

Step 2

Identify Green Cleaning Products

5 Steps to Green Cleaning in Schools

Healthy Green Schools & Colleges



healthygreenschools.org

A decade ago, green cleaning could be difficult and confusing. Products were less effective, more expensive and offered spurious claims without industry standards. Today's marketplace is different. There are plenty of affordable, accessible products and reliable third party certifications. This step is designed to take the guesswork out of evaluating products and help you identify those that meet high standards for effectiveness, health and safety.

What Are Green Cleaning Products?

Compared to traditional products, green cleaning products:

- Minimize health risks
- Reduce pollution
- Conserve resources

Minimizing Health Risks

Schools are making the connection that healthy students are better learners, and healthy staff work more effectively and miss fewer days. Children are especially vulnerable to chemicals because their behavior (such as sitting on the floor or chewing on objects) increases their exposure. Plus, their bodies are still developing. Janitorial staff who work closely with cleaning chemicals are also highly vulnerable to health risks associated with exposure.

An effective green cleaning program includes products that don't contain irritants and toxins linked to health risks. Traditional cleaning products have been shown to trigger asthma and other respiratory illnesses, and contribute to long-term health problems such as cancer, reproductive disorders, major organ damage, and permanent eye damage. Data from Washington State University show that about 6 percent of janitors experience a job-related injury from chemical exposure to cleaning products every year.

The good news is, many green cleaning products and technologies are being designed to limit or eliminate these health risks once and for all. By making building inhabitants healthier, green cleaning products can also be part of a strategy to boost attendance and productivity at school. And by selecting products that have third party certifications, product selection can be straightforward.

Reducing Pollution

When purchasing cleaning products, look at reducing the number of toxic chemicals that pollute indoor air and cause respiratory problems such as VOCs, solvents and aerosols.

Packaging is an important consideration. Purchase concentrates with minimal, recyclable packaging. Packaging is usually 100 percent waste and can add to the cost of your purchase. Here are some tips when selecting packaging:

- Make an effort to purchase concentrates rather than ready-to-use (RTU) formulas.
- Environmentally preferable plastics are those labeled with 1 or 2.
- Recycled plastics labeled with 4 or 5 are only partially recyclable.
- Avoid plastics labeled with 3, 6 and 7.
- Paper packaging should at a minimum meet the U.S. EPA's Comprehensive Procurement guidelines for boxes and cartons.
- Lightweight, flexible packaging uses significantly fewer materials than rigid plastics.

Green Seal, UL Environment and Safer Choice products all require sustainable packaging measures. These elements include packaging that is either recyclable or refillable and utilizes renewable energy during the production process. Also, toxic chemicals such as BPAs, heavy metals or phthalates must not be intentionally introduced into packaging production.

Conserving Resources

Natural resources are being used faster than they can be replaced. We are cutting down forests to make toilet paper faster than trees can be re-grown. We use petroleum (a non-renewable resource) to make trash can liners with no recycled content.

Sustainability means we do not hurt future generations' ability to use and enjoy the earth's natural resources.

Buying concentrated formulas with minimal packaging instead of ready-to-use (RTU) formulas can reduce the environmental impact of packaging materials, transportation, and disposal. In addition, concentrates can save money. The decision to use concentrates versus RTUs needs to be based on how your school will use the specific product. In some cases (particularly when a small school is purchasing a low-volume, infrequently used product), it may make more economic sense and produce less waste to use an RTU product.

Using portion control with concentrated products avoids waste, material damage and exposure to the concentrated chemical. Your choice of dispensing equipment (e.g., pre-measured packets, sachets, etc.) should be guided by the specific situation in your school. Every manufacturer of green cleaning products offers at least one type of dispensing option. It is very important for products to be used as directed by the manufacturer.

Also, for a product to be truly sustainable one must consider the lifecycle of a product, from the raw materials that create it all the way through its disposal. We can choose products based on health and environmental impacts throughout the product's lifecycle.

Raw Materials

Drilling for oil used for most chemicals and plastics and logging trees to create janitorial paper are just two of the most common—and most devastating—

environmental impacts that come from production of cleaning supplies. Even “natural” products made from agricultural sources such as oranges, corn and soybeans may have harmful impacts, depending on the farming operations used to grow them.

Transportation

Transportation affects the environment at several points in a product's lifecycle. It may be the oil tanker bringing crude oil to the refinery or shipping a truckload of chemicals from the manufacturer to the distributor to the end-user. Consider the differences between shipping concentrates versus shipping all the added water and packaging materials in ready-to-use (RTU) products.

