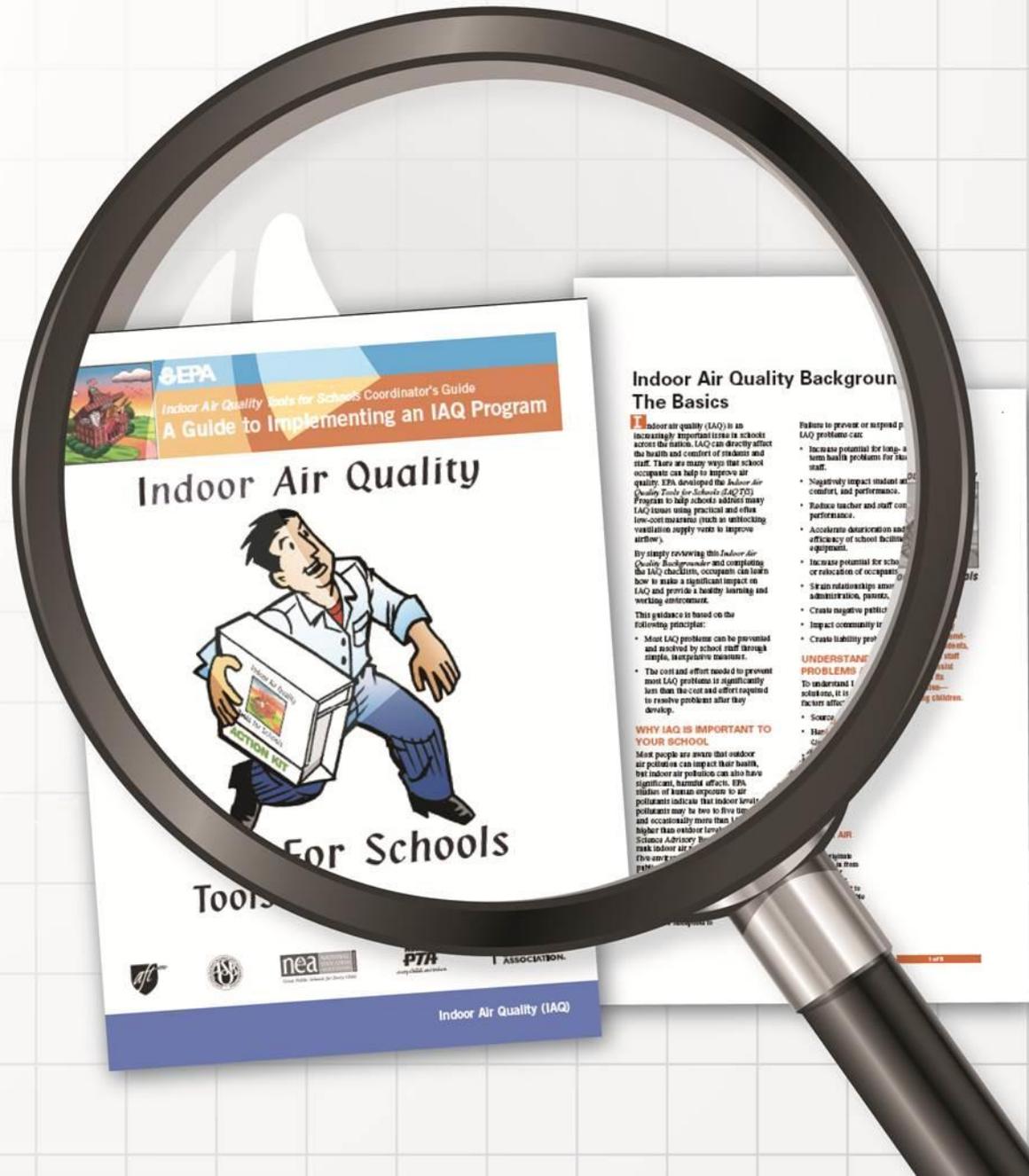
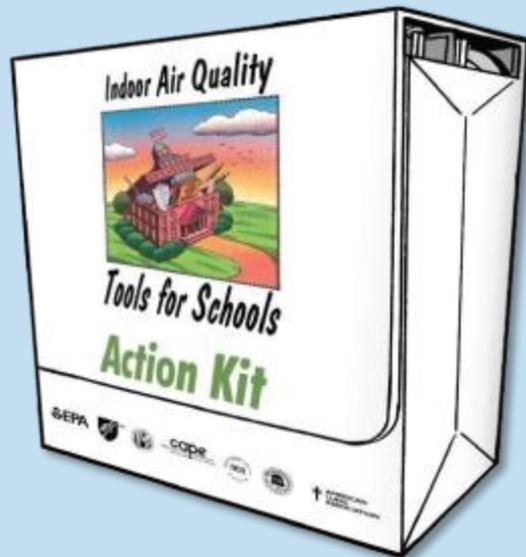




