



Cleaning for Health: Proactive Plans to Effectively Clean and Promote Healthy IAQ in Schools

Thursday, August 6, 2020

Webinar: 1:00 p.m. – 2:00 p.m. EDT

Question & Answer Session: 2:00 p.m. – 2:30 p.m. EDT



Learning Objectives

Webinar participants will learn how to—

- Tailor your cleaning and maintenance plan and procedures to help implement [CDC considerations for schools](#) to reduce the spread of viruses and bacteria.
- Train staff and build a capable, committed team to effectively implement robust cleaning for health procedures.
- Evaluate your plan for continued improvement and to ensure your practices are helping you maintain optimal learning environments and protect health.
- Replicate best practices used by school district champions who successfully designed, implemented and evaluated/revised [cleaning and IAQ management](#) plans using a [proven Framework](#), not only to proactively protect health but also to quickly address emerging health issues.

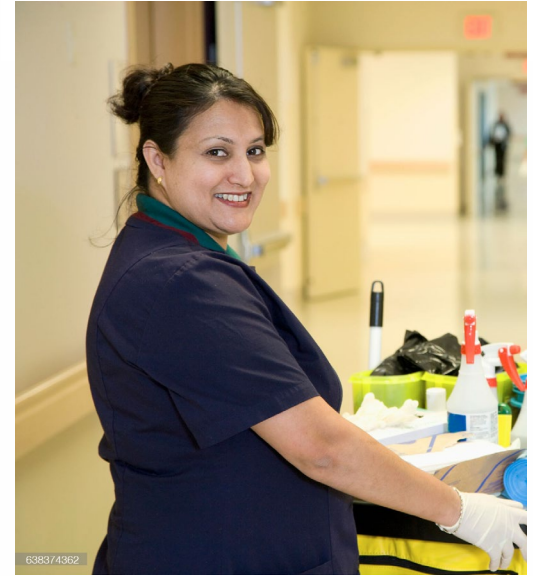


Disclaimer: The views expressed in this presentation are solely those of the speakers and do not necessarily reflect those of EPA.

Cleaning for Health

Benefits of Cleaning for Health:

- Improves indoor air quality.
- Reduces asthma triggers.
- Helps to control infectious disease.
- Reduces injury and illness of custodial staff.



Guidance for Schools

GUIDANCE FOR CLEANING AND DISINFECTING

PUBLIC SPACES, WORKPLACES, BUSINESSES,
SCHOOLS, AND HOMES



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INFORMATION

This guidance is intended for all Americans, whether you own a business, run a school, or want to ensure the cleanliness and safety of your home. Reopening America requires all of us to move forward together by practicing social distancing and other [daily habits](#) to reduce our risk of exposure to the virus that causes COVID-19. Reopening the country also strongly relies on public health strategies, including increased testing of people for the virus, social distancing, isolation, and keeping track of how someone infected might have infected other people. This plan is part of the larger [United States Government plan](#) and focuses on cleaning and disinfecting public spaces, workplaces, businesses, schools, and can also be applied to your home.

Cleaning and disinfecting public spaces including your workplace, school, home, and business will require you to:

- Develop your plan
- Implement your plan
- Maintain and revise your plan

Reducing the risk of exposure to COVID-19 by cleaning and disinfection is an important part of reopening public spaces that will require careful planning. Every American has been called upon to slow the spread of the virus through social distancing and prevention hygiene, such as frequently washing your hands and wearing face coverings. Everyone also has a role in making sure our communities are as safe as possible to reopen and remain open.

The virus that causes COVID-19 can be killed if you use the right products. EPA has compiled a list of disinfectant products that can be used against COVID-19, including ready-to-use sprays, concentrates, and wipes. Each product has been shown to be effective against viruses that are harder to kill than viruses like the one that causes COVID-19.

For more information, please visit [CORONAVIRUS.GOV](https://www.coronavirus.gov)



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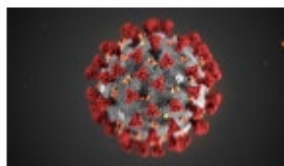


Coalition for Healthier Schools

...providing the national platform and
the forum for environmental health of school, since 2001...
Coordinated by Healthy Schools Network

NATIONAL CALL TO ACTION

The Pandemic v. Schools



States Must Guide Schools on Reopening, Slowing Spread of Virus

Prepared by

Healthy Schools Network

New Jersey Work Environment Council

With institutions from

New Jersey Education Association, Healthy Schools Now (NJ), NEA Healthy
Schools Caucus, Learning Disabilities Association of America, National
Association of School Nurses, New York Lawyers for the Public Interest,
Asthma and Allergy Foundation of America

SCHOOLS FOR HEALTH

Risk Reduction Strategies
for Reopening Schools

June, 2020

COVID-19




HARVARD T.H. CHAN
SCHOOL OF PUBLIC HEALTH



Indoor Air Quality (IAQ)

Guidance for Schools



ASHRAE EPIDEMIC TASK FORCE
SCHOOLS & UNIVERSITIES | Updated 7-17-2020

Introduction

- Determining Building Readiness
 - Summer Checklist for Fall Classes
 - Startup Checklist for HVAC Systems Prior to Occupancy

Equipment & System Specific Checks & Verifications During Academic Year

- Cleaning & Air Flush
- Boilers
- Chilled, Hot & Condenser Water Systems
- Air Cooled Chillers
- Water Cooled Chillers
- Cooling Towers & Evaporative-Cooled Devices
- Steam Distribution Systems
- HVAC Water Distribution Systems
- Pumps
- Air Handling Units
- Roof Top Units
- Unitary & Single Zone Equipment

New/Modified Facility Design Recommendations

- Introduction
- Designer Guidelines – General School
- Nurses Office – General Requirements

Filtration Upgrades

- Introduction
- Filtration Basics
- Filtration Target Level
- Information Gathering Stage
- Data Analysis & Review
- Implementation & Considerations

Operation of Occupied Facilities


Controlling Infection Outbreak in School Facilities

Higher Education Facilities

- Student Health Facilities
- Laboratories
- Athletic Facilities
- Residence Facilities
- Large Assembly

QUESTIONS? COVID-19@ashrae.org

www.ashrae.com/covid19



Interim Guidance for Administrators of US K-12 Schools and Child Care Programs to Plan, Prepare, and Respond to Coronavirus Disease 2019 (COVID-19)

Accessible version: <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/guidance-for-schools.html>

Summary of Recent Changes

Revisions were made on 3/11/2020 to reflect the following:

- Clarification of appropriate mitigation strategies based on level of community transmission of COVID-19 and presence of COVID-19 cases within the school.

- Schools, working together with local health departments, have an important role in slowing the spread of diseases and protecting vulnerable students and staff, to help ensure students have safe and healthy learning environments.

- Guidance for child care programs and schools is organized into three categories based on the level of community transmission: 1) when there is no community transmission (preparedness phase), 2) when there is minimal to moderate community transmission, and 3) when there is substantial community transmission.

- Guidance is also provided for when a confirmed case has entered a school, regardless of the level of community transmission.

- All decisions about implementing school-based strategies (e.g., dismissals, event cancellations, other social distancing measures) should be made locally, in collaboration with local health officials who can help determine the level of transmission in the community. Information about level of transmission is available in CDC's framework for mitigation.

