://www.epa.gov/iaq/schools/webconferences.html>

- Regional Resources Webinar Archives –

[http://www.epa.gov/iaq/schools/pdfs/webconferences/may\\_14\\_2009.pdf](http://www.epa.gov/iaq/schools/pdfs/webconferences/may_14_2009.pdf)

- Regional Resources:

<http://www.epa.gov/iaq/wherelive.html>



# Resources

- *All EPA Schools Programs (including Chemical Management (SC3) and Integrated Pest Management)*  
[www.epa.gov/schools](http://www.epa.gov/schools)
- *IAQ Tools for Schools Program*  
[www.epa.gov/iaq/schools](http://www.epa.gov/iaq/schools)
- *IAQ Tools for Schools Envisioning Excellence*  
[www.epa.gov/iaq/schools/excellence.html](http://www.epa.gov/iaq/schools/excellence.html)
- *National Map of Award Winners*  
[www.epa.gov/iaq/schools/nationalmap.html](http://www.epa.gov/iaq/schools/nationalmap.html)



# Questions

