

Focus Areas

What is something you use every day but never see and hardly ever think about?

Air

AIR

Students spend six to seven hours every day breathing the air in school. According to the U.S. General Accounting Office, nearly 15,000 schools have air that is unfit to breathe. Improving the air quality in and around your school improves your ability to breathe easy. Many schools have poorer air quality than office buildings due to chalk, bus idling, and lack of greenspace. Because poor air quality leads to asthma, allergies, and other illness, improving air quality is critical for the one in five people in the United States who spend their day in a school building. Household cleaners, pesticides, building materials, asbestos, fragrances, scents, and radon are all common sources of indoor air pollution. Outdoor air pollution from vehicles and industries are also damaging to human health and the natural environment. Improving air quality is a good way to prevent illness and improve the overall health and productivity of students.

1. Indoor Air Quality

Goals

- Cleaner indoor air
- Reduced asthma and allergies



How?

| Project Examples | Measure Your Project's Impact |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Reduce toxic cleaning and art supplies by using green supplies. | Weight of toxic cleaning and art supplies eliminated from schools, homes, and community buildings |
| Train teachers and staff about green cleaning. | Number of teachers and staff trained each year on green cleaning |
| Educate people about the importance of clean indoor air in reducing allergies and asthma. | Number of people educated about clean air |

2. Outdoor Air Quality

Goals

- Increased carpooling
- More trees
- Cleaner outdoor air
- Reduced school bus idling



How?

| Project Examples | Measure Your Project's Impact |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Assess transportation patterns and encourage mass transit, carpooling, and bicycling. | Decrease in number of vehicles coming to and from school or other place in the community each day |
| Campaign to turn off the engine of school buses and cars when unloading/loading at school and/or community areas. Create no-idling zones in carpool lanes. | Decrease in number of minutes spent idling |
| Plant native shrubs and trees. | Number of new shrubs and trees planted Increase in number of different plant and animal species |

Resources

www.epa.gov/iag/schools: Tools and suggestions for improving air qualities within school buildings. There are resources about mold, caulk, and asthma. Within the Improve Air Quality “action kit” there are documents that give specific steps to improve air quality in projects that are based in schools.

www.epa.gov/cleanschoolbus: Clean School Bus USA is a program aimed at reducing children’s exposure to exhaust. This Web site has links to the national campaign to reduce bus idling, as well as outreach materials for the campaign.

www.greenseal.org: The Green Seal is a nonprofit organization that sets environmental standards for products. This organization evaluates products’ compliance with standards and also enables consumers to see what products are Green Seal certified.

www.greenguard.org: The Greenguard Environmental Institute certifies satisfactory indoor air quality in buildings, schools, and construction sites. The resources include information about why indoor air quality is so important and links to articles that stress the importance of good indoor air quality in schools.

www.airwatchnorthwest.org: Resources for outdoor burning programs and anti-idling programs, including tips on how to reach out to schools and bus drivers. There are templates for letters that parents, students, and school officials can sign to make a pledge.

www.earthday.net/noidling: The No Idling Campaign through the Earth Day Network is a great resource for Girl Scouts when conducting projects. There are also other helpful resources on the Earth Day Network Web site such as links to community campaigns and educational programs.

www.earthforce.org/content/article/detail/1556: Earth Force has a long article about air quality including lists of air quality pollutants, an air pollution history timeline, and details about federal laws pertaining to air quality.

Can you recite the three Rs of waste management?

WASTE MANAGEMENT

Each one of us throws away approximately 4.6 pounds of waste per day! That means each week you throw away enough trash to equal more than 60 boxes of Thin Mints. We need to make good decisions in our daily consumption patterns and teach others about reducing, reusing, and recycling, which are daily actions that make a big difference in how much waste we produce and how quickly we use the space in landfills. Composting helps clean up contaminated soil, prevent pollution, and create more space in landfills. Reusing consumer goods means that fewer new products need to be produced, thus saving energy. Helping to manage waste can also serve as a money earning activity for your project.

