

Pollution Prevention for K-12 Schools

Pollution prevention (P2) is any activity that reduces or eliminates waste at the source. Areas can include expired material, air emissions, water, energy and hazardous waste. Instead of managing the waste after it has been created by recycling, treatment or disposal, P2 prevents the generation of waste in the first place. This informational fact sheet will provide you with simple tips to reduce waste at the source in your school.

Chemical Reduction — Less is Better!

Green Chemistry

- Reduce the surplus of chemicals by purchasing only what is necessary.
- Don't forget about stored chemicals! Keep an up to date inventory with dates of purchase to avoid expired material.
- Don't store incompatible chemicals together! See King County's [Rehab the Lab](#)¹ website to view lab safety videos.
- First in, First out: Use the oldest chemicals (acquired first) before you use the newest chemicals.
- Green your lesson plans! Redesign lab projects and lessons to reduce the use of chemicals or to use less toxic chemicals.
- See the American Chemical Society green chemistry educational resources for [students and educators](#)².
- If toxic chemicals must be used, consider lab projects and lesson plans in groups to reduce the use of chemicals.
- Develop a list of alternative products and chemicals that can be purchased and used.
- Limit access to chemicals to approved staff.
- Talk to your chemical supplier to see if they offer a take back program.



Check out EPA's [Safer Choice](#)³ website to find safer products for your school by browsing the full product listing.

Products with the Safer Choice label help consumers and commercial buyers identify products with safer chemical ingredients, without sacrificing quality or performance.

The [Safer Chemical List](#)⁴ is a list of chemical ingredients, arranged by functional-use class that the Safer Choice program has evaluated and determined to be safer than traditional chemical ingredients.

Energy Conservation

- Train maintenance workers to look for and plug holes and caulk windows to stop heat and cooling loss.
- See the [Heating, Ventilation and Air-Conditioning Systems, Part of Indoor Air Quality Design Tools for Schools](#)⁵ to maintain good indoor air quality through adequate HVAC maintenance and to train maintenance staff.
- Remind staff and students to turn off lights and electronics when not in use in classrooms and around the school.
- Consider installing occupancy sensors to automatically turn off lights in rooms that are commonly used.
- Measure and track energy usage; contact your local utility to conduct an energy audit. Use [Energy Star Portfolio Manager](#)⁶ to track energy and water use basis and check out the [Guide to Energy Efficiency Programs in K-12 Schools](#)⁷.
- Join the [Cool School Challenge](#)⁸ to engage students and teachers in practical strategies to reduce carbon dioxide emissions and other greenhouse gases school-wide.
- Do know how to conserve energy with the computers at school? See the Energy Star's instructions to [activate power management on your computer](#)⁹ for further information.

Water Conservation

- Use native landscaping to reduce water use. See ADEQ's [P2 with Xeriscape](#) Fact Sheet.
- Detect and repair leaks at school. Look for leaking toilets, faucets (in bathrooms, classrooms and kitchens) and for leaking hoses.
- Install flow reducing devices at your school like faucet aerators, on-off valves on hoses and low flow toilets.
- Check out EPA's [WaterSense®](#) website to find water-saving [products](#)¹⁰ that can help your school and the environment.
- Install water conservation signs in restrooms and classrooms.
- Determine the schools water use by monitoring meters and reviewing past and current water bills.
- Teach students about water conservation and to alert staff about water leaks.

Achieve P2 Through Education

- Teach staff and students about P2, source reduction and the many different pollution types and how it affects the environment (air, water, soil).
- Create or participate in an alternative transportation program and encourage parents and students to walk, bike, or ride a scooter to school.
⇒ See the [Safe Routes to School National Partnership](#)¹¹
- Encourage staff and students to carry their own reusable bottles to eliminate plastic bottle waste.
- Create a recycling program to reduce the amount of recyclable material that goes to the landfill. [Learn more about recycling programs in your community](#)¹²



Create Healthy Indoor Air Quality

Indoor air pollution can have a harmful impact on schools staff and students.

