



SCHOOL INDOOR AIR QUALITY

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SBOH IAQ Panel 1.10.2024

Washington State Department of Health School Environmental Health & Safety Program

Our Mission

To protect and improve the
Environmental Health and Safety
condition of schools in Washington state.



School Environmental Health & Safety

- **Animals**
- **Control of Communicable & Zoonotic Diseases**
 - Disinfection and Green Cleaning
- **Hazardous Chemicals**
 - Arts, Science Labs, CTE
- **Indoor Air Quality**
 - Asthma, Mold, Ventilation, Filtration
- **Injury Prevention**
 - Athletics, Playgrounds, Fall Protection
- **Integrated Pest Management**
- **Lighting**
- **Noise**
- **Thermal Comfort**



DOH School Environmental Health & Safety Program

Provide technical support & training

- Local Health Jurisdictions (LHJs)
- Schools

Authority

- RCW 43.20.050(2)(c) Adopt rules controlling public health related to environmental conditions **including but not limited to heating, lighting, ventilation, sanitary facilities, cleanliness and space in all types of public facilities including but not limited to** food service establishments, **schools**, institutions, ...
- State Board of Health [Chapter 246-366 WAC:](#)
[Chapter 246-366A WAC:](#)
- DOH / OSPI K12 Health & Safety Guide
2000, 2003 – current edition. Being updated this year.

Air Quality - Health



[Environmental Factor - May 2021: Indoor air a neglected source of chemical, particulate exposures \(nih.gov\)](#)

History – School IAQ in WA

- Work began in earnest in the 1990's
 - DOH EPH hired an IAQ Specialist
- EPA Tools for Schools – annual meetings in DC, toolbox
- Collaborative work/inspections with DOH
 - WSU Energy Support Operations building scientist, NW Clean Air Agency, NEW Educational Service District 101, Puget Sound Workers' Comp Trust
- Statewide School EHS meetings in 2001, 2002, 2003
- Statewide School IAQ workgroup
- DOH IAQ Best Practices Manual 2003
- CDC Asthma Grant
- Continual collaborative production of resources, workshops, training videos

IAQ Work in Schools

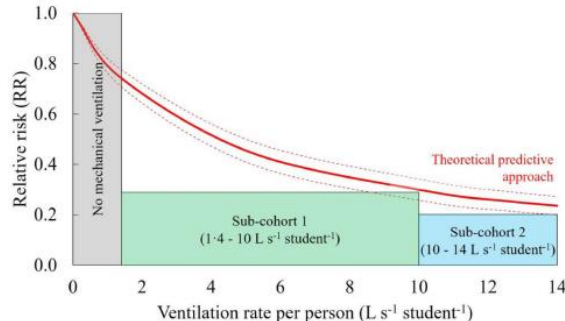
- Reduce Asthma triggers and Allergens
 - Eliminate scented sprays/plug-ins/candles
- Safe & effective cleaning and disinfection
- Prevent mold growth/remove safely
- Reduce animals in schools
- Integrated Pest Management
 - Reduce use of pesticides
 - Prevent pests – lice, bed bugs, roaches, etc.
- Targeted exhaust ventilation for contaminants
 - Science, arts, career and technical education
 - Pottery kilns, 3-D printers, Laser printers, Lead soldering
- Improve ventilation and filtration

Where Are We Now

- The pandemic taught us the importance of ventilation.
 - Infectious viral particles are carried in air streams.
- The pandemic reinforced the need for improvement.

Italian schools study

- 10,000+ classrooms
- 316 retrofitted with mechanical ventilation
- Covid infection rates 80% lower in mechanically ventilated classrooms with 10 – 14 L/s-pers
- 12-15% reduction per unit of ventilation



Increasing ventilation reduces SARS-CoV-2 airborne transmission in schools: a retrospective cohort study in Italy's Marche region

