

MTA Environmental Health and Safety Module

Issue: Ventilation

This module focuses on some facts about ventilation; what school staff can do to identify and address mold problems and additional resources and information.

Information in this module can be presented in a 10-minute meeting. On the back are ***Quick Facts and Action Steps*** that an Association Rep can present at a school faculty meeting in about 3 minutes. Resources are provided in this module to supply additional information and strategic advice for Association Reps to use.

The most efficient way to prevent the build-up of indoor air pollutants is through effective ventilation. Construction of tightly sealed buildings, reduced ventilation to save energy, poorly maintained systems and exposure to school chemicals and synthetic building materials and furnishings contributes to poor indoor air quality.

Not all schools have an HVAC (heating, ventilation and air-conditioning) system. Some have only “natural” ventilation (windows) and passive vents that allow air to move without fans. Many have no humidity control or air-conditioning. The two most common HVAC designs for schools are unit ventilators (serves one room) and central air handling systems (serves multiple rooms).

HVAC systems:

- Control for temperature and humidity for thermal comfort
- Mix adequate amount of outdoor air with re-circulated air to meet ventilation needs. Testing for carbon dioxide (CO₂) levels is a way to troubleshoot ventilation problems. Readings above 800ppm CO₂ need more investigation.
- Isolate and remove odors and pollutants through pressure control (controls air flow), filters and exhaust fans. Ventilation rates are different for classrooms, bathrooms, science, art rooms, copy centers etc.
- Have maintenance plans: filter changes (seasonally), cleaning grilles and vents, eliminating leaks/condensation, balancing and checking controls.

Tips for addressing ventilation problems:

- Ask the school custodian what he/she knows about the ventilation system in your building
- Locate the air supply and return or exhaust grilles. Look for vents/grilles on walls, ceilings, hallways, in classroom crawl spaces or closets. The unit ventilator is under a window.
- Attach a tissue paper (can tape it to a yard stick for high ceilings) to the air vent. Its movement will show if and when air is supplied. The paper will cling to an operating air return/exhaust vent. Air movement should be continuous throughout the day.
- Avoid blocking air flow into the room from the unit ventilators (units under windows) or wall vents by keeping them free of books, plants, furniture, art projects, animal cages.

- Notice condensation or water pooling where the ventilation system is located. This could promote mold.
- Walk outside to see where the air intake is to your room or building. Is there visible debris on the louvers? Is it too near bushes (source of pollen), traffic exhaust or other sources of outdoor pollution?
- Keep a log of uneven temperatures with a thermometer taped to the wall (away from the air vents).
- Find out what the maintenance plan is for the ventilation system.
- Keep a record of any observations about ventilation problems.
- Use a common complaint form to report problems or needed repairs. The form should include a section to note when and how the problem is dealt with.

Quick Facts and Action Steps on Ventilation (3-minute meeting)

Facts:

- HVAC systems mix outdoor air with re-circulated air to meet ventilation needs. Testing for carbon dioxide (CO₂) levels is a way to troubleshoot ventilation problems. CO₂ readings above 800ppm need more investigation.
- HVAC systems should isolate and remove odors and pollutants. Ventilation rates are different for classrooms, bathrooms, science, art rooms, copy centers etc.
- HVAC maintenance plans include: filter changes (seasonally), cleaning grilles and vents, eliminating leaks/condensation, balancing and checking controls.

Actions:

- Locate the air supply and return or exhaust grilles and attach a piece of tissue paper to vents/grilles to see if air is flowing or exhausting from your classroom.(on unit ventilators under windows, on walls, ceilings, hallways, classroom crawl spaces or closets) Locate outside vents to note other sources of pollution entering the school such as vehicle exhaust.
- Avoid blocking air flow into the room at unit ventilators or wall vents by keeping them free of books, plants, furniture, art projects, animal cages.
- Keep a log of uneven temperatures with a thermometer taped to the wall (away from the air vents). Note condensation or water pooling.
- Use a common complaint form to report problems or needed repairs

If you have any other questions or concerns please contact your Association Rep.

Additional Resources:

- Go to the MTA Environmental Health and Safety Committee website at <http://www.massteacher.org/ehs>.
- Learn more about indoor air quality problems and establishing school Environmental Health and Safety Committees using the EPA Tools For Schools Kit at <http://www.epa.gov/iaq/schools/tfs/iaqback.html>
- For information about ventilation requirements: Commonwealth of Mass, Department of Labor Division of Occupational Safety: <http://www.mass.gov/dos/iaqdocs/iaq-392.htm>
- Contact MassCOSH Healthy Schools Initiative for technical assistance and training at 617-825-7233 x19, www.masscosh.org