In This Document

[Who is this guidance for?](#)

[Why is this guidance being issued?](#)

[What is the role of schools in responding to COVID-19?](#)

[How should schools prepare for, and respond to, COVID-19?](#)

[When a confirmed case has entered a school, regardless of community transmission.](#)

[When there is no community transmission \(preparedness phase\).](#)

[When there is minimal to moderate community transmission.](#)

[When there is substantial community transmission.](#)



3/25/2020

For more information: www.cdc.gov/COVID19



EPA Resources for Responding to COVID-19



Environmental Topics Laws & Regulations About EPA

Search EPA.gov

Related Topics: Coronavirus

CONTACT US SHARE

Frequent Questions Related to Coronavirus (COVID-19)

View frequently asked questions related to Coronavirus (COVID-19) and find key EPA resources.

Disinfectants

I can't tell if the product I'm interested in is on the list or not. Can you help me?

I want to use a product to kill SARS-CoV-2 but it isn't on List N. Is it effective against SARS-CoV-2?

View all frequent questions about disinfectants and Coronavirus (COVID-19).

Questions from State, Local and Tribal Leaders

Can states expect any regulatory relief or flexibility if they temporarily suspend certain inspections, monitoring, and reporting requirements such as vehicle emissions testing programs or certain air quality monitoring reports under the Clean Air Act?

View all Frequent Questions from State, Local and Tribal Leaders about Coronavirus (COVID-19).

Drinking Water

Do I need to boil my drinking water?

Is tap water safe to use for hand washing?

Is drinking tap water safe?

View all frequent questions about drinking water and Coronavirus (COVID-19).

Wastewater and Septic Systems

Can I get COVID-19 from wastewater or sewage?

Will my septic system treat COVID-19?

Do wastewater treatment plants treat COVID-19?

View all frequent questions about wastewater and septic systems and Coronavirus (COVID-19).

Grants

May EPA waive prior approval requirements specified at 2 CFR 200.407 if a waiver is necessary to address COVID-19 related concerns?

What documentation does EPA require for resumption of non-competitive awards?

View all frequent questions about grants and Coronavirus (COVID-19).

Waste

Does RCRA regulate wastes that may contain the virus that causes COVID-19, such as used medical equipment or personal protective equipment?

Where can I find information regarding the handling of wastes associated with Coronavirus and COVID-19?

What information has EPA shared to provide the public, the regulated community and other government agencies with the most complete and up to date information on actions related to COVID-19?

View all frequent questions about waste and Coronavirus (COVID-19).

Indoor Air

Is there HVAC guidance that building and maintenance professionals can follow to help protect from COVID-19?

Will an Ozone Generator protect me and my family from COVID-19?

Will an air purifier protect me and my family from COVID-19 in my home?



Environmental Topics Laws & Regulations About EPA

Search EPA.gov

Related Topics: Coronavirus

CONTACT US SHARE

Indoor Air and Coronavirus (COVID-19)

COVID-19 is thought to spread mainly through close contact from person-to-person. However, some uncertainty remains about the relative importance of different routes of transmission of SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19). There is growing evidence that this virus can remain airborne for longer times and further distances than originally thought. In addition to close contact with infected people and contaminated surfaces, there is a possibility that spread of COVID-19 may also occur via airborne particles in indoor environments, in some circumstances beyond the 2 m (about 6 ft) range encouraged by social distancing recommendations. See [Science and Technical Resources related to Indoor Air and Coronavirus \(COVID-19\)](#) or [Indoor Air and COVID-19 Key References and Publications](#) for technical information.

However, there are straightforward steps that can be taken to reduce potential airborne transmission of COVID-19 and the focus of this material is on those measures. The layout and design of a building, as well as occupancy and type of heating, ventilation, and air conditioning (HVAC) system, can all impact potential airborne spread of the virus. Although improvements to ventilation and air cleaning cannot on their own eliminate the risk of airborne transmission of the SARS-CoV-2 virus, EPA recommends precautions to reduce the potential for airborne transmission of the virus. These precautions include increasing ventilation with outdoor air and air filtration as part of a larger strategy that includes social distancing, wearing cloth face coverings or masks, [surface cleaning and disinfecting](#), handwashing, and other precautions. By themselves, measures to reduce airborne exposure to the virus that causes COVID-19 are not enough since airborne transmission is not the only way exposure to SARS-CoV-2 could potentially occur.

All best practices recommended by the Centers for Disease Control and Prevention (CDC) should be followed.

- [How to Protect Yourself and Others](#)
- [Cleaning and Disinfecting Your Home](#)
- [Community, Work and School: Cleaning and Disinfecting](#)
- [Use of Cloth Face Coverings to Help Slow the Spread of COVID-19](#)

List N: Disinfectants for Use Against SARS-CoV-2

All products on this list meet EPA's criteria for use against SARS-CoV-2, the virus that causes COVID-19.

Finding a Product

To find a product, enter the **first two sets** of its **EPA registration number** into the search bar below. You can find this number by looking for the EPA Reg. No. on the product label.

For example, if EPA Reg. No. 12345-12 is on List N, you can buy EPA Reg. No. 12345-12-2567 and know you're getting an equivalent product.

[Search by EPA registration number](#)

Other COVID-19 Resources

- [EPA's Coronavirus Site](#)
- [CDC's Coronavirus Disease 2019 Site](#)
- [CDC's Cleaning and Disinfection Recommendations for COVID-19](#)
- [NPIC's COVID-19 Virus Factsheet](#)



Indoor Air Quality (IAQ)

EPA Resources for Responding to COVID-19 in Schools



EPA Supports Healthy Indoor Environments in Schools During COVID-19 Pandemic

The Environmental Protection Agency (EPA) Indoor Air Quality (IAQ) Tools for Schools Program remains fully committed to our stakeholders who are working to ensure that schools are healthy places to work and learn, whether school is in session or not. Below is a set of health and safety resources to consult as you respond to COVID-19 in your facilities:

CDC Guidance:

Please refer to the Centers for Disease Control and Prevention (CDC) website for the most recent updates related to COVID-19 and schools:

- [Guidance for Schools and Child Care Programs](#)
- [Cleaning and Disinfecting Your Facility](#)
- [Interim Guidance for Administrators of US K-12 Schools and Child Care Programs](#)

Helpful Tips for Maintaining Healthy Indoor Environments in Schools:

Whether your school is open or closed, indoor air quality is still an important part of maintaining a healthy indoor environment in schools. Employ the actions and strategies in the [IAQ Tools for Schools](#) and [IAQ Tools for Schools Preventive Maintenance](#) documents, action plans, and checklists. In these documents you'll find tips on:

Routine HVAC Systems Maintenance:

- Ensure school HVAC systems are operating properly, with outdoor ventilation air maintained at or above design minimum values. Determine whether HVAC systems comply with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62.1 ventilation requirements at the system level and in the breathing zones of all occupied spaces.
- Employ filtration and gas-phase air cleaning strategies to further improve IAQ, in conjunction

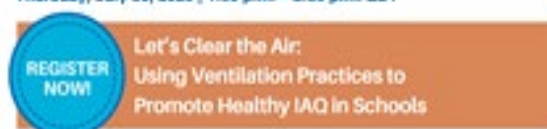


Healthy Indoor Environments in Schools: Plans, Practices and Principles for Maintaining Healthy Learning Environments

Join the U.S. Environmental Protection Agency (EPA) for a three-part webinar series on creating and maintaining healthy learning environments in schools. The webinars will feature experts, including school district leaders who will discuss the plans, practices and principles they have put in place to sustain comprehensive indoor air quality (IAQ) management programs. Each webinar includes a moderated question-and-answer session with speakers and representatives from EPA and the Centers for Disease Control and Prevention (CDC).