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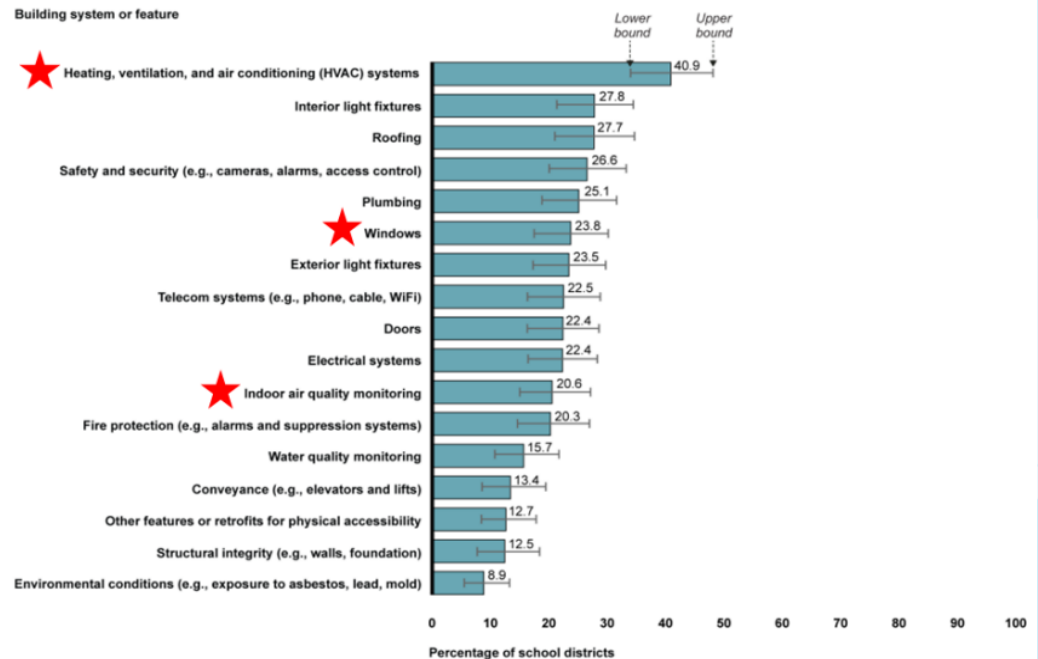
Preprint - <https://arxiv.org/abs/2207.02678>

What We Have Learned

School Maintenance Was A Problem Before COVID

- ▶ General Accountability Office study on condition of US schools (June 2020)
- ▶ Maintenance or replacement needs
 - ▶ HVAC - #1
 - ▶ Windows - #6
 - ▶ IAQ monitoring #11
- ▶ Poor maintenance impacts IAQ and energy use, increases infection risk

Figure 2: Estimated Percentage of School Districts in Which at Least Half the Schools Need Updates or Replacements of Key Building Systems or Features



<https://www.gao.gov/assets/710/707374.pdf>

Ventilation Standards

Dilution – **Minimum** Standards for Schools

- ASHRAE 62.1
 - ~15 cfm/person of air
 - ~17 cfm/person of air for science labs (directly exhausted, but supply can be recirculated from non-lab/shop areas)
 - ~19 cfm/person of air for art and wood/metal shops (directly exhausted, but supply can be recirculated from non-lab/shop areas)
- World Health Organization: 21 cfm/person
- SBOH School Rule WAC 246-366-080 Ventilation
 - All rooms used by students or staff shall be kept reasonably free of all objectionable odor, excessive heat or condensation.
 - All sources producing air contaminants of public health importance shall be controlled by the provision and maintenance of local mechanical exhaust ventilation systems as approved by the health officer.

Ventilation Guidance

Dilution

Improving Dilution in Building with Central HVAC System

- Have HVAC System Inspected and Balanced
 - Frequently identified problems:
 - Outside air dampers were not working correctly
 - Filters needed changing, or were not seated correctly
 - Building Automation System (BAS) was not operating correctly
 - Demand control system was not disabled
 - Heating/cooling coils were dirty/damaged
- System should deliver 5-6 air changes per hour
- Reduce recirculation of indoor air, maximize outdoor air

Ventilation Guidance

Filtration

- ASHRAE Filter Rating of MERV **13+** in HVAC unit
 - **Filter the return (infectious particle removal) and outside air (air pollution/wildfire smoke)**
 - Not just to protect the unit –
 - Deepest pleat possible – less resistance
 - Tight fit – NO LEAKS
 - Change as needed
- Additional
 - Vacuums with HEPA filters
 - Portable HEPA filter air purifiers in the nurse's office/isolation room (no additive technologies)
- [Wildfires and Indoor Air Quality in Schools and Commercial Buildings | Indoor Air Quality \(IAQ\) | US EPA](#)