# Creating Exceptional Facilities for Student Success



# The IAQ Tools for Schools Guidance



## Indoor Air Quality Background The Basics

**I**ndoor air quality (IAQ) is an increasingly important issue in schools across the nation. IAQ can directly affect the health and comfort of students and staff. There are many ways that school occupants can help to improve air quality. EPA developed the *Indoor Air Quality Tools for Schools (IAQ TFS)* Program to help schools address many IAQ issues using practical and often low-cost measures such as unblocking ventilation supply vents to improve airflow.

By simply reviewing this *Indoor Air Quality Background* and completing the IAQ checklist, occupants can learn how to make a significant impact on IAQ and provide a healthy learning and working environment.

This guidance is based on the following principles:

- Most IAQ problems can be prevented and resolved by school staff through simple, non-punitive measures.
- The cost and effort needed to prevent most IAQ problems is significantly less than the cost and effort required to resolve problems after they develop.

### WHY IAQ IS IMPORTANT TO YOUR SCHOOL

Most people are aware that outdoor air pollution can impact their health, but indoor air pollution can also have significant, harmful effects. EPA studies of human exposure to air pollutants indicate that indoor levels of pollutants may be two to five times higher than outdoor levels. The U.S. Environmental Protection Agency's Science Advisory Board has ranked indoor air quality as one of the top five environmental health threats.

### Factors to prevent or respond to IAQ problems can:

- Increase potential for long-term health problems for the staff.
- Negatively impact student academic performance.
- Reduce teacher and staff comfort, and performance.
- Accelerate deterioration and inefficiency of school facility equipment.
- Increase potential for school-related occupational injuries or illnesses.
- Strain relationships among administration, parents, and staff.
- Create negative public perception.
- Impact community reputation.
- Create liability potential.

### UNDERSTAND THE PROBLEMS

To understand the factors that affect IAQ, it is important to understand the following:

- Sources of indoor air pollutants.
- How indoor air pollutants are transported.
- How indoor air pollutants are removed.