Register for the upcoming webinar in this series—

Thursday, July 30, 2020 | 1:00 p.m. – 2:30 p.m. EDT



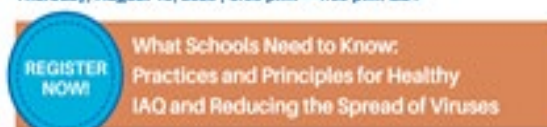
Register for this webinar to hear about strategies for operating and maintaining efficient HVAC systems to provide clean and healthy air in schools. You will learn how to apply findings from scientific research and guidance on ventilation to reduce the spread of viruses and bacteria using comprehensive IAQ plans and practices.

Thursday, August 6, 2020 | 1:00 p.m. – 2:30 p.m. EDT



Register for this webinar to learn how to tailor your cleaning and maintenance plan and procedures to help implement cleaning guidance for schools and reduce the spread of viruses and bacteria. You also will hear about strategies for training staff and building a capable, committed team to effectively implement robust procedures focused on cleaning for health, as well as CDC's [Considerations for Schools](#) guidance.

Thursday, August 13, 2020 | 3:00 p.m. – 4:30 p.m. EDT



EPA Resources for Responding to COVID-19 in Schools



A Clean Start: Controlling Viruses and Bacteria in Schools with Healthy Cleaning Practices

Part 2: Ventilation in Schools

You asked, we answered! The US Environmental Protection Agency (EPA) Indoor Environments Division received many questions from the recent webinar *Cleaning Schools to Control for Viruses and Bacteria: Maintaining Healthy Indoor Learning Environments* that were not able to be answered during the presentation. Over the summer, questions will be answered in the Schools IAQ Connector series: *A Clean Start: Controlling Viruses and Bacteria in Schools with Healthy Cleaning Practices*.



Question: What HVAC maintenance is recommended for schools? How much ventilation is needed? And why are proper ventilation and HVAC maintenance important?

Answer: Proper ventilation and HVAC maintenance are key components of a comprehensive indoor air quality (IAQ) management program. HVAC systems help maintain good indoor air quality through adequate ventilation with filtration and provide thermal comfort. Providing optimal ventilation improves student health and academic performance, creating a healthy and productive learning environment.



IAQ Tools for Schools Action Kit

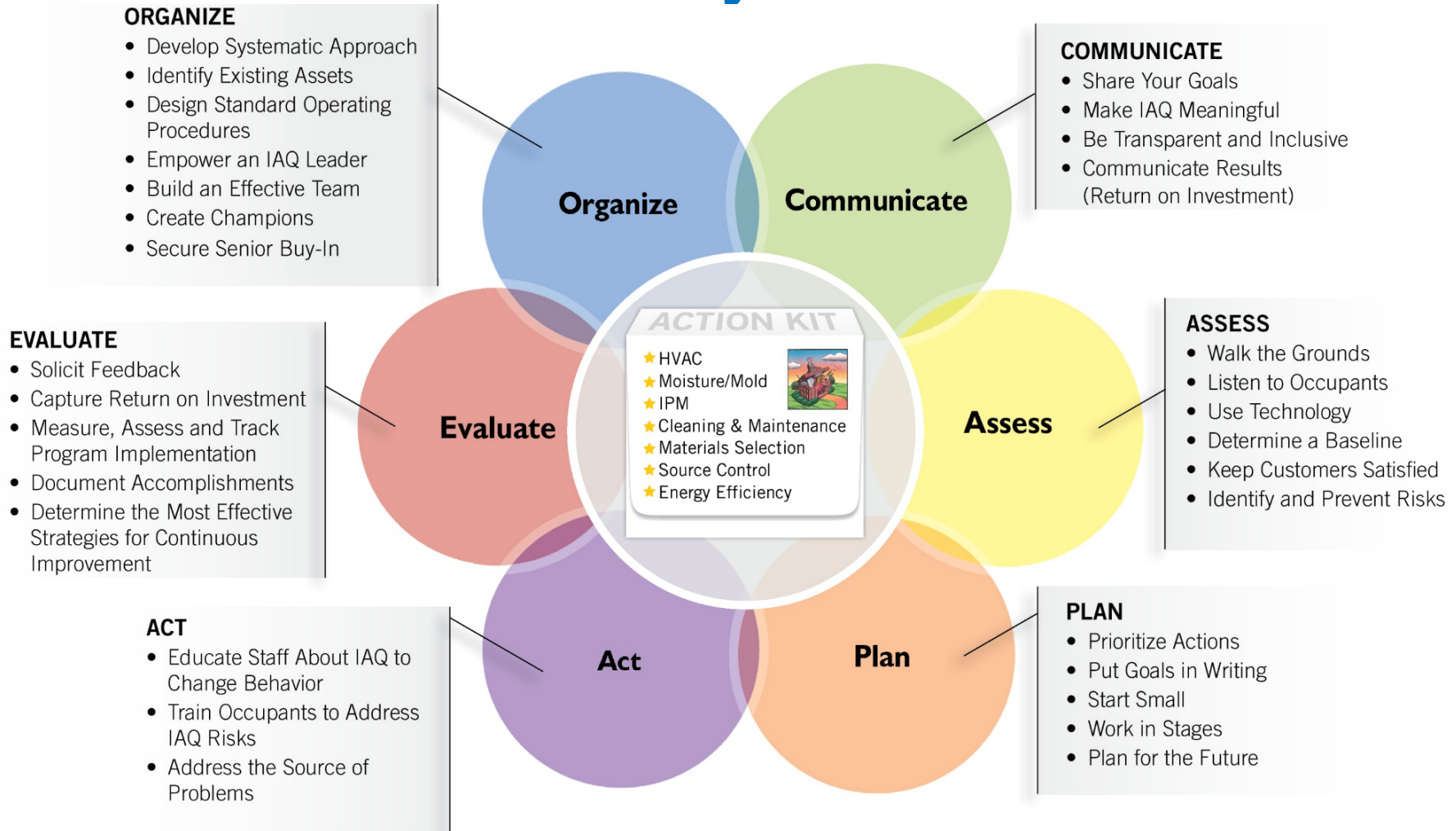
What is it? A practical plan for improving your IAQ knowledge using straightforward solutions and individuals already on staff.

The Action Kit includes—

- Reference guides
- Checklists
- Fact sheets
- Sample policies
- Comprehensive IAQ management plans
- The Framework for Effective School IAQ Management
- The Seven Technical Solutions



The Framework for Effective School IAQ Management: Six Key Drivers



The Framework for Effective School IAQ Management: Seven 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 Standards 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 a 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 and Maintenance

- Conduct routine inspections of school environment
- Develop a preventive 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



Integrated Energy Management Solutions

- Protect IAQ during energy efficiency upgrades and building renovations
- Conduct regular HVAC maintenance and tune-ups
- Install programmable thermostats
- Consider performing post-construction commissioning for HVAC systems
- Control moisture in building assemblies, mechanical systems and occupied spaces



Guidance for Schools

GUIDANCE FOR CLEANING AND DISINFECTING

**PUBLIC SPACES, WORKPLACES, BUSINESSES,
SCHOOLS, AND HOMES**



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Cleaning and disinfecting public spaces including your workplace, school, home, and business will require you to:

- Develop your plan
- Implement your plan
- Maintain and revise your plan

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For more information, please visit **CORONAVIRUS.GOV**



