



Department
of Health

Environmental Health Technical Assistance For Schools

Todd Crawford
Michele Herdt, PhD, MPH
NYS DOH Center for Environmental Health
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Agenda

- IAQ and Ventilation
- Clean, Green and Healthy Schools
- Q & A

IAQ and Building Ventilation

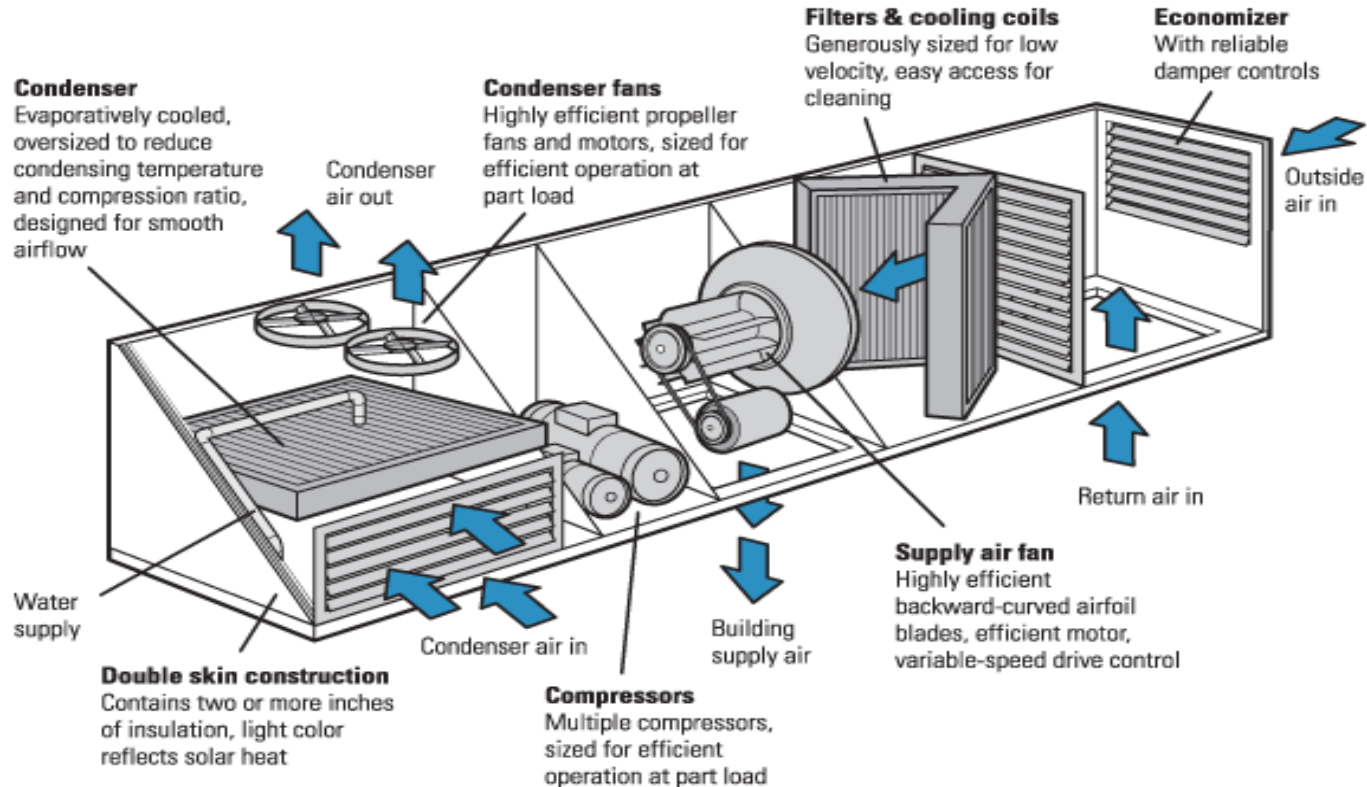
Heating, Ventilating and Air Conditioning (HVAC) Systems