Thank You

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Resources available:
www.doh.wa.gov/schoolenvironment
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resources





What's Happening Now

[Children and Youth Activity Guide for Air Quality](#)
[FAQ for Children and Youth Activity Guide for Air Quality](#)

[Quality](#)

[COVID-19 Testing in Schools](#)

[Healthy Youth Survey Registration](#)

[Register Now - November 7 School](#)

[Environmental Health and Safety Workshop](#)

[\(PDF\)](#)

[School Workshop Agenda \(Word\)](#)

Key Resources

[Immunization](#)

[COVID-19 Guidance K-12 & Child Care](#)

[Mental and Behavioral Health](#)

Resources by Topic



[Enhance Safe and Healthy Environments](#)



[Promote Healthy Behaviors](#)



[Manage Health Conditions](#)



[Prevent Injury and Violence](#)



[Promote Healthy Decision Making](#)



[Additional Resources](#)

Enhance Safe and Healthy Environments

[Expand all](#)

Air Quality



Animals and Pest Management



Infection Prevention, Cleaning, and Disinfecting



Career and Tech Ed, Arts, and Science



Contaminants



Facility and Construction



Playgrounds and Playfields



Rules and Regulations



Student Health and Safety



- [School Environmental Health and Safety Workshops](#)
- [Subscribe to Email Updates on School Environmental Health and Safety Information](#)
- [Program and Contact Information for School and Environmental Health and Safety Program](#)

Healthy Air Quality in Schools - Tips for Administrators, Custodians, and Teachers

Healthy Air Quality in Schools



Achieving healthy air quality in schools takes administrators, custodians, and teachers working together. Good ventilation and source control of pollutants means healthy indoor air quality.

General Tips

- Teachers and staff need to know who to contact for indoor air quality concerns in the school.
- There should be a written school or district indoor environmental quality plan that includes indoor air quality and integrated pest management.
- Notify school or district indoor air quality contact or maintenance staff if you detect odors or dust from locations such as shops, copy rooms, science labs, laminators, locker rooms, graphic arts, custodial supply rooms, storage areas, combustion equipment, kitchens, or bus exhaust. Document your concerns.
- Immediately report any water leaks, water stains, damp materials, or unusual odors (such as musty or moldy smells) to maintenance staff.
- Maintenance staff should respond to water leaks and moisture problems within 24 hours.
- Relative humidity levels between 30 and 50 percent are better for health. Low relative humidity leads to dry eyes and respiratory irritation. High relative humidity allows dust mites to grow and promotes condensation.
- Dispose of food wastes promptly in covered containers.

Ventilation

- Operate the ventilation system continually when the school is in use, including during custodial work. Supply at least 15 cubic feet per minute per person of fresh outside air whenever the school is in use. See [WSU Energy Program's Good Ventilation is Essential for a Healthy and Efficient Building \(PDF\)](#). (www.energy.wsu.edu/Portals/0/Documents/Good_Ventilation_is_Essential.pdf).
- An occupied room is considered to be receiving the minimum amount of fresh air when indoor carbon dioxide (CO₂) levels are approximately 700 parts per million (ppm) over outside ambient CO₂ levels. See [WSU Energy Program's Measuring Carbon Dioxide Inside Buildings \(PDF\)](#). (www.energy.wsu.edu/Portals/0/Documents/Measuring_CO2_Inside_Buildings-Jan2013.pdf).
- Maintain three feet of clearance around unit ventilators and do not put items on top of them to block airflow.
- Change ventilation filters regularly. Use the highest rated, deepest pleat filters the system can accommodate.
- Check to make sure that supply air diffusers, exhaust, and return grills are not blocked. They should be clean and dry.
- Don't turn off unit ventilators – ask maintenance staff to repair noisy units, control temperatures, and control drafts.
- Monitor windows – they should not show condensation except on the very coldest of days.
- Don't allow vehicle idling on school property.
- Maintenance staff should follow integrated pest management strategies. Don't use pesticides in the building.

Control Asthma Triggers

Reduce Animal Allergens, including Dust Mites

- Animals shouldn't be classroom residents and should only come to school for educational purposes.
- Use integrated pest management practices to prevent cockroach and rodent infestations.
- Store food in tightly sealed containers.
- Seal all cracks and crevices.
- Grate all foundation and roof ventilation.
- Use barriers to discourage birds roosting.
- Wash stuffed animals and blankets in hot water every two weeks, or remove them.