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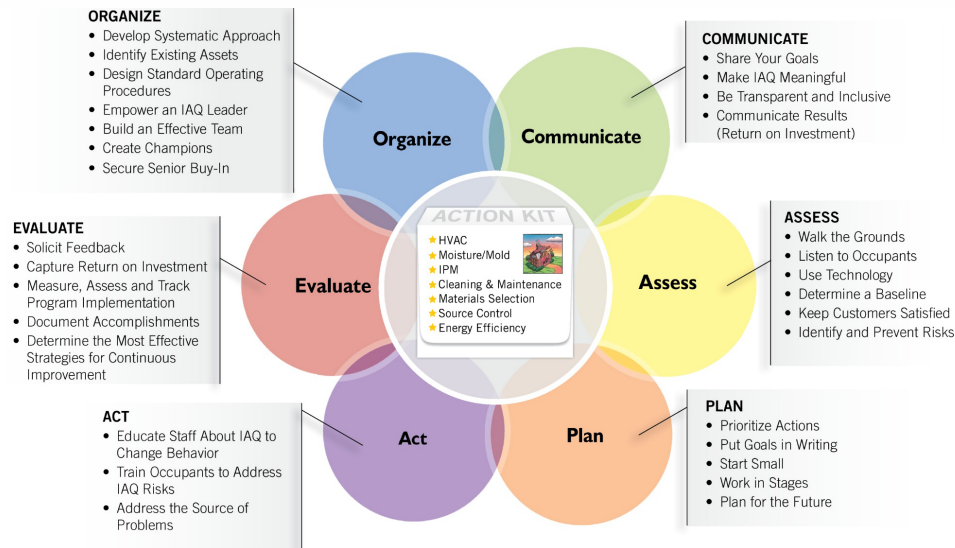


1. Develop your plan.
2. Implement your plan.
3. Maintain and revise your plan.

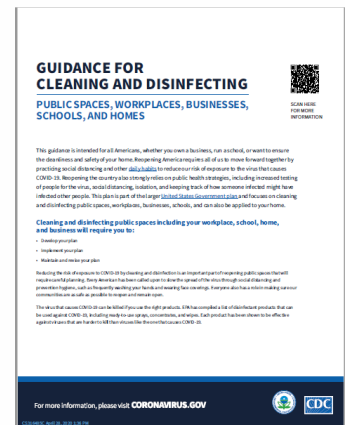


Indoor Air Quality (IAQ)

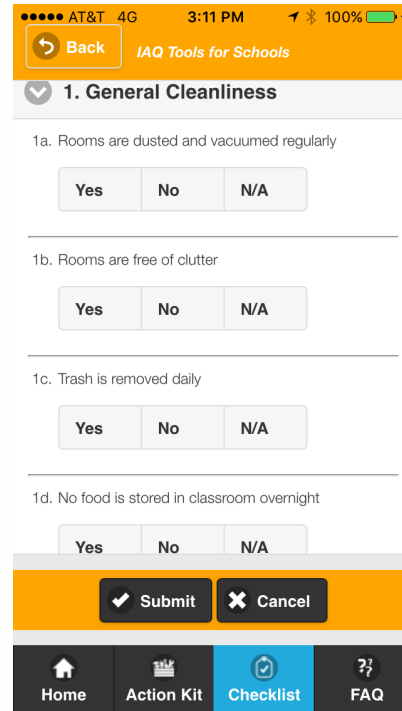
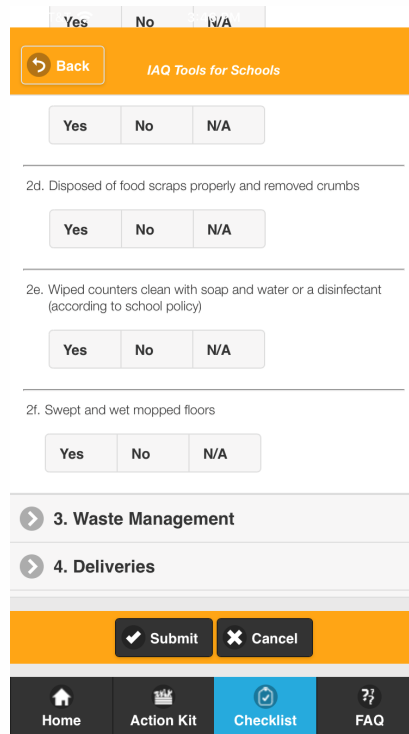
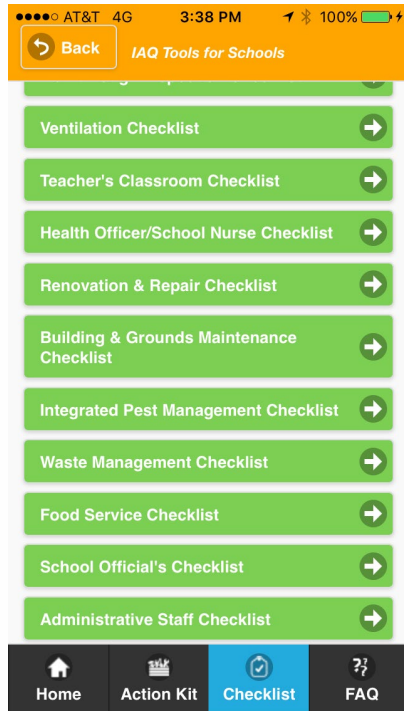
Develop Your Plan



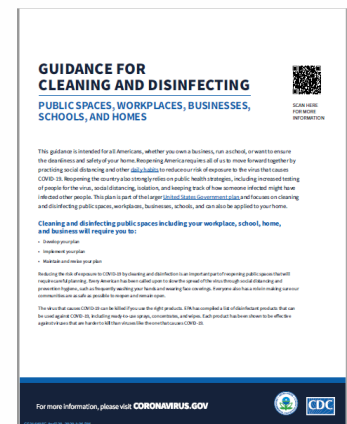
- Determine what needs to be cleaned.
- Determine how areas will be disinfected.
- Consider the resources and equipment needed.



Implement Your Plan



Clean visibly dirty surfaces with soap and water prior to disinfection.



Implement Your Plan

- Use the appropriate cleaning and disinfectant product.
- Always follow the directions on the label.



Environmental Topics Laws & Regulations About EPA

Search EPA.gov

Pesticide Registration

Pesticide Registration Home

About Pesticide Registration

Electronic Submission of Applications

Pesticide Registration Manual

Fees and Waivers

Registration Information by Type of Pesticide

— Antimicrobial Registration

— Biopesticide Registration

— Conventional Registration

— Inert Ingredient Registration

Requirements and Guidance

— Data

— Forms

— Labeling

List N: Disinfectants for Use Against SARS-CoV-2 (COVID-19)

All products on this list meet EPA's criteria for use against SARS-CoV-2, the virus that causes COVID-19.

Finding a Product

To find a product, enter the first two sets of its EPA registration number into the search bar below. You can find this number by looking for the EPA Reg. No. on the product label.

For example, if EPA Reg. No. 12345-12 is on List N, you can buy EPA Reg. No. 12345-12-2567 and know you're getting an equivalent product.

[Search by EPA registration number](#)

Using Other Products

If you can't find a product on this list to use against SARS-CoV-2, look at a different product's label to confirm it has an EPA registration number and that human coronavirus is listed as a target pathogen.

Follow the Label

When using an EPA-registered disinfectant, follow the label directions for safe, effective use. Make sure to follow the contact time, which is the amount of time the surface should be visibly wet, listed in the table below. [Read our infographic on how to use these products.](#)

View List N's information in our new tool

Search by EPA registration number

Active Ingredient

Use Date

Contact Time

Product ID

Keyword Search

6 Steps for Safe & Effective Disinfectant Use



Step 1: Check that your product is EPA-approved

Find the EPA registration number on the product. Then, check to see if it is on EPA's list of approved disinfectants at [epa.gov/listn](#)



Step 2: Read the directions

Follow the product's directions. Check "use sites" and "surface types" to see where you can use the product. Read the "precautionary statements."

Step 3: Pre-clean the surface

Make sure to wash the surface with soap and water if the directions mention pre-cleaning or if the surface is visibly dirty.