1. Reduce

Goals

- Reduced greenhouse gases
- Reduced purchase of food containers and reduced waste



How?

| Project Examples | Measure Your Project's Impact |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Reduce quantities of disposable food and drink containers consumed. | Reduced weight of weekly or monthly purchases of food containers |
| Reduce waste of weekly junk mail (for example, join the Catalog Canceling Challenge and contact mail sources). | Reduced weight of weekly junk mail and bathroom supplies |
| Reduce waste of bathroom supplies (for example, install hand driers in bathrooms). | |
| Print paper double-sided (for example, adjust printer default for automatic double-sided printing). | Reduced weight of paper purchased per month |
| Educate and advocate for reduced consumption of goods. | Number of people educated about waste management |
| Decrease the amount of trash produced (for example, encourage others to recycle, reuse, and donate items and to buy items in minimal packaging). | Decrease in weight of trash sent to landfill per week |

2. Reuse and Recycle

Goals

- Decreased volume of waste and less impact on local resources and landfill space
- More recycled aluminum cans, plastic, newspaper, paper, and electronics



How?

| Project Examples | Measure Your Project's Impact |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Donate usable items—sporting goods, food, electronics, clothing, books, and furniture. Form a waste exchange to trade unwanted consumer goods. | Weight of usable items donated |
| Start a compost program in your school, home, or community (check state regulations first). | Weight of items that are composted |
| Reuse paper <ul style="list-style-type: none"> ○ Place trays or boxes for paper used on one side for others to reuse before recycling. Make notebooks by binding papers used on one side with cereal boxes. | Reduced weight of paper purchased |
| Educate people about benefits of recycling. | Number of people educated about recycling |
| Start/promote recycling programs and install recycling bins in visible and convenient locations (for example, paper, cardboard, plastic, glass, aluminum cans, e-waste, Capri Sun pouches, snack wrappers). | Weight of items that are recycled—paper, aluminum, plastic, cell phones, e-waste, and other products |
| Increase use of reusable water bottles through educational efforts. | Number of people educated about water bottle waste |
| Plan a Waste Reduction Week where events occur on themes days (for example, Monday is Reduction Day, Tuesday is Compost Day, Wednesday is Zero Garbage Day, Thursday is Conservation Day, Friday is Reuse or Exchange Day and tie to national environmental events. | Refer to metrics for each specific activity |

What do a fish, a tree, and a human have in common?
Water

WATER

Each person uses 150 gallons of water a day on average. This translates into roughly 55,000 gallons used per person every year. In a class of 25 students, the students use enough water each year to fill 2 Olympic-sized swimming pools! If water consumption is reduced, that means that there is more clean water for wildlife and you in the future. Two-thirds of your body is nothing but water, which means that we don't just use water, we are water! There is a finite amount of water on Earth, so we need to conserve clean water for future generations. Water can be recycled from cooling systems and irrigation systems and used more efficiently in buildings by using low-flow shower heads and fixing leaky toilets. Promoting awareness of water consumption also help decrease water usage.

1. Improve water quality

Goal

- Improved particulate count



How?

| Project Examples | Measure Your Project's Impact |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Remove garbage and other waste from a local water body. | Weight of trash collected and removed from body of water |
| Implement a plan to improve water quality by focusing on education and advocacy. | Number of people educated |
| Plant native shrubs and trees around water body to prevent erosion. | Number of new plants, shrubs, and trees Number of square feet improved |
| Sand dune restoration. | Increase in number of different plant and animal species |

2. Conserve water inside and outside of buildings



Goals

- Reduced water consumption
- Reduced impact of water on municipality for water treatment

How?

| Project Examples | Measure Your Project's Impact |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Campaign for people to reduce their shower time. | Total number of minutes by which shower time was reduced x 2.5 gallons per minute = reduction in total number of gallons of water |
| Educate people about reducing water consumption and pledge to reduce consumption. | Number of people educated Number of people who pledge to reduce their water consumption practices |
| Replace shower heads, toilets, and faucets with low-flow models. | Reduction in number of gallons of water used |
| Irrigation controls, xeriscaping of schoolyards, and plant trees and native plants. | Reduction in number of gallons of water used Number of new plants, shrubs, and trees Increase in number of different plant and animal species |
| Campaign and help school officials install plants that do not need lots of water. | Number of new native plants, shrubs, and trees |
| Build a rain garden. | Number of square feet in garden Number of new plants Increase in number of different plant and animal species |