Control Dust

- All outside doors should have large entry mat barriers (walk-off mats) outside and just inside the door. The mats should provide at least four to seven footfalls.
- Maintain cleanable surfaces and avoid clutter. Put loose items into plastic boxes with lids that can be wet-wiped.
- Damp-wipe surfaces weekly with a micro-fiber cloth.
- Don't hang items from the ceiling T-bars without special clips to prevent fraying fiberglass. Remove or clean items when dusty.
- Discourage clutter by removing as many unnecessary dust-collecting items as possible.
- Use pre-mixed and pre-wetted clay art supplies whenever possible to reduce dusts.
- Replace fabric upholstered furniture with furniture easily dusted.
- Remove area rugs that cannot be regularly cleaned and that trap dirt and moisture.

Reduce Chemicals

- Don't use permanent, solvent-based or scented pens, markers, and board cleaners. Use water-based, unscented, crayon-based, or low-odor items.
- Don't use room deodorizing sprays, plug-ins, scented candle warmers, scented reeds, candles, incense, therapeutic oils, or potpourris.
- Don't use urinal cakes in bathrooms.
- Avoid spray adhesives, contact cement, and volatile paints. If spray adhesives are necessary, use hexane and toluene-free products. Wear solvent-resistant gloves. Spray in an area with local exhaust ventilation and away from children. See [King County's Selecting Safer Art Adhesives](#) (www.hazwastehelp.org/publications/publications_detail.aspx?DocID=z%2F7o%2f2BLUUM%3d).
- Don't bring chemicals, cleaners, or disinfectants from home. Use only those provided by the school or district.
- Never use air-cleaning devices that generate ozone. Ozone is a respiratory irritant.
- Discourage the use of perfumes, colognes, body sprays and other strongly scented personal care products.
- Hazardous chemicals in laboratories, chemical storages, shops, art rooms, and any other areas need to be properly stored and managed to prevent air contamination.

Carpet Care

- Whenever possible, don't allow food or beverages in classrooms. If possible, vacuum daily (when children are not present). Use a vacuum with a HEPA (high efficiency particulate air) filter – or use HEPA vacuum bags. Having both is even better.
- Avoid use of area rugs. They can trap moisture and dirt under them. Clean carpets thoroughly with truck-mounted hot water and steam extraction once or twice per year.
 - Spot treat carpet as needed first.
 - Use the minimum amount necessary of low-odor and low-sudsing carpet shampoo.
 - All shampoo and cleaner needs to be thoroughly extracted until the water runs clean.
 - Carpet should dry thoroughly within 24 to 48 hours after cleaning.

Resources

- [School Environmental Health and Safety, Department of Health](#) (www.doh.wa.gov/schoolenvironment)
- [School Indoor Air Quality Best Management Practices Manual, 2003 \(PDF\)](#) (www.doh.wa.gov/Documents/Pubs/333-044.pdf)
- [Integrated Pest Management for Schools, WSU](#) (<http://schoolipm.wsu.edu/>)
- [Creating Healthy Indoor Environments in Schools, EPA](#) (www.epa.gov/iaq/schools/index.html)
- [Taking Asthma Care To School, Washington Asthma Initiative \(PDF\)](#) (<http://waasthma.org/wp-content/uploads/2014/05/AMES2014Final.pdf>)
- [Art Hazards, King County Local Hazardous Waste Management Program](#) (<http://hazwastehelp.org/ChemToxPesticides/artchemicals.aspx>)

Cleaning for Health in the Classroom Best Practices for Teachers



School Environmental Health and Safety Program

School custodial staff is responsible for cleaning schools. Some teachers choose to do additional cleaning. Here is how to ensure those efforts tackle dirt and germs safely and effectively.

Teach good handwashing habits - the #1 way to keep germs from spreading.

Use plain soap and water for handwashing – before eating, after using the bathroom, after recess, etc. Antibacterial soap is not recommended. Use plain fragrance-free soap. When there is no access to a sink, as on a field trip, alcohol-based (at least 60% alcohol, dye-free and fragrance-free) hand sanitizer or alcohol-based sanitizer wipes can be used. Hand sanitizers are not a substitute for handwashing. They are not effective when hands are dirty or greasy.