Healthy indoor air quality includes:

- Control of airborne pollutants;
- Introduction and distribution of adequate outdoor air; and
- Maintenance of acceptable temperature and relative humidity.

Through simple, low-cost actions, your school can improve air quality and:

- Save money
- Improve health
- Decrease student and staff absenteeism

Tools and Case Studies for Healthy Indoor Air Quality

- Get EPA's [Mobile Indoor Air Quality App](#)¹³ (IAQ). This app allows to choose a checklist and conduct assessments, track IAQ problems, generate a report and identify solutions to improve IAQ.
- Read successful [IAQ Tools for Schools Case Studies](#)¹⁴.

ADEQ's School Vehicle Idling Reduction Program¹⁵

Vehicle emissions at school occur from school buses, parent vehicles and delivery trucks. Reduce vehicle emissions by educating the school.

Start an idling reduction program at your school by:

- [Implementing a Compact Plan](#)
- [Implementing a Medium Plan](#)
- [Implementing a Full-Sized Plan](#)
- [Get and Recruit Sponsors](#)
- Review the [Checklist](#) Items

References

- ¹Hazardous Waste Management Program. King County, Washington. *Rehab the Lab*: <http://www.hazwastehelp.org/educators/rehabthelab.aspx>.
- ²American Chemical Society. Green Chemistry for Students and Educators: <https://www.acs.org/content/acs/en/greenchemistry/students-educators.html>.
- ³EPA. Safer Choice: <https://www.epa.gov/saferchoice>.
- ⁴EPA. Safer Chemical List: <https://www.epa.gov/saferchoice/safer-ingredients>.
- ⁵EPA. *Heating, Ventilation and Air-Conditioning (HVAC) Systems*: <https://www.epa.gov/iaq-schools/indoor-air-quality-design-tools-schools>.
- ⁶EPA. Energy Star Portfolio Manager: <https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager>.
- ⁷EPA. Energy Efficiency Programs in K-12 Schools: https://www.epa.gov/sites/production/files/2015-08/documents/k-12_guide.pdf.
- ⁸National Wildlife Federation. *Cool School Challenge*: <http://www.nwf.org/Eco-Schools-USA/About-Eco-Schools-USA/Take-Action/Cool-School-Challenge.aspx>.
- ⁹Energy Star. *Activate Power Management on Your Computer*: https://www.energystar.gov/products/low_carbon_it_campaign/power_management_computer.
- ¹⁰EPA. WaterSense. Products: <https://www.epa.gov/watersense/watersense-products>.
- ¹¹Safe Routes for School National Partnership: <http://www.saferoutespartnership.org/>.
- ¹²ADEQ. *Find Recycling in Your Community*: <http://www.azdeq.gov/node/381>.
- ¹³EPA. *School IAQ Assessment Mobile App*: <https://www.epa.gov/iaq-schools/school-iaq-assessment-mobile-app>.
- ¹⁴EPA. *Indoor Air Quality for Schools Case Studies*: <https://www.epa.gov/iaq-schools/indoor-air-quality-schools-case-studies>.
- ¹⁵ADEQ. School Vehicle Idling Reduction Program website: <http://www.azdeq.gov/node/637>.

Additional Resources

- EPA. *Sensible Guide for Healthier School Renovations*: <https://www.epa.gov/schools/sensible-guide-healthier-school-renovations>.
- EPA. *Chemical Management Resource Guide for School Administrators*: https://www.epa.gov/sites/production/files/2017-01/documents/chemical_management_resource_guide_school_administrators_508.pdf.
- Department of Energy (DOE). *Operating and Maintaining EnergySmart Schools: Web-Based Training* by DOE: <http://doe.cefp.org/>.
- Department of Energy. *National Best Practices Manual for Building High Performance Schools*: <https://www1.eere.energy.gov/>