Resources

[www.girlscouts.org/program/gs_central/insignia/online/participation_patches/water_drop/-Water Drop Patch Project](http://www.girlscouts.org/program/gs_central/insignia/online/participation_patches/water_drop/-Water_Drop_Patch_Project): A program resource, co-produced by GSUSA and the EPA, that teaches Girl Scouts about water quality and how to take action in their communities to protect and restore local water resources. Guidance on constructing rain gardens on school properties is included.

www.epa.gov/safewater: The EPA has resources about water pollution, instructions on how to build rain gardens, and information about local water sources. This Web site includes links to publications about water conservation and ideas for promoting water efficiency.

www.epa.gov/watersense/index.htm: Water Sense is an EPA partnership voluntary labeling program that offers consumers a simple way to make product choices that use less water with no sacrifice to quality or product performance.

www.worldwatermonitoringday.org: World Water Monitoring Day is an international effort to improve water quality. There are test kits available to test the quality of local water sources.

www.wateruseitwisely.com/100-ways-to-conserve/index.php: This Web site lists 100 ways to conserve water. One of these tips may spark a project idea.

www.nwwater.com: The North Wales Water Authority provides information and facts about water and ideas for kids on how to conserve water. This Web site includes interactive games for kids about saving water and resources to teach children about water conservation.

www.wetcity.org/resources.htm: *Water Watchers: Conserving Water at Your School and Home*, a school water audit and conservation handbook, helps educators mentor a student-driven audit of water use at school and in their homes. Lessons in the guide are arranged to lead students from awareness of basic water conservation issues to responsible action and stewardship of their water environment.

www.projectwet.org: According to this Web site, "the mission of Project WET is to reach children, parents, educators, and communities of the world with water education." There are numerous resources about water and water sources.

What do we spend more money on than cell phones, computers, cable, television, Internet, and all other types of media combined?

Energy

ENERGY

Non-renewable energy sources, such as oil and coal, pollute the environment. Because air quality and health of people are severely impacted by non-renewable energy sources, it is important to minimize the use of non-renewable energy sources. Support usage of less energy in general and the use of renewable energy when possible. Renewable energy sources, such as solar and wind power, are cleaner and are replenished in a short period of time. The limitation of renewable energy sources is that they rely on weather and may not be consistently available.

1. Energy Conservation—Buildings

Goals

- Reduced energy usage



How?

| Project Examples | Measure Your Project's Impact |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| Create a project designed to reduce energy use at home and/or school (for example, use more energy efficient lighting and equipment, make small reminder signs to post near light switches and computers that say "turn off the lights" or "turn off the computer"). | Decrease in energy use (kWh, BTUs, etc.) |
| Use a Kill A Watt tool to measure the energy usage of appliances and replace inefficient appliances. | |
| Advocate for building to use Energy Star's Portfolio Manager to evaluate energy performance. | |
| Educate people about energy usage and alternative and how to reduce their energy usage. | Number of people educated about energy usage |
| Advocate for long-term budgets to include solar panels or wind turbines. | Increase in amount of renewable energy used (kWh, BTUs, etc.) |

2. Energy Conservation—Transportation

Goals

- More carpooling and bicycling
- Less fuel used by school buses and cars
- Lowered use of energy



How?

| Project Examples | Measure Your Project's Impact |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Implement plan for conserving energy by changing transportation patterns.</p> <ul style="list-style-type: none"> ○ Bike racks and bike paths ○ Carpooling program ○ Walking school buses | <p>Decrease in number of vehicles coming to and from school or other place in community each day</p> |
| <p>Educate about alternative fuels and campaign to reduce energy usage, and/or have people sign a pledge to reduce their energy consumption.</p> | <p>Number of people who are educated about reducing energy</p> <p>Number of people who sign a pledge to reduce their energy consumption</p> |
| <p>Plant trees and shrubs strategically to reduce heating and cooling costs.</p> | <p>Number of new plants, shrubs, and trees</p> <p>Number of square feet of new or improved green space</p> <p>Increase in number of different plant and animal species</p> |
| <p>Educate people in the community about green vehicles which have higher than average mileage and produce fewer emissions.</p> | <p>Number of people educated about greener vehicles</p> |

Resources

www.southface.org: South Face focuses on energy sustainability projects. Resources include designs for green buildings.

www.energystar.gov/powermanagement: Energy Star standards require that electronics use less energy than federal efficiency standards. Councils can join campaigns to reduce energy consumed by refrigerators, telephones, and computers.