Cleaning for Health benefits all

- Lowers absenteeism
- Increases productivity
- Improves indoor air quality
- Reduces asthma and allergy triggers

Good to know:

- Kids are more vulnerable to chemical exposures.
- Many common cleaning products have ingredients that can harm health, especially the lungs.

Know the difference between Cleaning, Sanitizing, and Disinfecting.

Use the right product for the task:

- **CLEANING** removes dirt and most germs. Use soap and water. A third party certified green cleaner is preferred. In the classroom, cleaning is the focus.
- **SANITIZING** reduces germs to safe levels, for example in food service environments. Food code regulations have specific requirements for sanitizers in the cafeteria and kitchen.
- **DISINFECTING** kills most germs, depending on the type of chemical, and only when used as directed on the label.
- In schools, custodial staff use disinfectants and sanitizers regularly only in high-risk areas – nurse’s office, bathrooms, cafeterias, kitchens, drinking fountains, sink and door handles, and athletic facilities; preferably, when students are not present. Overuse does not provide any additional protection and can expose students and staff to harmful chemicals.

Teachers can rely on basic *cleaning* to remove dirt and germs in the classroom.

If staff, besides trained custodial staff, needs to assist with classroom cleaning, they should use a school or district provided basic cleaner. A third party certified green cleaner is preferred.

- Custodial staff can make a simple all-purpose cleaner for classrooms. Mix one teaspoon of fragrance-free dish soap in a spray bottle filled with water. Spray on surface and scrub with paper towels or a microfiber cloth. Rinse and wipe dry to remove any residue.
- Microfiber cleaning cloths improve cleaning – the removal of dirt and germs. Dampened with water they are great dust removers. With soap and water, they remove most germs.
- Disinfecting is the responsibility of school custodial staff. They are trained to use disinfectants in a safe and effective manner and to clean up potentially infectious materials and body fluid spills – blood, vomit, feces, and urine. Contact your custodian or school nurse if students are ill and your classroom needs cleaning and disinfection. If teachers use disinfectants, the district must provide training and supply the appropriate cleaner and sanitizer or disinfectant.

Students should never use disinfectants. Disinfectant wipes should not be used to clean hands. This includes Clorox wipes.

If students are helping:

- They should only use soap and water.
- Fragrance-free baby wipes could be used for quick cleaning.
- Most store-bought cleaning products are not safe for children to use.

Cleaning for Health in the Classroom Frequently Asked Questions



School and Indoor Air Quality Program

How does cleaning reduce germs?

Cleaning works by removing dirt and organic matter that contains and protects germs. Soap breaks down oils and allows dirt, contaminants, and germs to be more easily removed. Cleaning with soap, water, and a microfiber cloth will remove most germs.

Why is handwashing better than hand sanitizer?

Soap and rubbing hands together under running water removes oil, dirt, and harmful surface germs. Hand sanitizer does not remove dirt in which germs hide and only kills a few easy-to-kill ones.

Why use plain soap for handwashing?

Antibacterial ingredients, in particular triclosan and quaternary ammonia compounds (quats), only kill a few types of germs and are unnecessary when washing hands. It doesn’t matter if germs are alive or dead when they are washed down the drain.

What about non-alcohol hand sanitizers?

The U.S. Centers for Disease Control and Prevention only recommends hand sanitizers with at least 60% alcohol. Non-alcohol ones are even less effective than alcohol hand sanitizers.

How does this guidance affect fall classroom supply request lists?

Okay to Request

- Fragrance-free baby wipes.
- Paper towels (recycled content preferred).

DO NOT Request

- Disinfecting wipes.
- Non-alcohol-based hand sanitizer.

What are the issues with disinfecting wipes?

- Disinfecting wipes are often overused. They are not appropriate for general cleaning when an all-purpose cleaner or soap and water would suffice.
- Disinfecting wipes (e.g. Clorox, Lysol) usually contain quats and fragrance chemicals. These ingredients can trigger asthma and are associated with adverse health effects.
- Disinfectants can give a false sense of security because when they are not used exactly to label instructions, they don’t work properly. Most disinfecting wipes require the surface to be cleaned first, and then remain visibly wet 4-10 minutes (dwell time) to be effective, requiring multiple wipes.

Why is it important to use fragrance-free products in school?

Fragrance is one of the most frequently identified allergens, can irritate the respiratory system, cause headaches, and exacerbate asthma.