Step 4: Follow the contact time

You can find the contact time in the directions. The surface should remain wet the whole time to ensure the product is effective.

Step 5: Wear gloves and wash your hands

For disposable gloves, discard them after each cleaning. For reusable gloves, dedicate a pair to disinfecting COVID-19. Wash your hands after removing the gloves.



Step 6: Lock it up

Keep lids tightly closed and store out of reach of children.

coronavirus.gov



GUIDANCE FOR CLEANING AND DISINFECTING PUBLIC SPACES, WORKPLACES, BUSINESSES, SCHOOLS, AND HOMES



SCAN HERE FOR MORE INFORMATION

This guidance is intended for all Americans, whether you own a business, run a school, or want to ensure the cleanliness and safety of your home. Recognizing shared responsibility, all of us can move forward together by practicing social distancing and other [guidance](#) to reduce our risk of exposure to the virus that causes COVID-19. Reducing the virus's ability to spread in public health strategies, including increased cleaning of people for the virus, social distancing, isolation, and keeping track of how someone infected might have infected other people. This plan is part of a larger [strategy](#) to control the spread of the virus on cleaning and disinfecting public spaces, workplaces, businesses, schools, and can also be applied to your home.

Cleaning and disinfecting public spaces including your workplace, school, home, and business will require you to:

- Identify the space
- Inspect the space
- Prepare and clean the space

Reducing the risk of exposure to COVID-19 by cleaning and disinfecting is an important part of keeping public spaces that will require cleaning. They are not to be used to clean the virus through social distancing and personal hygiene, such as frequently washing your hands and wearing face masks. Strategies and best practices making cleaning more effective are available to agents and researchers.

This document covers COVID-19 cleaning and disinfection for the right products. Other products are not disinfectants that can be used against COVID-19. Including disinfectants for use on surfaces, containers, and more. Each product has been chosen to be effective against COVID-19 and has been tested by the Environmental Protection Agency (EPA).

For more information, please visit [CORONAVIRUS.GOV](#)




Indoor Air Quality (IAQ)




Maintain and Revise Your Plan

Continue Routine Cleaning and Disinfecting



Indoor Air Quality Preventive Maintenance Checklist



Preventive Maintenance Full

Make a Copy of Checklist

Select and Customize a Checklist

Use Filters Below to Customize Checklist

School Name: _____

Date: _____

This tool is designed to allow you to add your own checks or modify the existing checks to match your needs. You may want to add additional activities related to IAQ preventive maintenance, such as those in *IAQ Tools for Schools*. Enable macros to use this checklist customizer. Refer to Help files to learn how to enable macros for your version of the software.

Category	Category Data	Action	Priorit	Y	N	Notes
Cleaning – Green Methods & Maintenance	Cleaning – Green Methods & Maintenance	Read and followed product labels.	MA	<input type="checkbox"/>	<input type="checkbox"/>	
Cleaning – Green Methods & Maintenance	Cleaning – Green Methods & Maintenance	Used only the amount of cleaning products needed.	MA	<input type="checkbox"/>	<input type="checkbox"/>	
Cleaning – Green Methods & Maintenance	Cleaning – Green Methods & Maintenance	Managed and disposed of cleaning products safely and in an environmentally friendly way.	MA	<input type="checkbox"/>	<input type="checkbox"/>	
Cleaning – Green Methods & Maintenance	Cleaning – Green Methods & Maintenance	Conducted routine inspections of school environment after work is completed (daily checks at schools and monthly inspections district-wide).	AP	<input type="checkbox"/>	<input type="checkbox"/>	
Cleaning – Green Methods & Maintenance	Cleaning – Green Methods & Maintenance	Trained cleaning/maintenance staff on products and protocols.	MA	<input type="checkbox"/>	<input type="checkbox"/>	

Instructions

PMChecklist



Featured Expert Speakers



**TRACY WASHINGTON
ENGER**

FACILITATOR

Indoor Environments Division,
U.S. Environmental Protection
Agency



SHAWNA CRAGUN

**CUSTODIAL SERVICES
DIRECTOR**

Davis School District, Utah



MIKE JONES

**DIRECTOR OF CUSTODIAL
SERVICES**

Columbia Public
Schools, Missouri



MERVIN BREWER

**ASSISTANT CUSTODIAL
SUPERVISOR**

Salt Lake City School
District, Utah



RICKY MARTINEZ

**ASSISTANT CUSTODIAL
SUPERVISOR**

Salt Lake City School
District, Utah



Disclaimer: The views expressed in this presentation are solely those of the speakers and do not necessarily reflect those of EPA.

Indoor Air Quality (IAQ)



Shawna Cragun

**Previous: Custodial Services Director
New: Transportation Services Director
Davis School District, Utah**

**Former President,
Utah Schools Custodial Managers Association**



Overview

Davis County School District



- **Farmington, Utah**
- **Students:** 73,000
- **Staff:** 8,200 (665 custodians, 257 full-time)
- **Facilities:** 104 buildings, 11.5 million square feet (ft²)
- **Custodial Budget:** \$19.5 million





KEY DRIVER:

Organize for Success

Build an Effective Team

Collaboration Between Departments

Facilities Management Group—Monthly

Accounting, Architectural, Area Directors, Assistant Superintendent, Custodial, Facilities Administrator, IT, Maintenance, Purchasing and Superintendent

Energy Committee Meeting—Monthly

Maintenance, IT, Facilities Administrator, Energy Management, Custodial and Architectural

Fall Restart Committee Meetings—Tri-Weekly

Transportation, Custodial, Risk Management, Association, Public Relations, Nursing, Superintendent, School Leadership and Athletics





KEY DRIVER: Communicate With Everyone, All the Time

Communication Methods

- 5-Minute Videos
- Newsletters
- Emails
- Phone Calls
- Virtual Meetings
- Meetings (Physical Distancing)
- Website
- Social Media



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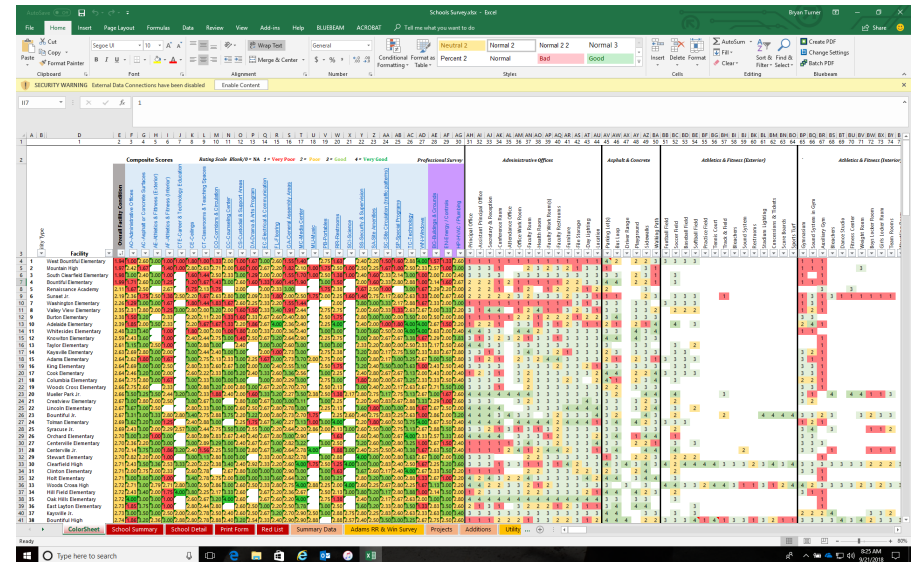




KEY DRIVER: Assess Your Environments Continuously

Know Where You Are

- Community Surveys
- Employee Surveys
- Facility Assessment Tool
- Look at Test Scores
- Energy Consumption
- Fire Marshall Reports
- Health Department Meetings
- CDC Guidelines





KEY DRIVER:

Plan Your Short- and Long-Term Activities



Solid Foundation

- Great Day-to-Day Operations
- Multistep Plan
- Highly Contagious Contamination Cleanup
- Building Relationships of Trust and Respect
- Davis Supports Students

LEARNING
FIRST!





