School Air Quality: From Concern to Accountable Action

A practical evidence-to-action companion for school leaders, facilities teams, IAQ coordinators, and community stakeholders.

THE CENTRAL QUESTION

When a school identifies an air-quality concern, can it show what was known, why a response was justified, who had authority to act, and whether the action worked?

The difference between a reading and a decision

Sensors, walkthroughs, maintenance logs, and IAQ management plans already provide important information. TA14 proposes a governance layer connecting those existing capabilities to a specific decision and a documented outcome. It does not replace EPA guidance, school procedures, qualified professionals, or safety controls.

One school, one example

A teacher reports recurring discomfort in Classroom 214 during a regional smoke event. Outdoor particle levels may be elevated, but a regional reading alone cannot establish the actual classroom condition or justify a particular HVAC command. The school must establish the local facts, applicable response procedures, responsible authority, and appropriate next steps.

The eight-step evidence-to-action path

01 REALITY	Observe the relevant indoor and outdoor conditions, occupancy, and system operation.
02 RECORD	Preserve observations with source, location, time, units, and quality context.
03 CONTINUITY	Check trends, gaps, changes, duration, and relevant event history.

04 ADMISSIBILITY	Determine whether the evidence is fit for the specific decision being considered.

THE DECISION PATH / CONTINUED

05 BINDING	Identify the exact classroom, proposed action, scope, applicable authority, and established standing.
06 COMMIT	Recheck current conditions and permissions immediately before the decision is carried out.
07 EXECUTION	Perform and document the authorized response, subject to existing emergency and safety procedures.
08 OUTCOME	Measure and preserve the post-action condition; use it as evidence for the next decision.

Three TA14 layers, explained simply

EIG	Environmental Integrity Governance: governs how environmental observations become usable, traceable evidence.
AIR	Atmospheric Integrity Record: preserves a time-sequenced record of the air and relevant building, occupancy, and intervention context.
AEA	Admissible Execution Architecture: evaluates whether an evidence-supported proposed consequence has sufficient authority and standing to proceed now.

What the school should preserve

Record the concern and its location; observations and source identity; instrument and time context; relevant outdoor conditions; HVAC and filtration status; occupancy/use context where appropriate; missing or conflicting information; decision owner; applicable procedure; action and timing; and post-action verification. Protect student and staff privacy and avoid collecting personal information that is not necessary.

What happens when evidence is incomplete?

ALLOW: sufficient evidence and authority support the bounded action. HOLD: more evidence or revalidation is needed. DENY: the proposed action is outside the permitted scope or fails a required

condition. ESCALATE: conflicting evidence, health/safety concerns, or authority questions require a designated responsible person. HOLD is not automatically safe: emergency protocols and protective actions must not be delayed by an administrative evidence process.

A useful question for every IAQ plan

Can another qualified person reconstruct the decision months later, including the observations, uncertainty, authority, intervention, and verified result?

PRACTICAL TAKEAWAY / SCHOOL IAQ

A one-page decision record

Use this as a discussion aid alongside the district's existing IAQ plan, not as a substitute for required forms or emergency procedures.

Concern / location	What was reported? Which space and when?
Evidence	What was measured or observed? By whom? What is missing?
Context	What were outdoor conditions, occupancy, HVAC operation, and recent interventions?
Decision	What response is proposed? What criteria support it?
Authority	Who is responsible and authorized under district procedures?
Action	What was actually done, when, and by whom?
Outcome	What was rechecked? Did the condition improve, persist, or remain uncertain?

How this fits with existing school IAQ practice

School IAQ programs already use inspections, preventive maintenance, response plans, communication, and follow-up. This guide offers a way to connect those established practices into a traceable record of why a particular consequence was or was not authorized. It is a proposed governance approach, not a validated school deployment or a claim of unique component technology.

Technical basis and further reading

TA14 School Environmental Integrity internal adversarial examination, rounds R1-R9 (source material for this guide). The examination found substantial existing equivalents in EPA environmental data-quality practice, building histories, control systems, and cyber-physical safety architectures; full-composition equivalence and real-world performance remain open questions.

U.S. EPA: Indoor Air Quality Tools for Schools | Framework for Effective School IAQ Management

TA14 Exchange: School IAQ Consequence Boundary showroom

Scope note: This document provides educational governance concepts, not exposure limits, medical advice, operational setpoints, legal determinations, or authorization to override district policies, engineering standards, public-health directions, emergency response procedures, or native equipment safety interlocks.