What’s so great about microfiber cloths?

Their split fibers create more surface area and are superior for removing dust, dirt, and germs. They are reusable and can be laundered or washed by hand.

Why should teachers not bring common cleaning products (including bleach) from home into the classroom?

- Some common cleaning products are dangerous when mixed. Never mix bleach with ammonia, acids, or other disinfectants. An example: Comet, containing bleach, would react with Windex, which contains ammonia, to form poisonous vapors.
- Common household cleaners and disinfectants may not be appropriate for schools and may cause allergic reactions or have other health impacts.
- Schools and districts must have a Safety Data Sheet for each chemical used in the school.

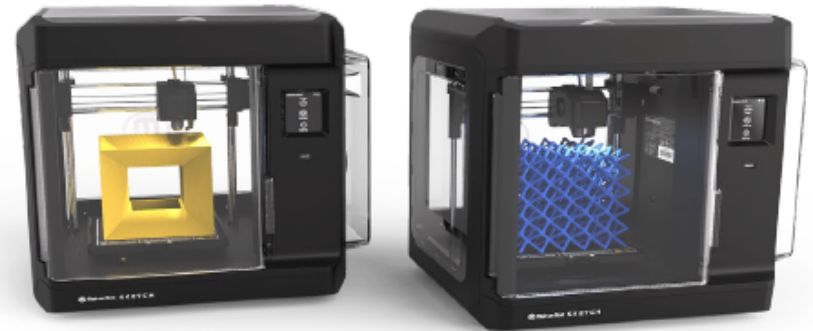
Using 3D Printers Safely



Three dimensional (3D) printers are a great education tool. They provide rapid prototyping and the ability to create small-scale manufacturing for various lessons in science, technology, engineering, math, and art. Although a great educational tool, 3D printers produce hazardous byproducts including fine and ultra-fine particulates, volatile organic compounds, and heavy metals.

When using 3D printers, required safety precautions protect students from inhaling hazardous particles and chemical vapors and avoid physical hazards such as burns, cuts, and pinches. The State Board of Health Rule for Primary and Secondary Schools, [WAC 246-366-080](#), requires 3D printers to have local mechanical exhaust ventilation.

A recent National Institute of Safety and Health (NIOSH) study evaluated the hazards associated with using different 3D printers and recommended ways to minimize exposure to these hazards. This document focuses on the safe use of fused filament fabrication (FFF) 3D printers (functionally similar to fused deposition modeling, or FDM printers), which are most common in K–12 schools.



Two examples of FFF 3D printers.

[Using 3D Printers Safely \(wa.gov\)](#)



Healthy Air for Healthy Schools

Use Only:

- Approved chemicals, cleaners, or disinfectants provided by the school or district. Never bring in products from home.
- Fragrance-free soap and water or fragrance-free baby wipes to clean surfaces. Disinfection is for trained custodians with approved effective products.
- Pens, markers, and board cleaners that are water-based, unscented, crayon, or low-odor.
- Spray paints and spray glues where there is mechanical exhaust ventilation.

Avoid Products That Reduce Air Quality — Do Not Use:

- Room deodorizing sprays, plug-ins, scented candle warmers, scented reeds, candles, incense, essential oils, or potpourris.
- Air-cleaning devices that generate ozone or are called "ionizers" – ozone is a respiratory irritant.
- Perfumes, colognes, body sprays and other strongly scented personal care products.
- Permanent, solvent-based, or scented pens, markers, and board cleaners.
- Disinfectant wipes.
- Urinal cakes.
- Rubber cement or spray adhesives with hexane or toluene.



Using classroom products that are free of airborne irritants means healthy indoor air quality!

- > Eliminate unnecessary chemicals.
- > Reduce asthma and headaches.
- > Increase attendance and performance!

Learn more at www.doh.wa.gov/schoolenvironment



DOH 333-243 August 2019

For people with disabilities, this document is available on request in other formats.

Call 1-800-525-0127 (TDD/TTY call 711).

Essential Oils

Guidance for Healthy Classrooms



Are Essential Oils Beneficial?

Many people use essential oils as aromatherapy with the intent to treat various health conditions like pain, anxiety, asthma, and ADHD. However, systematic reviews of essential oils research have not found enough evidence to suggest they successfully treat any health issue (8).