KEY DRIVER:

**Act to Address Structural, Institutional
and Behavioral Issues**
Educate Staff About IAQ to Change Behavior

Retain Staff

June 2014: 16.88% of positions open

July 2020: 1% of positions open

- More Active Coordinators in the Schools/Facilities
- Custodial Appreciation Week
- Custodian of the Year
- Improved Resources
- Know People
- Training for Success





KEY DRIVER: Evaluate Your Results for Continuous Improvement

Continued Improvement

- Community Surveys
- Employee Surveys
- Involving All Levels
- Welcome Change If It Is Improvement
- Be Open to New Technologies
- Look at Leaders in the Industry
- ATP Testing



COVID-19

Davis School District

The BIG FIVE

Davis Learns Together
Reopening Plan for Davis School District - Fall 2020

Hygiene Etiquette

Handwashing
Reinforce handwashing with soap and water for at least 20 seconds.

Hand Sanitizing
Stations will be available as students enter and exit building and classrooms, and before and after meals in the cafeteria.

Respiratory
Reinforce covering coughs and sneezes with a tissue or into your elbow. Discard tissue after one use.

Physical Contact
Reinforce physical distancing, including no handshakes, high fives, or hugs.

Stay Home When Sick

Stay Home When Appropriate
If you feel sick; stay home.

Monitor Symptoms
Students who present with COVID-19 symptoms during the school day will be isolated in a sick room until a parent can pick them up.

Accommodate High-Risk Students and Staff
A plan is in place to support alternative learning for self-identified high-risk students and to mitigate risk for self-identified high-risk staff.

Cloth Face Mask

Face Mask Etiquette
A cloth face mask will be provided to all employees and students.

Employees will be directed to wear face masks when physical distancing is not possible.

Students must wear face masks on school buses. Students are encouraged to wear face masks in other situations when physical distancing is not possible.

Visitors, non-regular staff, and volunteers will be required to wear face masks, have a temperature check, and complete a symptom checklist.

Physical Distancing

Layouts Modification
Classroom, cafeteria, and hallway setting will be modified to mitigate risk.

Playgrounds
Safety principles and physical distancing will be reinforced on playgrounds during recess.

Large Gatherings
There will be no group gatherings during the school day unless physical distancing can be maintained.

Clean and Disinfect

Cleaning Schedule
Custodial services will schedule increased routine cleaning and disinfection.

There will be regular cleaning and disinfecting of frequently touched surfaces within the school, on playground equipment, and on school buses.

Shared Objects
Sharing of items that are difficult to clean or disinfect will be minimized.

Backpacks in classrooms will be allowed to keep student's belongings separated from others.

Air Handling & Filters
Increase airflow throughout building and implement high efficiency filtration levels.

Designated COVID-19 Point of Contact - Each school will designate an administrator to be responsible for responding to COVID-19 concerns.





Mervin Brewer

Assistant Custodial
Supervisor



Ricky Martinez

Assistant Custodial
Supervisor

Salt Lake City School District (SLCSD)



Overview

Salt Lake City School District



Students: 24,000 students

Staff: 4,200 educators, administrators, support personnel

Facilities: 36 schools, 4.5 million ft²

Custodial Budget: \$5.7 million





KEY DRIVER:

Communicate With Everyone, All the Time
Make IAQ Meaningful

Value Proposition

The bold goals our program is focused on include having a highly educated work force that is knowledgeable in and has bought into creating the healthiest, most sustainable learning environment possible and creating a culture of leaders at all levels who strive to always improve the standard of customer service and healthy environments.

By training and supporting our staff, our personnel will be trusted and respected as the professionals they are for the students and patrons. They will generate hundreds of thousands of dollars in not only avoided energy and waste costs, but also in labor and chemical costs in the next decade.





KEY DRIVER:

Communicate With Everyone, All the Time

COMMUNICATE

- Share Your Goals
- Make IAQ Meaningful
- Be Transparent and Inclusive
- Communicate Results (Return on Investment)

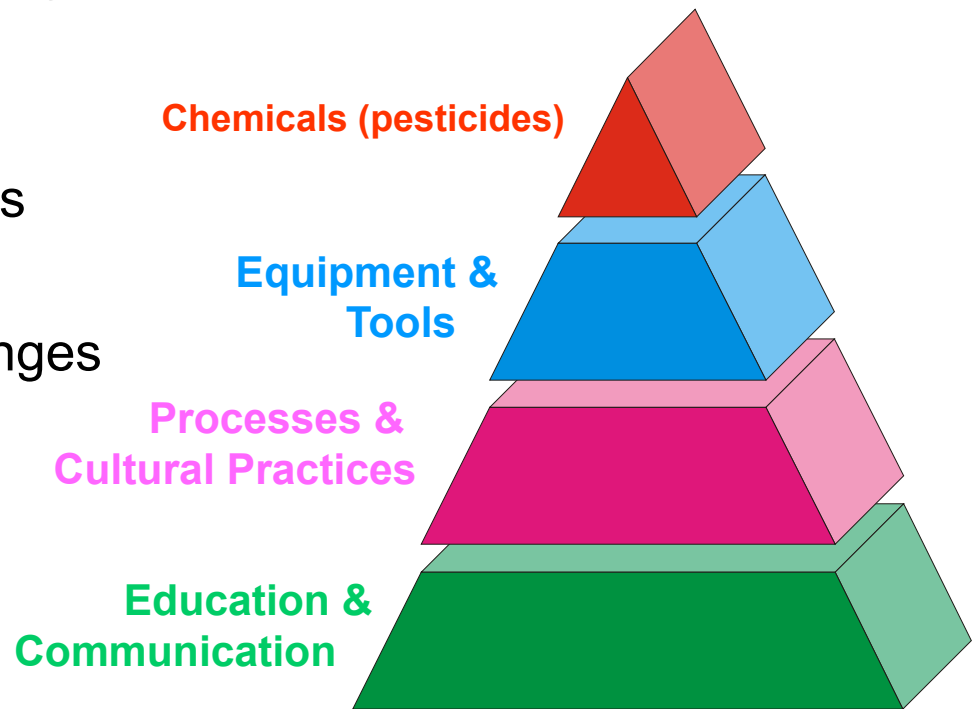




KEY DRIVER: Plan Your Short- and Long-Term Activities Strategy

Integrated Pest Management Principals—A Solid Foundation

- Education & Communication
- Processes & Cultural Practices
- Equipment & Tools
- Chemicals (pesticides)
- Easier to adjust to new challenges





KEY DRIVER:

Organize for Success

Develop a Systematic Approach

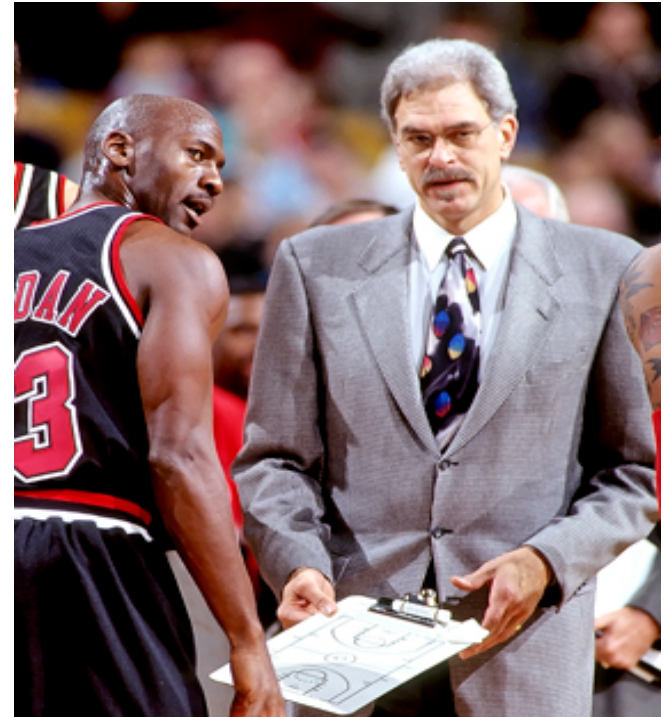
Make Adjustments to Existing Plans

Establish a game plan or blueprint.

