

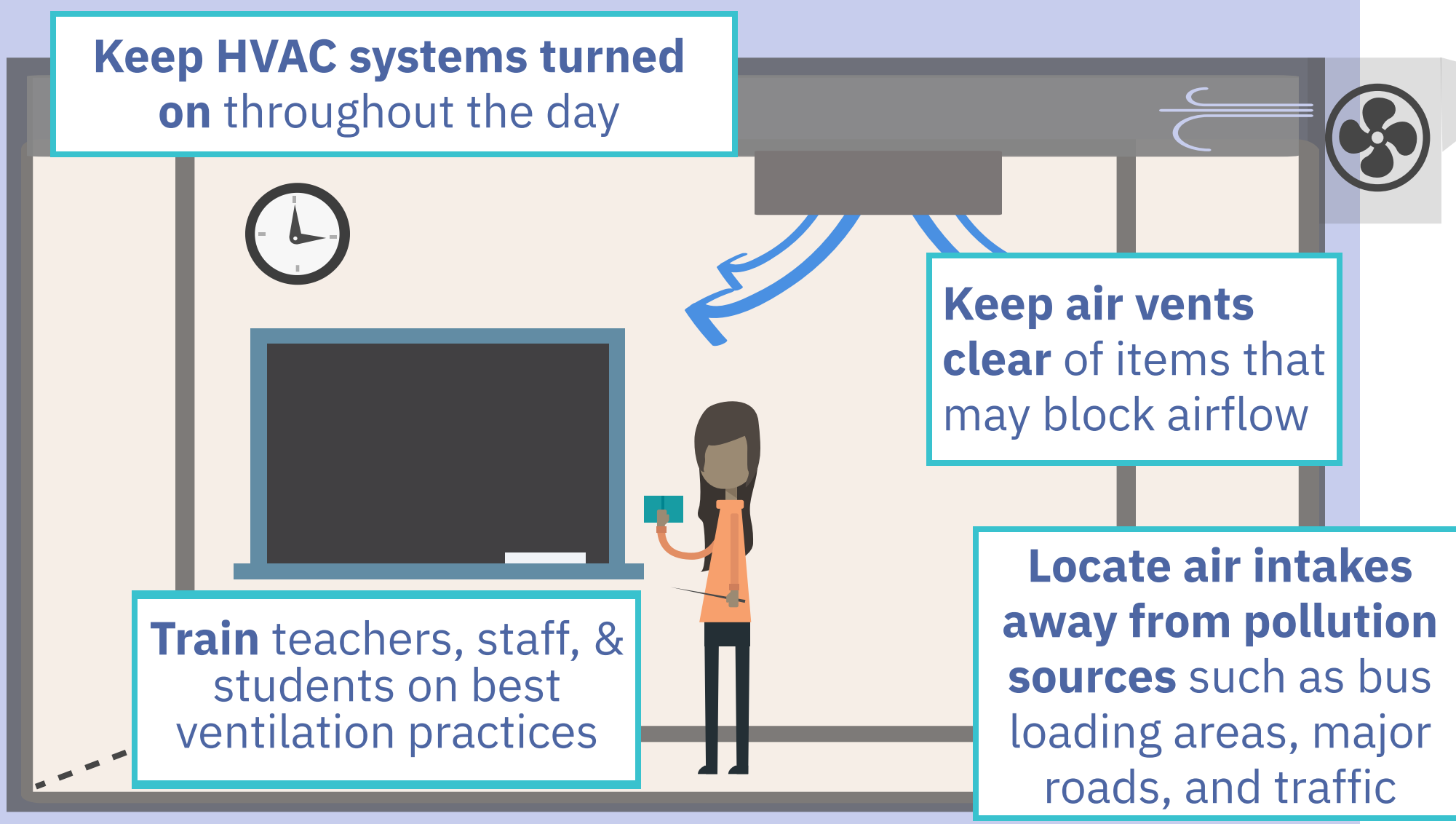
Best Practices for Reducing Near-Road Pollution Exposure at Schools: Summary

Below is a summary of the recommendations outlined in Best Practices for Reducing Near-Road Pollution Exposure at Schools (EPA-420-R-21-022).