Are Essential Oils Safe to Use?

Essential oils can adversely affect the health and safety of students and staff in the classroom and can be dangerous. They contain compounds that can aggravate asthma in students; and they emit hazardous volatile organic compounds such as acetaldehyde, limonene, toluene, pinene, and camphene, all of which worsen asthma (9; 10; 1; 6; 3). They also can cause respiratory irritation, headaches and throat, eye, and nose irritation. Inhaling certain essential oils can cause pneumonia (6; 3).

Keeping essential oils in the classroom can be dangerous. When swallowed, eucalyptus, sage, and camphor oil can cause seizures, and lavender oil can cause a coma (12). Additionally, lavender oil and tea tree oil were shown to cause abnormal or premature breast development in girls and boys when applied to the skin or inhaled (5; 11).



Recommendations

Avoid using all essential oils and other fragranced products in the classroom. Use fresh air and good ventilation to reduce exposure to respiratory pathogens, chemicals, and odors. Increased fresh air supply and air filtration have been shown to improve health and test scores. Open windows for additional air or use fans pointed out of windows and doors to improve ventilation, being careful not to circulate across students.

Some schools, school districts, or early learning programs have established policies or procedures that may prohibit essential oils. Schools and districts should adopt a policy or procedure prohibiting staff from bringing in and using any chemicals that are not pre-approved or provided by the district. Always consult with your school, program, or school district to ensure compliance with their policies/procedures.

References

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How to Avoid Allergies

Essential oils can cause allergic reactions when applied to the skin. This table (adapted from (2)) contains examples of essential oils that have caused allergic contact dermatitis (allergy). All essential oils should be avoided for a healthy classroom environment.

Angelica	Cassia	Elemi	Juniper berry	Neem	Rosemary	Tangerine
Aniseed	Cedarwood	Eucalyptus	Laurel leaf	Neroli	Rose	Tea tree
Bay	Chamomile	Frankincense	Lavandin	Niaouli	Rosewood	Thuja
Bergamot	Cinnamon	Galbanum resin	Lavender	Nutmeg	Sage	Thyme
Black cumin	Citronella	Geranium	Lemongrass	Orange	Sandalwood	Turpentine
Black pepper	Clary sage	Ginger	Lemon	Palmarosa	Silver fir	Valerian
Cajeput	Clove	Grapefruit	Litsea cubeba	Patchouli	Spearmint	Vetiver
Calamus	Coriander fruit	Guaiacwood	Lovage	Peppermint	Spike lavender	Ylang ylang
Cananga	Costus root	Hinoki	Mandarin	Petitgrain bigarade	Star anise	Zdravetz
Cardamom	Cypress	Hyssop	Melissa	Pine needle	Sweet basil	
Carrot seed	Dwarf pine	Jasmine absolute	Myrrh	Ravensara	Sweet marjoram	

DOH 333-307 October 2022

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Thank you for joining us in February for our webinar: [*A National Conversation on Indoor Air & K-12 Schools During the COVID-19 Pandemic.*](#)

Today, the Johns Hopkins Center for Health Security at the Bloomberg School of Public Health released a new report calling on kindergarten through 12th grade (K-12) school administrators to urgently invest in ways to provide healthy air in schools to increase safety during the COVID-19 pandemic and potential future respiratory disease outbreaks, as well as to improve student learning.



[Tips to Improve Indoor Ventilation in K-12 Schools to Help Reduce COVID-19 Transmission \(centerforhealthsecurity.org\)](#)

The new report, [*School Ventilation: A Vital Tool to Reduce COVID-19 Spread*](#), reviews how improvements in building ventilation can reduce the risks of disease transmission. The report also summarizes current ventilation guidelines for K-12 schools and shares the results of an analysis finding that ventilation improvements are a cost-effective public health measure compared to enhanced (“deep”) cleaning that focuses on surfaces.

Schools For Health – How School Buildings Influence Student Health, Thinking and Performance



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How School Buildings Influence Student Health, Thinking and Performance



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New Video Released

Watch our 8 Minute Video on the Importance of
Filtration in Schools



[The Importance of Filtration In Schools - YouTube](#)

[Importance of Ventilation in Schools - YouTube](#)

Children spend a large portion of their day indoors at school. Ensuring adequate filtration and ventilation in classrooms is essential and will help support the health and productivity of students and teachers.