- **Air Handling Unit**
 - Provides filtration, temperature control, and distributes the air
- **Outdoor Air Intake or Make-up Air Return**
 - This air replaces indoor air as it is exhausted from the building
- **Duct work**
 - Directs conditioned air in the building

Roof Top HVAC

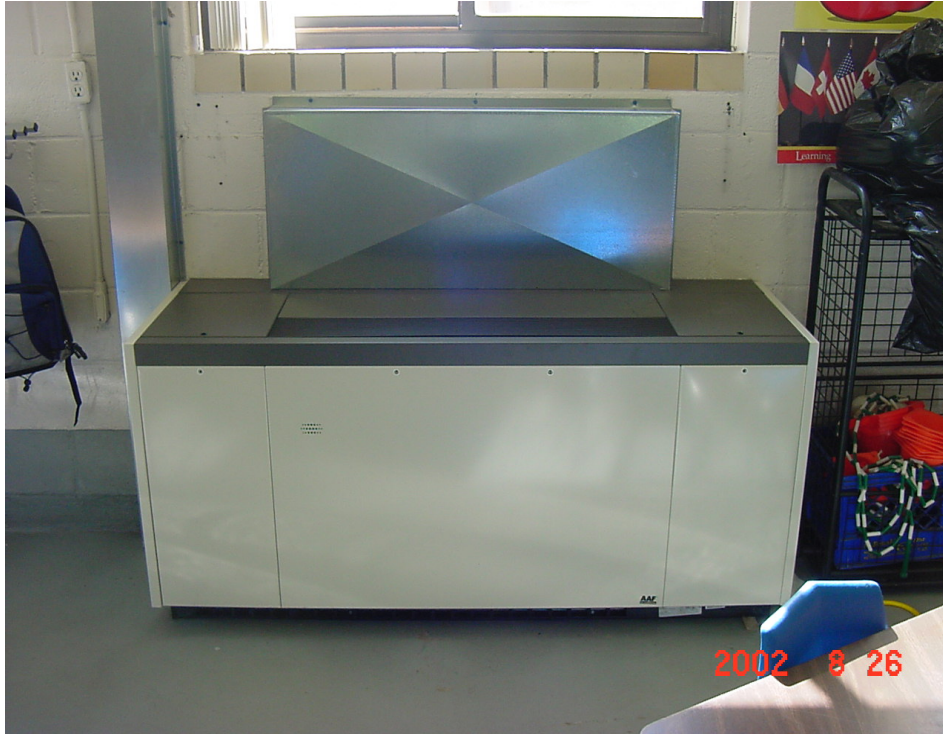


Roof Top Units

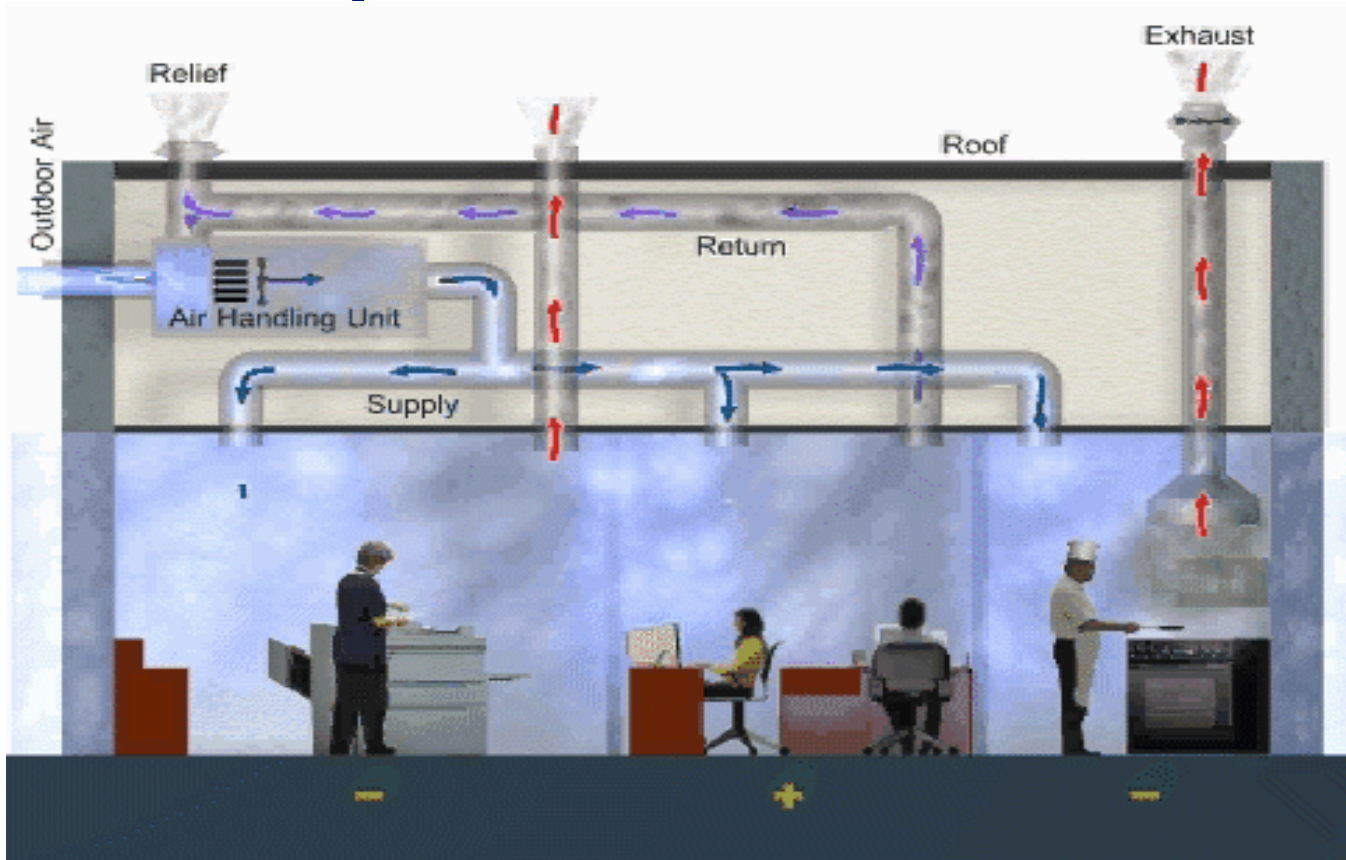


Courtesy: E source

Unit Ventilators



Components in Action



K-12 School Ventilation and Filtration

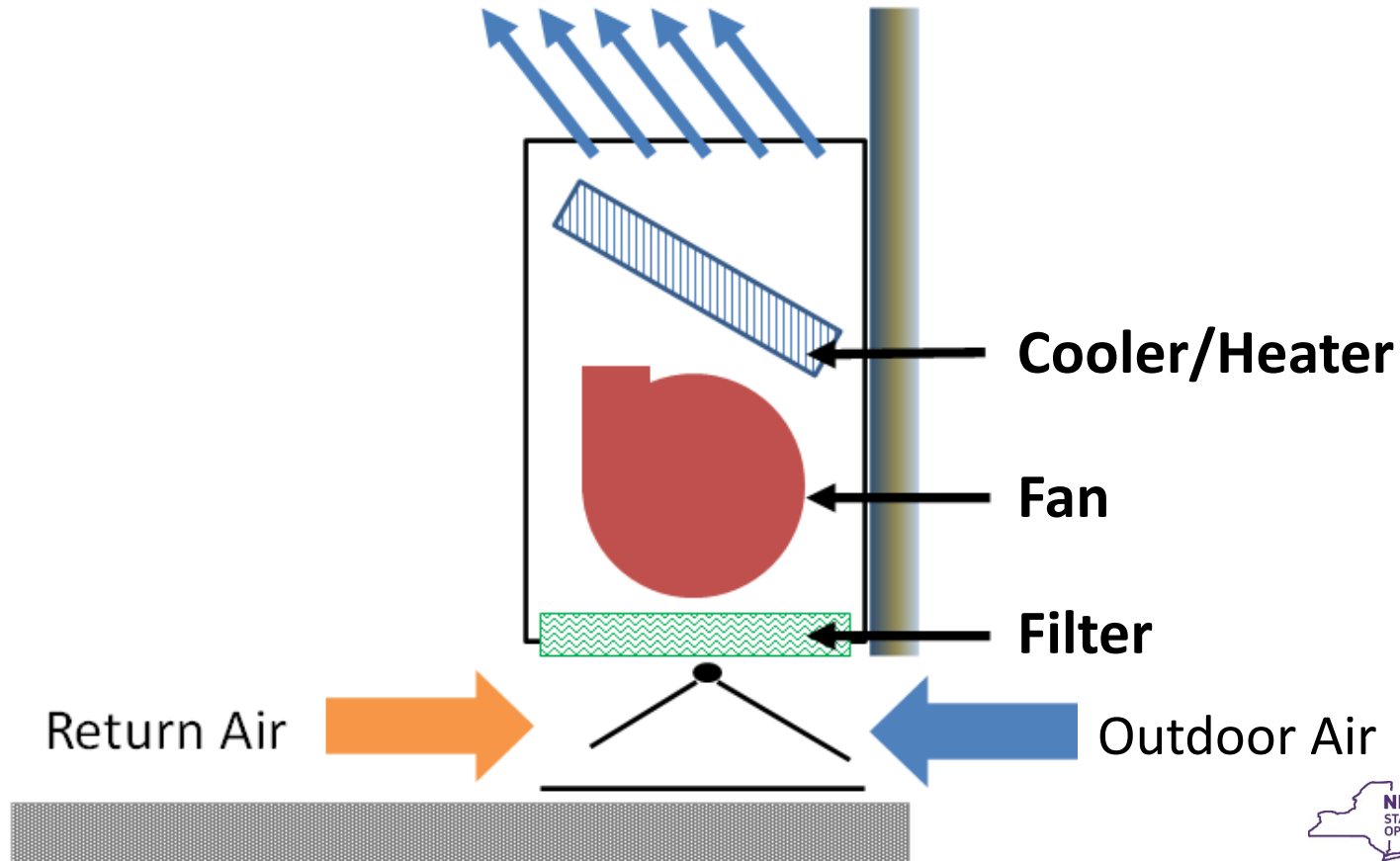
- Indoor air quality can be improved by:
 - Increasing outdoor air delivery to the building (ventilation)
 - Removing particulates/viral particles from the air (air filtration)
- Ventilation and filtration together can reduce the risk of COVID-19 transmission
 - Walls and barriers interfere with airflow and ventilation

Classrooms That Have Mechanical Ventilation

- Ensure the mechanical ventilation system is working properly, code compliant, and optimized:
 - Be sure diffusers, exhausts, and unit vents are not blocked or obstructed by cabinets, books, or other materials
 - Communicate to staff the importance of not obstructing diffusers and vents or attempting to modify the ventilation controls
 - For example, not adjusting the thermostat or fans in their respective rooms
 - Have a routine maintenance and inspection schedule
- Increase ventilation by increasing outdoor air and decreasing recirculated air as much as possible

Filtration of Centralized HVAC Systems

- Check and replace existing unit air filters as per manufacturers' instructions
- Upgrade to a filter with a Minimal Efficiency Rating Value (MERV) of MERV 13, or the highest rating compatible with existing equipment



