COVID-19 GUIDANCE
Ventilation in schools
Quick tips and resources

The basics: Check your system’s operations, improve it as needed, and maintain it.

Check that your mechanical systems are operating well

- Have your HVAC system tested/balanced and/or commissioned by a licensed HVAC professional (see the EPA’s website on commissioning in schools).
- Make sure filters are clean and inserted according to the manufacturers’ requirements.
- Ensure exhaust fans that draw air out of the building are clean and functioning as designed.
- Avoid having non-maintenance staff adjust vents or ventilation system settings.

Improve ventilation in the building

- Increase outdoor air coming into your building by changing the settings on your mechanical system.
- Use filters in your HVAC systems that have the highest filtration (MERV) levels that your systems can accommodate. Ideally, use a MERV 13 or higher filter.
- Run exhaust fans continually while the building is occupied.
  - Start fan usage at least two hours before the building is occupied by students.
  - Continue fan usage until the building is no longer occupied in the afternoon/evening, preferably for two hours after the building is no longer occupied. Run fans in bathrooms and locker rooms throughout this period, regardless of space’s current occupancy.
- Open windows when weather and outdoor air quality allows.
  - Create cross ventilation by: opening windows that are near the ceiling and close to the floor, opening windows on opposite sides of the room, and/or using fans in windows to encourage air movement.
- Invest in supplemental air cleaning systems that are affordable and effective if existing ventilation strategies are inadequate.
  - Portable room filtration systems (e.g. HEPA filters): Make sure that the air turnover per hour is adequate for your space (use a sizing calculator to assess your space needs) and the noise level of the system will not be distracting to occupants.
  - At this time, it is not recommended that schools use ultraviolet germicidal irradiation (UVGI) except in very specific situations, in consultation with
qualified experts. Bipolar ionization (sometimes called needlepoint bipolar ionization, or NBPI) is not recommended. These strategies are costly and have not been proven to be effective in school environments; further, some of these systems can have unintended harmful byproducts, such as release of ozone.

Maintain your systems

- Communicate maintenance needs to in-house staff and contractors through a written maintenance plan and accurate logs.
- Change filters every three to four months, or according to manufacturer’s recommendations.
- Regularly check that ventilation systems/practices are working.
  - Schedule regular maintenance visits with an HVAC technician (do not wait until something seems “broken”).
  - Consider using devices such as CO₂ sensors to see if your ventilation systems/practices are working.
- Test and balance ducted HVAC systems at least every three to five years, or any time systems are not functioning well (contact a licensed HVAC company for this).
- Re-commission ducted HVAC systems at least every five to ten years, or any time systems are not functioning well (contact a licensed HVAC company for this).

Learn more

YouTube video series by University of California Davis:

- Recorded Webinar “The Path to COVID 19 Recovery: How to Improve Indoor Air Quality when Reopening K-12 Schools” (60 minutes): https://www.youtube.com/watch?v=cIfE3VI-gMg
- “The Importance of Ventilation in Schools” (Six minutes): https://www.youtube.com/watch?v=F9hB9BgoHs
- “The Importance of Filtration in Schools” (Eight minutes): https://www.youtube.com/watch?v=ycgLBUfIM_c

Guidance Documents specific to schools


Reach out to the CDPHE COVID Industry team
For questions about ventilation in indoor settings and COVID-19 risk, email us at: cdphe_cdb_covidindustryteam@state.co.us.

Resources linked in text


2. Information on HVAC Filters and MERV Ratings:
   [https://www.ashrae.org/technical-resources/filtration-and-disinfection-faq](https://www.ashrae.org/technical-resources/filtration-and-disinfection-faq)


4. Using UVGI Technology in Schools:

5. Bipolar Ionization Information from UC Berkeley:

6. Use of CO₂ Sensors and COVID:
   [https://ncceh.ca/content/blog/can-co2-sensors-be-used-assess-covid-19-transmission-risk](https://ncceh.ca/content/blog/can-co2-sensors-be-used-assess-covid-19-transmission-risk)