

Portable Air Cleaners in Classrooms



Portable air cleaners, sometimes referred to as air purifiers, are standalone units that work independently from a school's heating, ventilation, and air conditioning (HVAC) system. Portable air cleaners should be used to supplement the HVAC system filtration and are best paired with other actions that improve indoor air quality, including source control and ventilation.

Portable air cleaners can improve classroom air circulation and reduce air pollutants like dust, pollen, mold, odors, smoke, chemicals, gases, viruses and more. These indoor air pollutants can negatively impact the health of students and teachers, as well as reduce concentration, academic performance, and test scores.

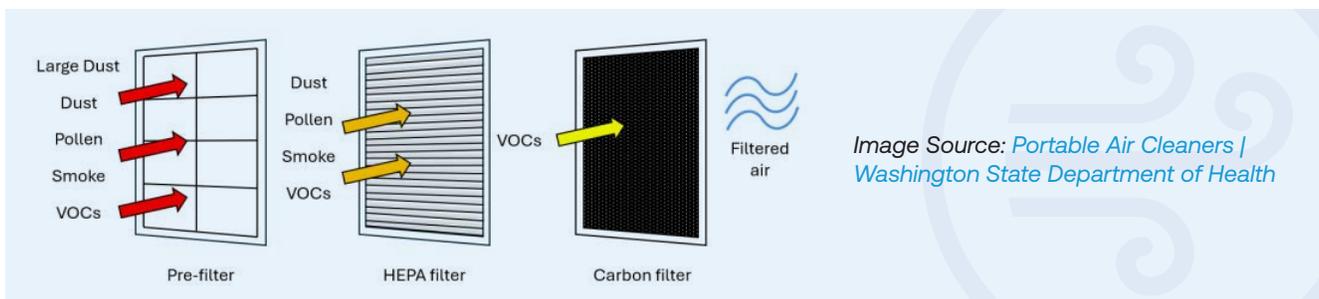
Selecting Portable Air Cleaners for Classrooms

✓ Know the Size You Need

- Air cleaners are most effective in single rooms or spaces. They are designed to clean different sized rooms, so knowing the square footage of the classroom where it will be used is crucial.
- Select a model that has a clean air delivery rate (CADR) that is large enough for your classroom. Air cleaner packaging will list the largest size room in which it can be used.

✓ Filter Type, Life, and Cost

- Ensure the filter is a High Efficiency Particulate Air (HEPA) filter which can remove at least 99.97% of particles in the air.
- Choose an air cleaner with a pre-filter that captures larger particles. This pre-filter may need cleaning (with the hose end of a vacuum) or replacement more often than the main HEPA filter.
- Select an air cleaner that includes activated charcoal which can remove volatile organic compounds (VOCs)/chemicals from the air.
- Consider the life and cost of the filter. Many air filters last between 6 months to a year, depending on the quality of the filter, the level of air pollution in the room, and how often the air cleaner is used. Some air cleaners have built-in indicators to alert when it is time to replace the filter.



✓ Noise Level

- Check manufacturer’s data for noise levels and select a model that meets the recommended 35-50 dBA for classrooms.
- Some models have a “quiet mode.”

✓ Certifications and Warranties

- Warranties are important to consider because they will ensure the device works properly for a specific amount of time and will likely be replaced if there is an issue.
- **Select an air cleaner that has been certified by:**
 1. The [Association of Home Appliance Manufacturers \(AHAM\)](#) certification program verifies a manufacturer’s CADR for dust, pollen, and tobacco smoke. CADR is a system to rate air cleaner performance. AHAM’s certification also verifies energy usage for models that are part of the ENERGY STAR program.
 2. The [California Air Resources Board \(CARB\)](#) certifies air cleaners that are safe and do not produce dangerous levels of ozone (a lung irritant).
 3. The [Asthma & Allergy Friendly](#) certification program identifies cleaners that are effective at reducing allergens.

✓ Other Tips

- Avoid models with ionizers, foggers, and electrostatic sprayers. Ionizers create ozone, a known lung tissue irritant.
- DIY air cleaners can be built using box fans and HEPA furnace filters.

Placing and Using Portable Air Cleaners in Classrooms

- Place the air cleaner as centrally in the classroom as possible without it being a distraction to students or creating a disruptive learning environment. Students should be able to hear and see the teacher. If it cannot be central, the unit should be at least a few feet away from walls.
- Ensure the air cleaner’s air inlet and outlet are not blocked and there is at least a foot of space on all sides of the air cleaner.
- Ensure the air cleaner is at least 3 feet away from open windows or doors to avoid filtering outside air.
- Run the air cleaner with all doors and windows closed for maximum efficiency.
- Use a cable cover to prevent tripping over the cord.



Learn more about clean air at schools
at [Lung.org/CASC](https://www.lung.org/CASC).



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