- Clean for Health
- Infection Control
- Building Relationships

Don't throw out your game plan, adapt to the challenges.

- Make a Few Adjustments
- Expand Your Team





Take advantage of opportunities to enhance your plan.

- Equipment and New Technologies
- Products and Chemicals
- Adjust Process to Fit Priority
- Take the Opportunity to Take Control



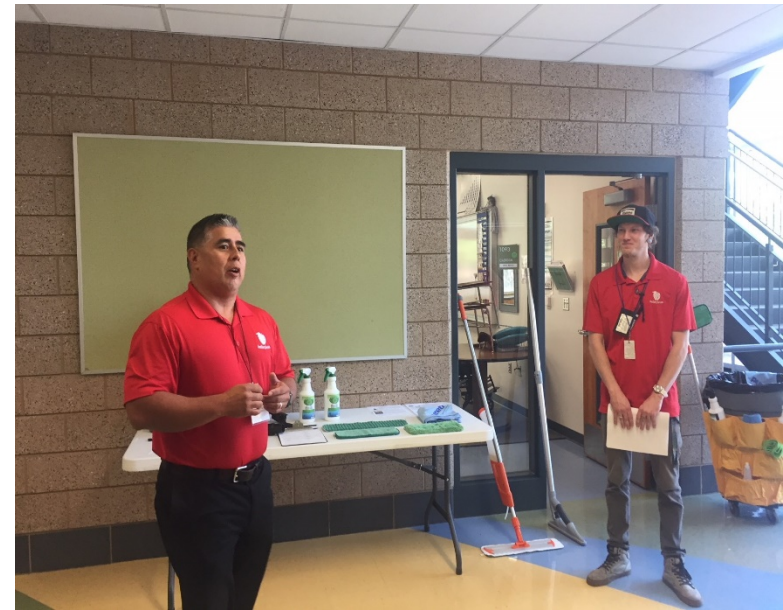


KEY DRIVER:

**Act to Address Structural, Institutional
and Behavioral Issues**
Educate Staff to Change Behavior

New terms to learn:

- Routine sanitization
- Thorough sanitization
- Detail cleaning and sanitizing
- Reduction



**SALT LAKE CITY
SCHOOL DISTRICT**

Indoor Air Quality (IAQ)

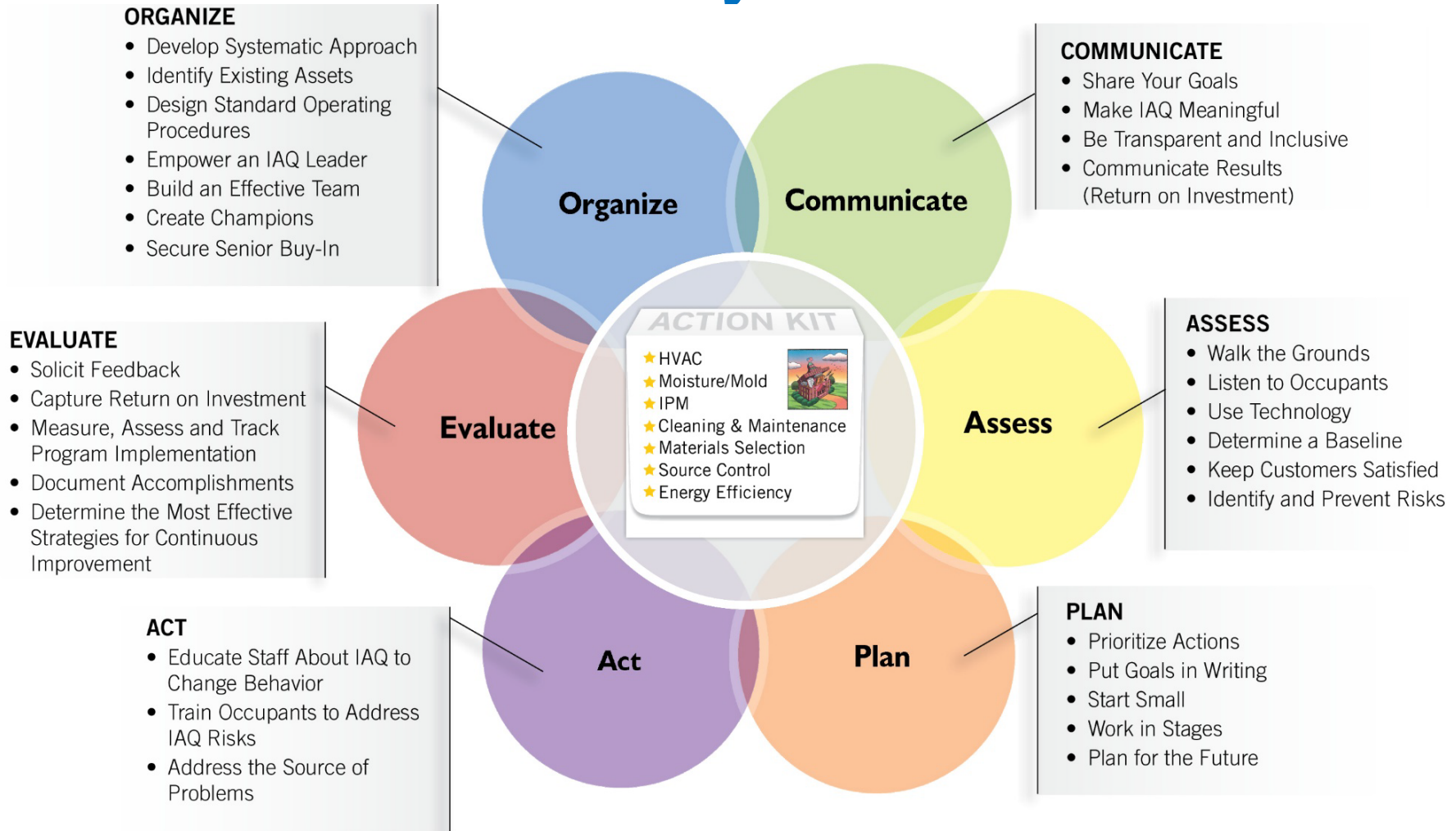
KEY DRIVER:
Assess Your Environments Continuously
Strategy

Now Is the Time to—

- Be open-minded
- Be skeptical
- Network
- Listen
- Communicate and educate



The Framework for Effective School IAQ Management: Six Key Drivers





Mike Jones

Director of Custodial Services
Columbia Public Schools, Missouri



Overview

Columbia Public Schools

- **Columbia, Missouri**
- **Students:** 18,335
- **Staff:** 147 full-time employees
- **Facilities:** 40 buildings, 3.5 million ft²
- **Custodial Budget:** \$5,052,341



Columbia
PUBLIC SCHOOLS





KEY DRIVER:

Organize for Success

Build an Effective Team and Create Champions



Columbia Public Schools

An Excellent Education For All Our Students

Mission Statement

Vision

Our desired future state

To be the **best school district** in our state.