This document is intended for school administrators, facility managers, school staff, school nurses, school-based health centers, parents, students, and others in the school community who are concerned about traffic-related air pollution exposure due to a school's proximity to a heavily traveled roadway or trucking corridors.

Mechanical Ventilation & Filtration

Use high-efficiency filters to reduce particle pollution exposure inside classrooms



- Upgrade filtration system to the **highest MERV-rated filters** the HVAC system can handle
- Consider HVAC system **upgrades** to accommodate high-efficiency filters
- Consider installation of “**pre-filters**” upstream of the main filter
- Keep windows and doors closed** to avoid bringing in polluted outdoor air
- Perform **regular** inspection and maintenance
- Seal the building envelope** (windows and doors)

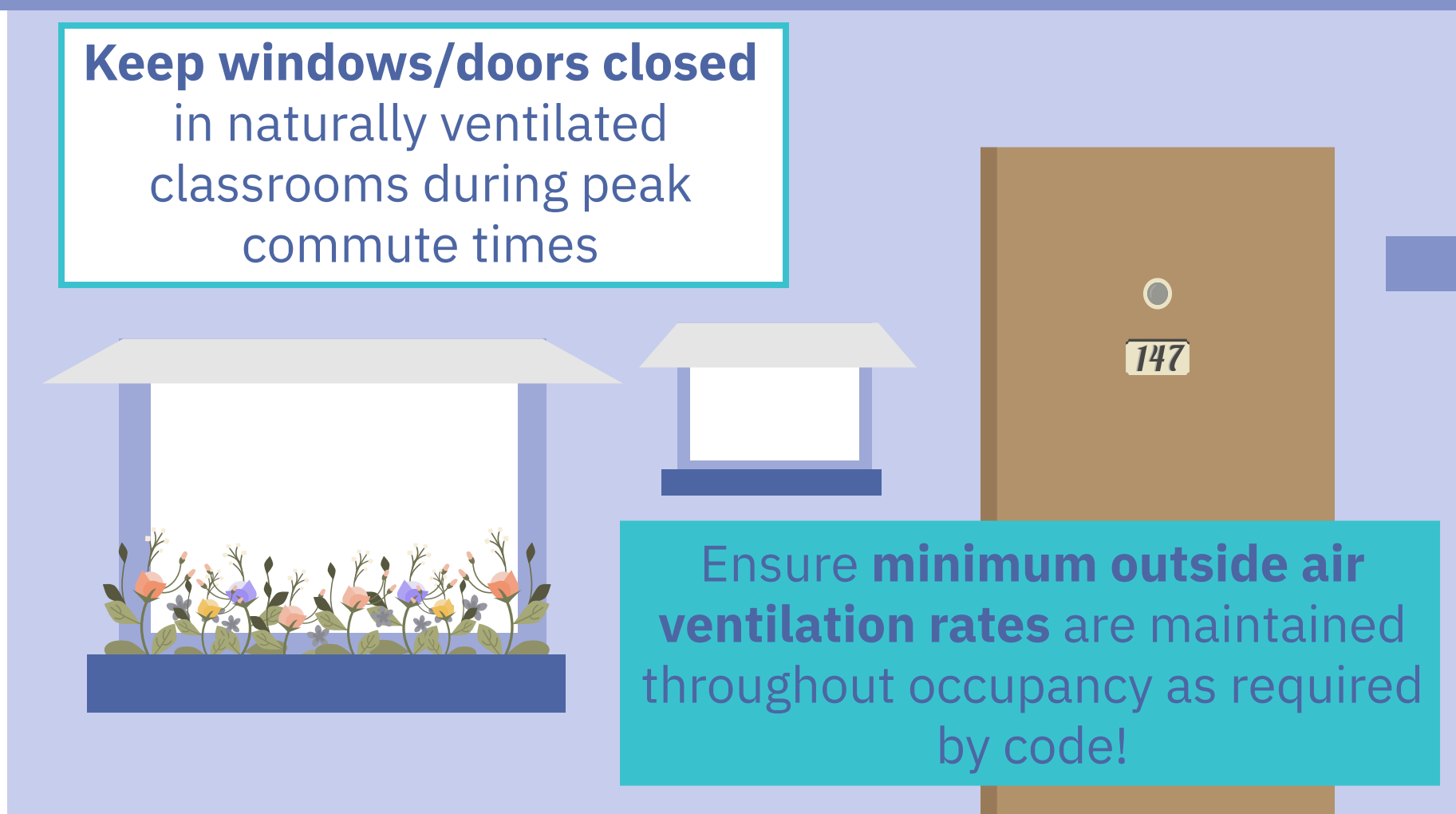
For classrooms relying on passive/natural ventilation, **use quiet, portable, stand-alone filtration systems** to reduce indoor concentrations