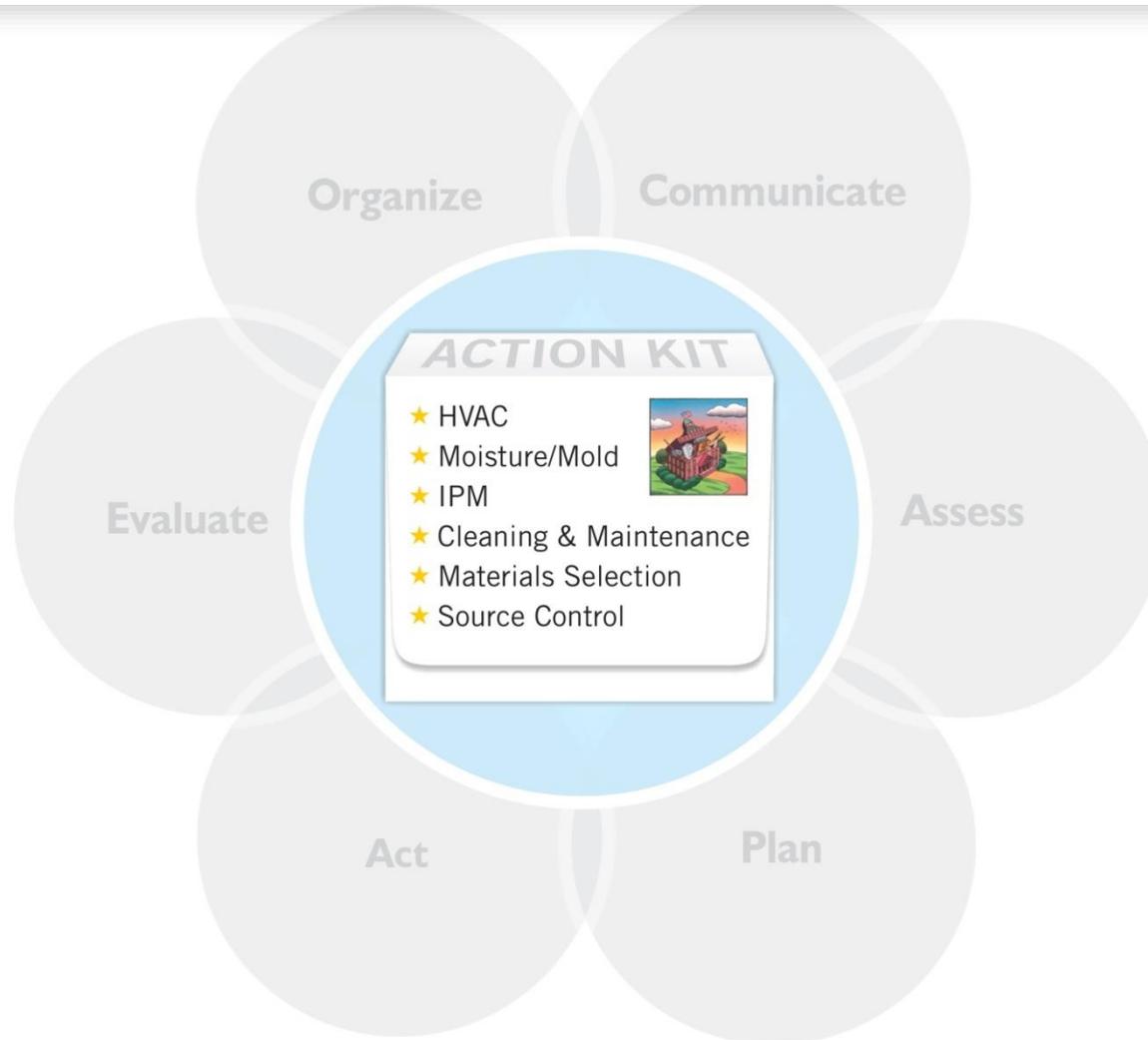
# Framework for Effective School IEQ Management

## The Six Key Drivers



# Framework for Effective School IEQ Management

## The Six Technical Solutions



# The Framework for Effective School IEQ 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

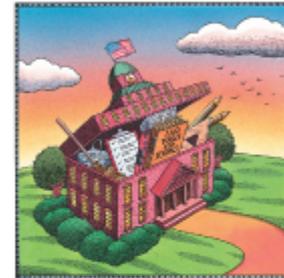
- ★ HVAC
- ★ Moisture/Mold
- ★ IPM
- ★ Cleaning & Maintenance
- ★ Materials Selection
- ★ Source Control