www.usgbc.org: U.S. Green Building Council provides information about greening buildings and LEED certification. There is a link to Build Green Schools.

www1.eere.energy.gov/buildings/energysmartschools: Schools are a great place to teach children about energy and the environment. This Web site includes suggestions on designing and building green schools.

www.consumerenergycenter.org: Includes energy tips for schools, information about renewable energy, and transportation tips to reduce energy consumption.

www.kidwind.org/lessons/teachers.html: Resources for teaching girls about renewable energy sources.

www.windpoweringamerica.gov/schools.asp: Information about wind power in schools. This Web site also provides links for interactive activities and other resources about wind power.

www.epeat.net: EPEAT helps consumers choose electronic products (computers) based on their environmental characteristics.

www.focusthenation.org: Focus the Nation is a national teach-in and policy agenda with a campaign to promote the civic engagement of youth.

www.greenroofs.com: A resource portal for green roofs.

www.fueleconomy.gov: The United States Department of Energy gives tips on vehicle energy usage and how to drive more efficiently.

www.epa.gov/greenvehicles: The EPA's guide to Green Vehicles help people chose fuel-efficient vehicles to meet their needs. This information can serve as the basis of an educational session in the community.

www.emoregon.org/pdfs/OIPL/OIPL_Kill_A_Watt_fact_sheet.pdf: This is a PDF file about how to use a Kill A Watt to save energy.

Field Code Changed

What can reduce noise pollution, absorb pollutants, feed dozens, and cool the surrounding air all at the same time?

Green Space

GREEN SPACE

When environment-based education was integrated into academic programs, test scores in reading, math, science, and social studies all improved, according to a study conducted in 2000 by the National Environmental Education & Training Foundation. In addition, green spaces are an important asset to communities. Trees and other plants offer a beautiful, natural place for humans to relax and a habitat for a variety of animals and other organisms. They also provide a space for gathering, preserving the environment, and working together as part of a healthy lifestyle. As few as 20 trees can offset the pollution from a car driven 60 miles per day. Trees also produce oxygen—the amount of oxygen produced by an acre of trees per year equals the amount consumed by 18 people annually.

Create green space and improve existing green space

Goals

- Increased square footage of usable green space
- Increased number of student-hours of green space use
- Increased species diversity



How?

| Project Examples | Measure Your Project's Impact |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant native trees, shrubs, and flowers. | Number of new plants, shrubs, and trees Number of square feet of new or improved green space Increase in number of different plant and animal species |
| Educate school officials and community members about the benefits of creating and preserving green space. | Number of people educated about the benefits of improving and maintaining green space New practices or policy changes made as a result of educating school officials |

| | |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Start community or school vegetable gardens. | Number of square feet of new green space Increase in number of different plant and animal species |
| Clean up trash in a local park or green space at your school. | Volume of trash collected |
| Clean up a trail or improve the usability of a trail by spreading mulch or woodchips over the trail. | Number of square feet of green space improved |
| Work with schools to plan activities that integrate curricula and green space. | Increase in number of student-hours of green space use |

Resources

www.epa.gov/greenscapes: Suggestions for cost-efficient and environmentally friendly landscaping solutions. This Web site addresses composting, plants, green buildings and landscapes, and recycling.

www.earthnext.org/programs/trees21.html: This is an educational and tree-planting toolkit. This Web site suggests science-based activities for children ages 6–18 that reinforce the value of stewardship.

www.edibleschoolyard.org: Edible School Yard is an example of an organic school garden in California. This Web site includes plans for gardens, recipes, and links to other Web sites about locally grown foods.

www.slowfoodusa.org/index.php/programs/details/in_schools: Slow Food USA has examples of projects that meet community needs, such as cooking classes and school trips to local farms.

www.lifelab.org: Life Lab gives tips for planting a school garden and has publications about school gardens.

www.kidsgardening.org: Classroom project ideas, resource directory, and grant opportunities for kids' gardens in the community.

www.happeninhabitats.pwnet.org: This Web site is a great resource for learning about habitats and plants and includes suggested activities that are appropriate for elementary school–aged Girl Scouts.

www.eeweek.org/resources/garden_curricula: The National Environmental Education Week Web site offers lesson plans about gardening and green space for each grade level of Girl Scouting.