Manufacturing

Environmental impact varies by type of product produced or raw material used. For example, using chlorine bleach (sodium hypochlorite) in the production of paper releases one of the most hazardous man-made compounds in existence: dioxin. Storing dangerous products can lead to spills, deadly chemical combinations (for example, ammonia combined with chlorine bleach creates a deadly gas) or potential flammability.

Usage

Dangerous chemicals can cause injuries during use, ingestion or inhalation. High volatile organic compounds (VOCs) from fragrances, solvents and other conventional cleaning products may cause Indoor Air Quality (IAQ) problems, resulting in respiratory irritation. Or there may be products that can be absorbed through the skin, causing harm over long periods of time.

Disposal

Some products can harm the environment and human health when they are disposed. A common example is zinc, a metal used in floor finishes that acts as a neurotoxin, harming the development of the brain and nervous system. Nonylphenol

ethoxylates, surfactants found in many detergents, are thought to be endocrine disruptors that can cause permanent mental, learning, and behavioral disabilities. Heavy metals often end up in the water supply, harming aquatic life.

Seek Out Green Third Party Certifications

Third-party organizations, such as Green Seal, EcoLogo and the EPA's Safer Choice (previously known as Design for the Environment) program have created third party certifications, also known as ecolabels or standards, for the majority of green cleaning chemicals used in schools. Recognized third party certifications can help purchasers like you navigate the marketplace and weed out products that simply claim to be green from those products that actually are green.

Here are commonly certified cleaning products:

- General purpose and hard surface cleaners
- Glass cleaners
- Hard floor cleaners
- Carpet cleaners
- Hand soaps
- Specialty cleaners (such as drain openers and stainless steel cleaners)

Product formulations and third-party certifications are constantly being updated. It's important to use the most updated third-party certifications and product lists. Always check the standard's website to find the most up-to-date product list, or check with the manufacturer of a certain product to see if its certification has been updated. It was only a few years ago that product categories were limited for certified products, such as graffiti removers or floor finishes. These products were either difficult to find or simply didn't do the job adequately. However,

the market has matured, and with the exception of disinfectants and sanitizers (see [infection control guide](#)) many green cleaning programs can successfully procure certified products for all their cleaning needs.

Cost Comparison

Many schools have found their costs for green cleaning products to be less than or equal to conventional cleaning products. The key to this cost benefit lies in volume. Instead of using several specialized cleaning products containing harmful chemicals, schools can use just a few green cleaning products that have multiple uses, purchased in larger volumes for cost savings.

"Best Value" Model

Rather than just looking for the cheapest price, school districts should consider adopting a "best value" purchasing model. This not only looks at the cost, but also the performance, health and environmental attributes of a product. Perhaps more importantly, "best value" purchasing model evaluates the vendor's ability to train custodial personnel on critical issues such as:

- Proper chemical mixing
- Proper techniques to maintain hard floors and carpets
- Strategies to reduce exposures to vulnerable and sensitive occupants
- Efficient methods to clean restrooms and classrooms
- Vendor's reputation for timely delivery and other support functions

Consider Labor Costs

Purchasing based solely on the lowest product cost can create significant difficulties. Unlike most school products, such as furniture, art supplies or writing

paper, cleaning supply costs are labor dependent. In fact, labor represents around 80-90 percent of a cleaning budget, while cleaning products represent less than 10 percent. Without the proper training, small savings on the product can result in unintentionally large labor costs. That's why it's so important to consider each investment from an end user's perspective and invest in training. This way, you'll get the best value from your green cleaning purchases.

Product Categories for Discussion

Some school districts and local health codes have very specific rules regarding the purchase of disinfectants and sanitizers. Additionally, some categories still are limited in the number of green products in the marketplace. Here we offer our own considerations for even the trickiest cleaning product categories, with tips on finding the greenest solutions that also meet your regulations.

Aerosols

Most school cleaning procedures do not require aerosols. CFC propellants have been banned for some time so most aerosols now use propane or butane (cigarette lighter fluid) as the propellant. These can cause inhalation issues and may be extremely flammable. Aerosol containers are also difficult to recycle and impossible to reuse. Look for dispensers with a simple trigger sprayer or a "flip-top" dispenser, such as typical toilet bowl cleaners or cream furniture polish. If aerosols have to be used for ergonomic reasons or other specific needs, look for products that are EPA Safer Choice (previously Design for the Environment) recognized.

Floor Care

We agree that floors need to be clean, especially when children sit on them. But how shiny does the floor really need to be? A satin finish versus a

high gloss will reduce the need to maintain, buff, burnish and ultimately strip and recoat a floor. The issue of durability is also incredibly important. A finish that stands the test of time will reduce the frequency of stripping and recoating. That should reduce environmental impacts and health risks to custodians. It will also save the school money.