- Minimize indoor sources of air pollution** such as
- Combustion sources
 - Gas space heaters
 - Wood stoves
 - Air fresheners
 - High pollen-producing plants

Opt for low-VOC interior finished, furniture, and paints

Passive & Natural Ventilation

Train teachers, staff, and students on best ventilation practices



Actions for Building Occupants

 Plan strenuous outdoor activities during times with lower amounts of traffic

 Keep windows/doors closed in naturally ventilated classrooms during peak commute times

 Understand the importance of indoor pollutant sources and how to reduce emissions from indoor sources

 Consider how school buildings are used on weekends that may require changes to HVAC operation
This may include:

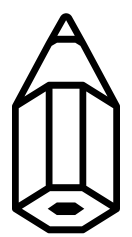
- Sporting events in athletic facilities
- Adult extension education
- Classes taking place on weekends

 Keep HVAC systems turned on throughout the day, with doors and windows closed*

 Keep air vents clear of items that may block airflow

* Local, school, and health department recommendations regarding outside ventilation due to pandemic conditions should be adhered to

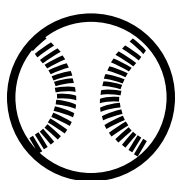
Site Location and Design



For new school developments, consider locations farther from major roads and other areas with heavy truck traffic, **but still within the community**



Consider **unintended consequences** of any location, such as increased commute distances and decreased opportunity for walking and biking



Locate **playgrounds, athletic fields, and classrooms** as far as possible from the roadway, or other areas with heavy truck traffic



Locate **bus and passenger vehicle loading zones** away from classrooms, play areas, and building air intakes



Carefully consider the placement of **portable classrooms**

Transportation Policies



Limit school bus idling by instituting **anti-idling or idle reduction policies**, and ensure no idling by windows, doors, or air intakes



Upgrade school bus fleets by:

Retrofitting buses with PM filters or oxidation catalysts

Replacing older buses with newer models



Consider **alternative bus fuels**, including biodiesel blends, liquified petroleum, compressed or liquid natural gas, or electric



Discuss funding opportunities for bus fleet upgrades with your **local or state environmental or air quality agency**



Provide walking/ biking paths to promote active transportation and reduce the number of vehicles near school

Roadside Barriers

For vegetative barriers, use an **evergreen species with mature, dense greenery**, consider **vegetation height and density**, and locate the barrier **downwind and close to the roadway**

Choose species appropriate for region and site by consulting with plant nurseries, local cooperative extensions, city governments, and the U.S. Forest Service

Minimize gaps in solid and vegetative roadside barriers

Use a **solid roadside barrier and/or vegetation of appropriate height** to block traffic-related pollutants

Ensure vegetation is **properly maintained** to ensure no gaps form

For more information on these topics, visit the **Best Practices for Reducing Near-Road Pollution Exposure at Schools** publication:

<https://www.epa.gov/mobile-source-pollution/how-mobile-source-pollution-affects-your-health#best-practices-for-schools>