# The Framework for Effective School IEQ Management: Technical Solutions

## ACTION KIT

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



# The Framework for Effective School IEQ 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

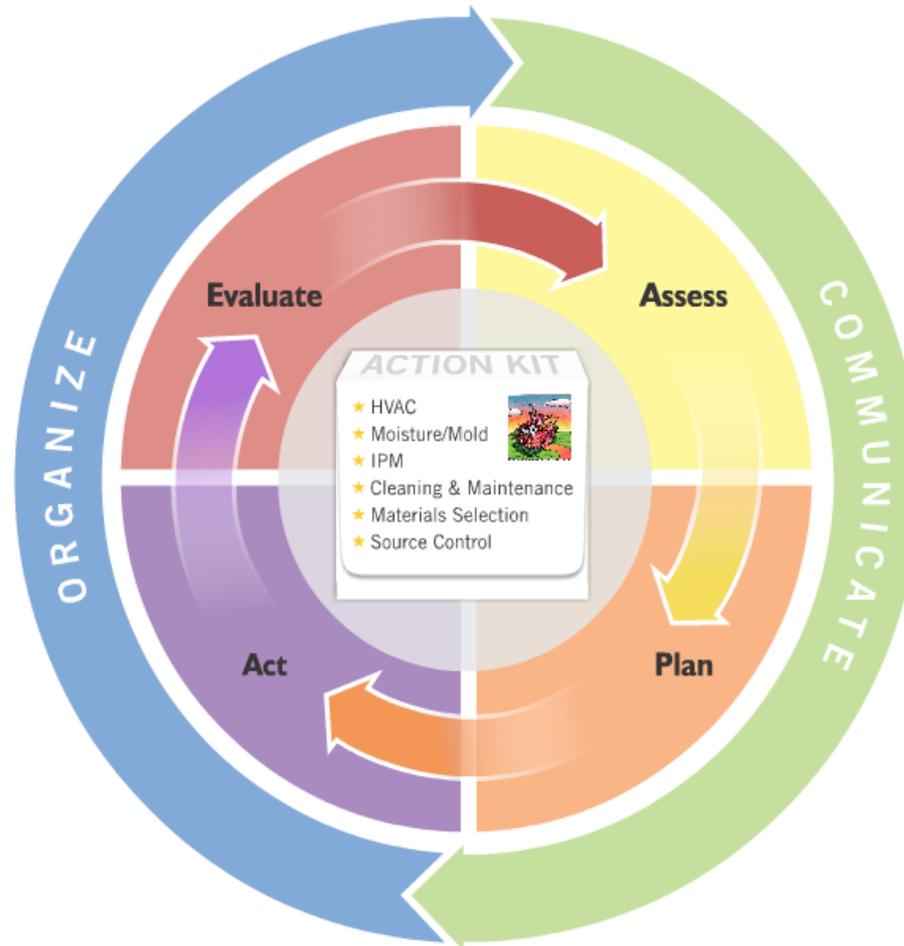
### Smart Materials Selection

- 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)
- Establish a school chemical management and inventory plan
- 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

# Cycle of Implementation





# Sensible Steps to Healthier School Environments

Cost-effective, affordable measures to protect the health of students and staff.



## Sensible Steps to Healthier Schools

### Quick Assessment

Please use this voluntary assessment foldout to help you reduce and prevent exposures to common environmental health hazards in your school. Each topic area covered below has low or no-cost steps which can be taken to improve your students' environmental health. This tool also highlights waste reduction and energy efficiency strategies to help conserve valuable, financial resources.

#### Asbestos

Does the school have a readily available asbestos management plan?  
 Yes  No  N/A

Have all building operation and maintenance staff reviewed the asbestos management plan and understand how to minimize potential disturbance to ACM?  
 Yes  No  N/A

#### Asthma and Asthma Triggers

Are there policies that discourage the use of birds or furry animals such as mice, guinea pigs, and rabbits as pets in the school's classrooms?  
 Yes  No  N/A

Is the school's cleaning staff encouraged to use environmentally friendly cleaning products and "wet" dusting techniques whenever possible?  
 Yes  No  N/A

Are classrooms free of clutter? Are they dusted regularly? Are stuffed animals and pillows washed frequently?  
 Yes  No  N/A

#### Buses and Vehicle Idling

Have anti-idling policies been developed and implemented for buses that serve the school?  
 Yes  No  N/A

Have anti-idling zones been established for all vehicles at the schools (school buses, delivery trucks and parent's cars)?  
 Yes  No  N/A

Are all passenger pickup/drop off areas located away from school's air intake supply, classroom windows and exit doors?  
 Yes  No  N/A

#### Carbon Monoxide (CO)

Does the school's maintenance staff inspect and document the condition and findings for all gas burning appliances, furnaces and water heaters yearly to ensure they are properly operating?  
 Yes  No  N/A

Have CO detectors been installed in the school near appliances that burn natural gas, oil, wood or gas?  
 Yes  No  N/A

#### Chemical Management

Does the school conduct a yearly inventory of all chemicals present?  
 Yes  No  N/A

Does the school have a policy that prohibits any unauthorized toxic or hazardous chemicals from being brought into the school?  
 Yes  No  N/A

Are all chemicals properly labeled, stored in original containers, dated as to when they entered the school, and have accompanying MSDS information on site?  
 Yes  No  N/A

Are all toxic or hazardous chemicals stored in appropriate containers, separated by hazard category, in a ventilated, fire resistant, and locked or locked cabinet?  
 Yes  No  N/A

Does the school conduct cleanouts of all chemicals that are unnecessarily outdated and posing a health risk on a regular basis?  
 Yes  No  N/A

Does the school ensure proper training of staff involved with chemical management? Are students properly trained before handling toxic or hazardous chemicals?  
 Yes  No  N/A

#### Drinking Water

If your school receives its drinking water from your own source, you are required to comply with a series of regulations under the Safe Drinking Water Act. Is the water tested according to regulations and the results documented?  
 Yes  No  N/A

Are water faucets, fountain screens and aerators regularly cleaned and serviced?  
 Yes  No  N/A

Does the school have policies and procedures in place to prevent the disposal of hazardous substances down the toilets and/or dumping into storm drains?  
 Yes  No  N/A