Classrooms Without Mechanical Ventilation

Open windows and doors to maximize fresh air flow

- Consider the use of window and box fans to cross ventilate rooms
- For air filtration in areas lacking HVAC, use a portable air cleaner
 - Portable air cleaners are a supplement and cannot replace outdoor air ventilation and filtration



Portable Air Cleaners

Portable air cleaners may supplement other measures to decrease the risk of COVID-19 spread

- They may reduce, but may not eliminate, particles, viruses, and/or microbes in the air
- The use of portable filtration devices does not decrease the need for mask wearing, physical distancing, sanitation practices, or adequate ventilation


Particularly relevant for:

- rooms without natural ventilation (openable windows),
- for higher risk environments (e.g. nurses' station, isolation rooms),
- can be considered for any other areas where there is heightened concern



Portable Air Cleaners

- Use these devices in single rooms with closed door and windows
- Be sure the device is sized appropriately with the correct Clean Air Delivery Rate (CADR)
- Use the CADR rating of the device for tobacco smoke when comparing air cleaners, as this rating corresponds most closely with airborne viral particle sizes of concern
- Air cleaners should contain a high-efficiency particulate air filter or MERV 13 or greater filter efficiencies
- Units that feature ionizers, precipitators, or ozone generators do not provide additional benefit and can generate harmful byproducts







Independently Tested.
Consumer Trusted.

AIR CLEANER SUGGESTED CLOSED ROOM SIZE
418 SQUARE FEET

**CLEAN AIR DELIVERY RATE
& ENERGY TESTED**

The higher the CADR numbers, the faster the units clean the air


TOBACCO SMOKE	DUST	POLLEN
 270	 275	 280



Portable air cleaners are most effective in rooms where all doors and windows are closed. Suggested room size is based on 4.8 Air Changes per hour.

www.ahamverifide.org

**Meets California ozone emissions
limit: CARB certified**



This product earned the ENERGY STAR label by meeting strict energy efficiency guidelines set by the U.S. EPA. Room air cleaners have demonstrated the potential for improving air quality and providing health benefits. EPA does not endorse manufacturer claims regarding the degree to which a specific product will produce healthier indoor air.

Ventilation Considerations for Nurses Stations and Isolation Rooms

Higher potential for COVID-19 exposure

Should not mix the air with the remainder of the building

- Maximize outdoor air ventilation of these areas.
- If possible:
 - Supply 100% fresh air,
 - Increase ventilation rate to 10 air changes per hour,
 - Separate exhaust air to the outside
- Portable air filtration units should be considered for these areas

Clean, Green, and Healthy Schools

Nine Focus Areas



Indoor Air Quality (IAQ)



Energy and
Resource
Conservation



Integrated Pest
Management
(IPM)