Modern floor care systems allow facility operators to cut back on stripping and recoating floors. This limits the amount of waste and effluent poured down the drain. Modern green finishes require new procedures for maintenance and training, but their durability has improved. Look for certified finishes, and consider strategies to reduce the needs for stripping and recoating.

Chlorinated and Ammoniated Cleaners

These products are respiratory irritants, which means they irritate people's lungs and may trigger asthma attacks. Chlorine-based cleaners are corrosive. They burn eyes and skin and permanently damage carpets and clothing. Mixed together, these two chemicals create a deadly gas. Hydrogen peroxide-based products can be excellent alternatives to chlorine bleaches and even some sanitizers and disinfectants. However, some local public health codes require their use for disinfecting. In these cases, follow public health codes and make sure the chemicals are being used sparingly in well ventilated spaces and with proper protective gear.

Disinfectants

The EPA does not currently allow environmental claims to be used when describing disinfectants and sanitizers because these chemicals are designed to kill living organisms. However, the EPA Safer Choice (previously known as Design for the Environment) program is piloting a program that is slowly allowing healthier and greener disinfectants to enter the marketplace. And Green Seal is starting to certify disinfectants. While what companies are allowed to say about their "certified disinfectants" is a bit

murky at this time, one can seek out disinfectants that have gone through evaluation for EPA's Safer Choice, EcoLogo and Green Seal now.

Germ control in schools is important, but not all microorganisms are "bad." Good physical cleaning of surfaces is often enough. Using harsh chemicals such as chlorine, phenols and quaternary ammonium compounds (quats) irritates eyes, skin and respiratory systems. It damages finishes, carpets and clothing and even produces poisonous gases. Overusing disinfectants may produce resistant bacteria that further harm health and the environment.

Furniture Polish, Dusting Compounds and Metal Polish

These products commonly contain a wide variety of ingredients that harm human health and the environment. Furniture polishes, dusting compounds and metal polishes are frequently derived from petroleum, including solvents, ammonia and benzene, a proven carcinogen. Petroleum is an increasingly scarce, non-renewable resource and is not a necessary component for these, or other, custodial products. Petrochemical-based furniture, dusting compounds and metal polishes cause more complaints from building occupants than from any other products.

These products can be replaced with plant-based, low-odor, and naturally derived alternatives, including cleaning sponges that physically remove dirt or bio-based alternatives for polishing. In many cases, schools find that eliminating polishes and simply using microfiber for cleaning actually keeps stainless steel cleaner longer because without the polish, it attracts and retains less dirt. For dusting, microfiber products are a superior green choice. All of these alternatives are equal to or more effective than traditional petrochemical products and are safer for users, the environment and students.

Drain Openers and Grease Trap Products

These products are frequently used to open clogged drains and grease traps in restrooms and kitchens. Drain openers are typically highly acidic or highly alkaline products. They are very corrosive and will burn eyes and skin, resulting in serious and irreversible damage. Grease trap products are frequently solvents that can have serious environmental impacts. Alternatives are now available for these applications based on "biological" products using non-pathogenic (not harmful) microbes that are less harmful to human health and the environment.

Gum Removers

Gum removers used to be formulated with chlorinated solvents, such as freon, before those solvents were banned because of their environmental impact. Dry ice and carbon dioxide are preferable replacements. Degreasers can also be used in some situations. Additional recommendations for gum removers include:

- Choose those that have no or low VOCs over alternatives with higher levels
- Consider detergent-based products compared to those containing solvents
- Choose products that have a high flashpoint compared to a low flashpoint, since high flashpoint products are less likely to combust
- Choose products with a neutral pH (closer to 7) instead of those with extreme pH (closer to 1 or 14)

More preferable ingredients include dry ice and carbon dioxide. Less preferable ingredients include freon, dichloro-difluoromethane and trichloro-fluoromethane.

Lime & Scale Removers

Lime and scale removers contain acids to remove mineral deposits from sinks, bowls and urinals.

Chose those with a more neutral pH over those with extreme pH (closer to 1). Environmentally preferable lime and scale removers may fall more in the range of pH 4 as compared to traditional products that may have a pH below 1. More preferable ingredients include citric or acetic acid. Avoid ingredients like hydrochloric or phosphoric acid.

Grout Cleaners

Environmentally preferable grout cleaners may be enzyme- or peroxide-based. Avoid bleach when possible.

Get Started!

Now that you have the steps laid out before you, it's all about moving forward with your plan. [Contact us](#) at Healthy Schools Campaign to share your story, ask follow-up questions or find out how to connect with green cleaning leaders across the country. Our [newsletter](#) is a great way to stay on top of green cleaning trends and learn about what other schools are doing that really works. And now that you're preparing your green cleaning program, you'll want to prepare your school to apply for the [Green Cleaning Award for Schools & Universities](#).