Mission

Why we exist

We provide an **excellent education** for our students by adhering to organizational goals.

Purpose

What we do

To be a **valuable asset** for our community by preparing our children so that they will be competitive in an ever-changing, unpredictable world.

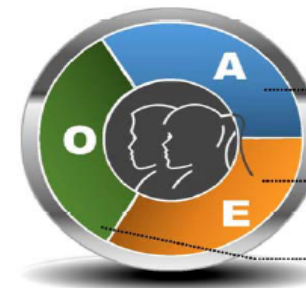
Values

The non-negotiable family principles that guide us

- Honesty
- Focus on what works
- Transparency
- Teamwork
- Mutual respect
- Persistence
- Adaptability
- Positive approach
- Commitment

Columbia Public Schools

Organizational Anchors



A All students graduate college- or career-ready

E Every teacher becomes the best

O Our operations make our mission possible

A All students graduate college- or career-ready

- Ninety percent of students will attend school at least ninety percent of the time

- Out-of-school suspension numbers will decrease for all student groups

- Students will achieve academic progress

E Every teacher becomes the best

- Our professional development plan will give teachers the skills they need

- Our district evaluation plan will help teachers and administrators be better

O Our operations make our mission possible

- We will be fiscally responsible with taxpayer money
- Our support staff makes it possible for us to achieve AEO for our kids



Standardized Cleaning Process

- **Target Population:** Protecting the health of staff, students and the community.
- **Inputs:** Increase hand-sanitizing stations, sneeze guards, EPA-registered disinfectant for custodial staff and cleaner/sanitizer for teachers, cleaning checklists for staff.
- **Activities/Tasks:** Act—Reallocate staff during daytime, install sanitizing stations, provide hourly/weekly cleaning checklists. Assess—Cleaning checklists and inspections by supervisors. Evaluate—What are our absenteeism rates per day and week in buildings?
- **Outputs:**
 - Training of staff to understand COVID-19.
 - Perception of staff constantly cleaning.
 - Policies in line with green cleaning.
- **Outcomes:** Improved cleanliness. Reduced IAQ and health complaints.
- **Impact:** Early planning increased operating budget \$200,000. Healthier staff and students.





KEY DRIVER: **Communicate With Everyone, All the Time** **Strategy**

- Weekly Incident Command Meetings
- Boone County Health Department and City of Columbia Guidelines
- Teacher Commitment and Understanding
- Custodial Meetings





KEY DRIVER: Assess Your Environments Continuously Strategy

- Breakfast and Lunch in Classrooms
- Excess Furniture Stored in Gyms
- Classroom Rugs Removed
- No Tape With Names or Learning Devices on Surfaces





KEY DRIVER: Plan Your Short- and Long-Term Activities Strategy

- Evening Staff Coming in Early
- Custodial Staff and Perception of Cleaning
- Quad Cleaning
- Ordering Supplies





KEY DRIVER: Act to Address Structural, Institutional and Behavioral Issues Strategy

- Hands Cleaned With Soap and Water First
- Teachers Provided Sanitizer for Cleaning
- Shared Responsibility
- Mental Health





KEY DRIVER: Evaluate Your Results for Continuous Improvement Strategy

- Custodial Building Survey
- Full Building Inspections
- Absenteeism Records
- Be Flexible: Adjust and Change if Needed



Download the App Today

- ✓ Android: Google Play
- ✓ Apple: iTunes
- ✓ www.epa.gov/iaq-schools/school-iaq-assessment-mobile-app



Get Started Today!

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Indoor Air Quality Tools for Schools: Preventive Maintenance Guidance Documents

With thoughtful planning and regular maintenance for your buildings and facilities, you can prevent many issues from becoming costly problems through preventive maintenance. This guide will walk you through the steps to develop and implement your indoor air quality (IAQ) preventive maintenance plan. Within its pages, you will find tips to help you make the case for your plan and gain the buy-in you need from your school community. You also will find detailed guidance on why walkthroughs and assessments of your facilities, integrated pest management (IPM), green cleaning, heating, ventilating, and air conditioning (HVAC) and equipment upkeep, and mold and moisture prevention are important and how you can include them in your plan. Finally, you'll find tips on staffing and communication, as well as evaluating your program to make your IAQ preventive maintenance plan a success.

- [IAQ TFS Preventive Maintenance Guidance](#)

Appendices

- [Appendix A: IAQ Preventive Maintenance Checklist](#) (251 K)
- [Appendix B: IAQ Preventive Maintenance Plan](#) (8 pp, 88 K)
- [Appendix C: IAQ & Preventive Maintenance Value Proposition Worksheet](#)
- [Appendix D: IAQ Preventive Maintenance Sample Equipment Inventory](#) (17 pp, 98 K)
- [Appendix E: Annual Facility Equipment Preventive Maintenance Timeline](#) (14 pp, 119 K)
(Source: New York State Energy Research and Development Authority [NYSERDA])
- [Appendix F: Sample IAQ Measurements Tracking Sheet](#) (1 pg, 52 K)
- [Appendix G: Monthly Health Statistics](#) (1 pg, 59 K)
- [Appendix H: Example Preventive Maintenance Schedule](#)
(Source: [Minnesota Department of Health](#))



These resources are available to you at no cost at

www.epa.gov/iaq-schools/indoor-air-quality-tools-schools-preventive-maintenance-guidance-documents.

Indoor Air Quality (IAQ)



Professional Training Webinar Series

 Free Online Training,
Earn CEUs!

IAQ Master Class Series

Ten technical trainings to build your knowledge base to start, improve or sustain an IAQ management program. Complete all 10 to join the IAQ Master Class.

IAQ Knowledge-to-Action Series

Technical trainings to deepen your IAQ knowledge and build capacity to take immediate action.

Technical Knowledge

- Asthma Triggers
- HVAC Systems
- Moisture and Mold
- Energy Efficiency
- Integrated Pest Management
- Cleaning and Maintenance
- Materials Selection and Source Control

Capacity Building

- Funding
- Assessment and IAQ Mobile App
- Staff Training
- Gaining Buy-In
- Evaluation and Data

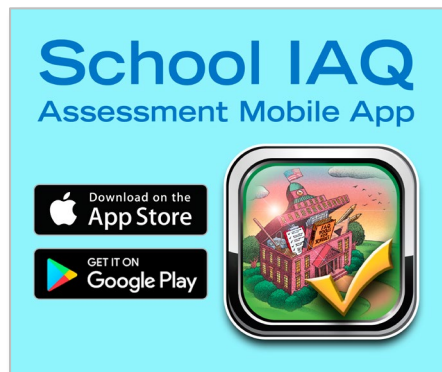
www.epa.gov/iaq-schools/ondemand-training-webinars



EPA Resources to Get You Started!



**IAQ Tools for Schools
Action Kit**



**IAQ Tools for Schools
Mobile App**



**Framework for Effective
IAQ Management**



**IAQ Master Class
Professional Training
Webinar Series**



**Energy Savings Plus Health Guide
and Interactive Air Quality Planner**



**IAQ Tools for Schools:
Preventive Maintenance
Guidance**

www.epa.gov/iaq-schools



Thank you for attending!

Your next action steps—

- Fill out the webinar evaluation form.
- Access your personalized certificate of completion.