# Resources

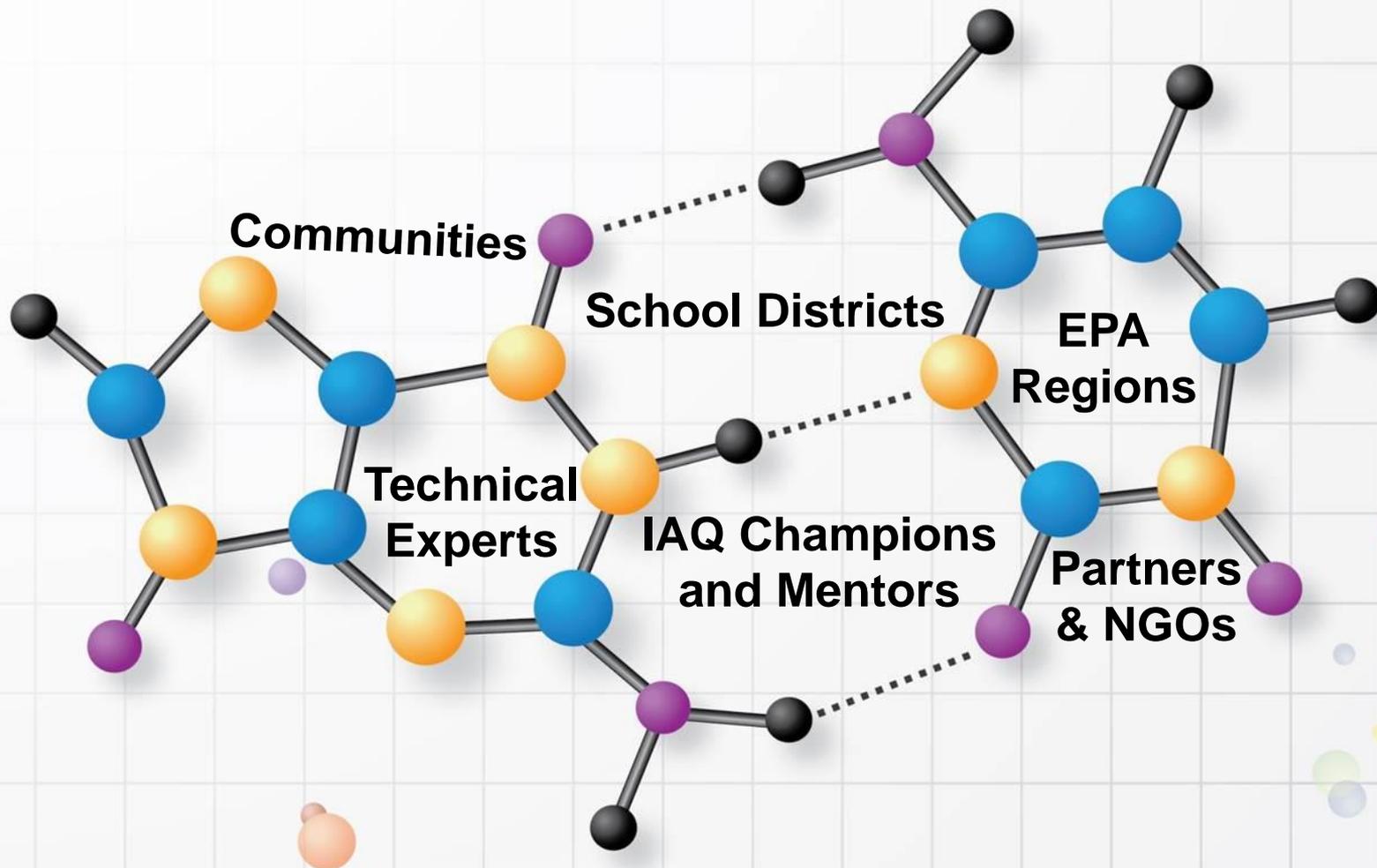


- *All EPA Schools Programs*  
[www.epa.gov/schools](http://www.epa.gov/schools)
- *Indoor Air Quality Tools for Schools*  
[www.epa.gov/iaq/schools/](http://www.epa.gov/iaq/schools/)
- *National Map of Award Winners*  
[www.epa.gov/iaq/schools/nationalmap.html](http://www.epa.gov/iaq/schools/nationalmap.html)



# National Network – Connections to Spur Action

*Strengthening the National Network through Regional Pacing Events*





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