Mold/Moisture



Chemical and
Environmental
Hazards



Cleaning and
Maintenance



Transportation

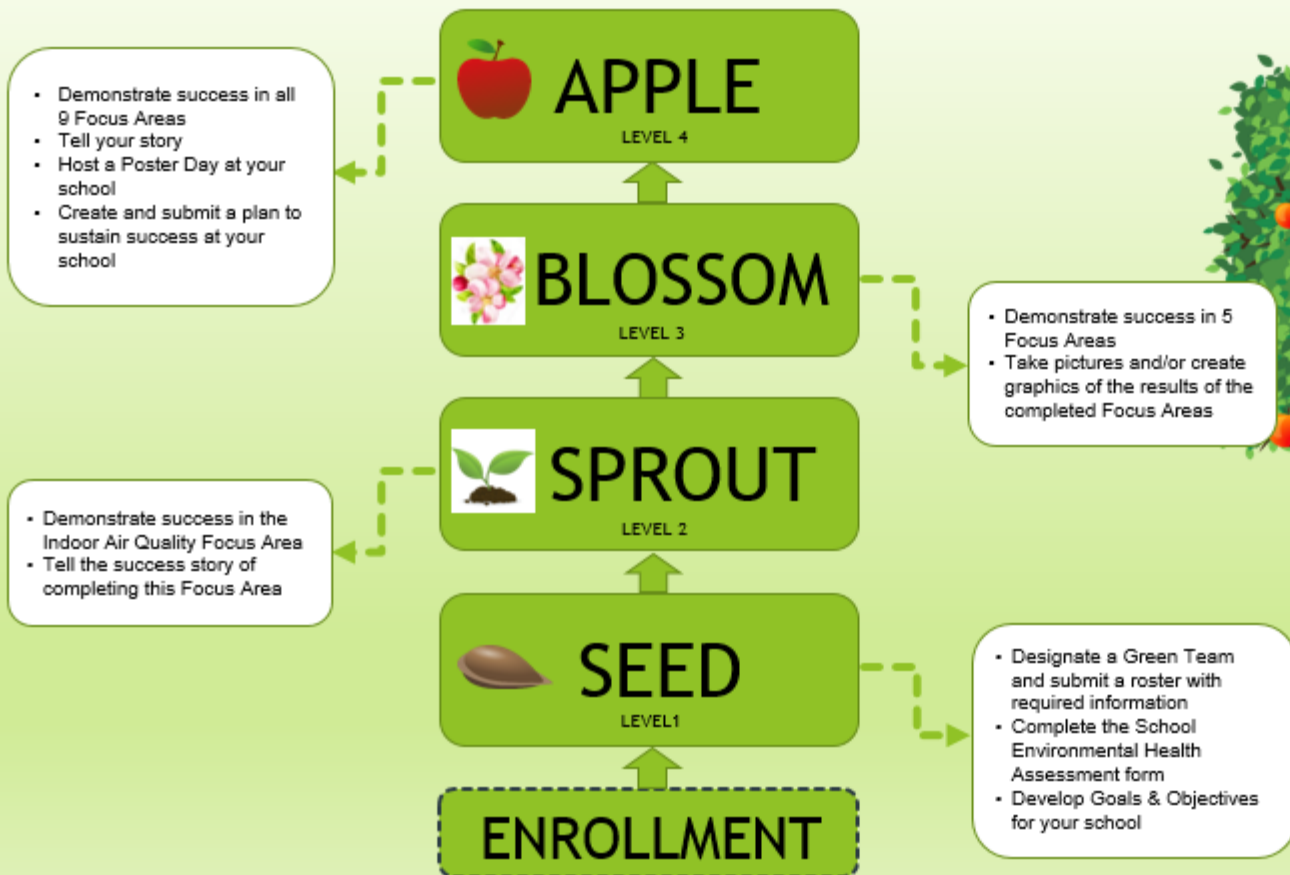


Construction/
Renovation



Water Quality

CLEAN, GREEN, AND HEALTHY SCHOOL



K-12 Resources

SED COVID-19 Guidance

<http://www.nysed.gov/coronavirus>

[Contact Us | New York State Education Department \(nysed.gov\)](#)

CDC COVID-19 Guidance

www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-guidance.html

ASHRAE COVID-19: One Page Guidance Documents

<https://www.ashrae.org/technical-resources/covid-19-one-page-guidance-documents>

Websites to compare room air cleaners

Association of Home Appliance Manufacturers (AHAM): <https://www.ahamdir.com/room-air-cleaners/>

California Air Resources Board (CARB): <https://ww2.arb.ca.gov/our-work/programs/air-cleaners-ozone-products/california-certified-air-cleaning-devices>

Clean, Green, and Healthy Schools

www.health.ny.gov/environmental/indoors/healthy_schools/



**Department
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Key Contacts

Indoor Air

Todd Crawford
Pat Fritz, ME
518-402-7800

SchoolQuestionsCOVID@health.ny.gov

Clean Green Healthy Schools

Michele Herdt, PhD, MPH
Amanda St. Louis, MSPH
Jean-Pierre Munsie, MS
Alicia Lee, MPH
518-402-7950

Email: CGHSchools@health.ny.gov

Thank You



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