# Community Action Projects

## Outreach and Education Ideas

Here's an opportunity to share what you've learned about air quality with others. You'll find that teaching is a great way to deepen your own understanding, whether it's through an air quality campaign or creating an educational garden near your school, church, or community center. For more resources and ideas about environmental education projects, see: www.eenorthcarolina.org/about-us--what-we-do.html.

*Air Quality Campaign*

Take a leadership role in your school and community to encourage others to work together to prevent air pollution to improve the health of the community. Design and carry out a marketing campaign for the entire school community about ways to improve air quality. (If you are interested in creating a campaign about the history and success of the Clean Air Act, see the Extensions section of Activity 3-4: The Clean Air Act at itsourair.org). Educate your community about air quality, including these topics:

- The connection between energy and air quality
- Health effects of air pollution
- Ways to prevent air pollution at home, at school, and on the move

Get the message out:

- Design and distribute posters, brochures, and presentations.
- Visit classrooms at your school and/or the local elementary school to educate students.
- Produce a PSA (public service announcement) video and/or audio spot to air on school stations and/or community stations.
- Create petitions/pledges for members of the community to commit to saving energy at home.
- Use social media to encourage others to post pictures of themselves taking action to improve air quality.
- Organize projects to bring people together to learn about and reduce air pollution.
- Offer participants the opportunity to win prizes.

*Measure results*: Conduct a pre-evaluation and post-evaluation to assess how well your campaign educated people, changed behavior, and prevented air pollution. You can also use the pre-evaluation to guide your campaign by using it to identify misconceptions and/or energy-wasting behaviors that are particularly common.

### *Air Quality Garden*

- Design and build a community garden to educate friends, family, and neighbors about some of the ways that plants and animals depend on clean air.
- Plant some species that are particularly sensitive to ozone and some that are not. Monitor all the plants for the damaging effects of ozone.
- For more information on creating an ozone garden see Hands on the Land.

### *Reduce Vehicle Emissions*

Transportation is one of the biggest sources of air pollution emissions in North Carolina. People around your neighborhood and in your community travel via school buses, city buses, private cars, and by foot or bike. How can you encourage the school community to reduce emissions due to driving?

Consider a public awareness campaign or a community-wide contest. Keep in mind that there are many different audiences and stakeholders: bus drivers, students, parents, and the school system's maintenance and purchasing department.

Bus and car emissions can be reduced through a number of strategies:

- Technology (newer school buses pollute much less than older ones)
- Green driving habits (avoiding jackrabbit starts, reducing idle time, avoiding a drive-through, using cruise control, not speeding, and more)
- Proper maintenance (maintaining proper tire pressure, changing oil and air filters regularly, and more)
- Walking or biking to school, carpooling, or taking the bus instead of driving

*Resources*

More information about saving energy and improving air quality through transportation strategies, including resources specific to North Carolina from the Campaign for Clean Air: www.campaignforcleanair.org and www.centerfortheenvironment.org

More information about efficient driving habits, including downloadable posters, from the North Carolina Department of Transportation: www.ncdot.gov/travel/drivegreen/

Clean School Bus USA is a project designed to reduce the number of buses using diesel fuel and/or reduce the emissions from diesel school buses to protect kids' health and reduce air pollution. Students might want to do a survey to find out what kinds of buses their school system uses and how much they pollute. Grants are available to help individual school systems reduce the pollution emitted by their school buses. See: www.epa.gov/cleanschoolbus/

More information about idle reduction from the U.S. Department of Energy, including downloadable posters, etc.: https://cleancities.energy.gov/technical-assistance/idlebox/

More information about idle reduction from the North Carolina Division of Air Quality:
http://deq.nc.gov/about/divisions/air-quality/motor-vehicles-air-quality/idle-reduction

http://deq.nc.gov/about/divisions/air-quality/motor-vehicles-air-quality/idle-reduction/faqs

https://deq.nc.gov/about/divisions/air-quality/motor-vehicles-air-quality/idle-reduction/turn-off-your-engine-campaign

## Engineering Ideas

For any of the following ideas, consider collaborating with engineering classes, enlisting the help of an engineering parent, or reaching out to industry partners and/or regional engineers with the Division of Air Quality.

### *Evaluate Wind Energy Potential*

Most of North Carolina does not have winds that are strong and regular enough to make wind-generated power economically viable. However, some areas along the coast (particularly the Outer Banks) and on mountain ridge tops are viable. If your troop is in or near such an area, analyze the wind potential near your home, school, or church. (*Notes:* Try the Campus Energy Audit on page 5 of the NC Air Awareness Program www.itsourair.org Module 3, Activity 5: Research and Action: Community Air Quality Project)

Resources:

Map of wind turbines in North Carolina: http://wind.appstate.edu/turbine-map

Wind resources map of North Carolina: https://windexchange.energy.gov/maps-data/74

Plotting a wind rose using Excel: www.enviroware.com/plot-a-wind-rose-in-excel/

Planning a small wind electric system: http://en.openei.org/wiki/Small_Wind_Guidebook

### *Build a Wind Turbine*

Team up with local engineers, carpenters, etc. to build a functioning wind turbine.
For ideas, see: http://kidwind.org

www1.eere.energy.gov/education/pdfs/wind_basicpvcwindturbine.pdf

http://energy.gov/eere/education/education-homepage

### *Evaluate Solar Energy Potential*

Does your school, church, rec center, or home have space that could be devoted to solar photovoltaic (PV) panels – on the roof, on or next to playing fields, parking lots, etc.? Use a Google Earth map of the campus and your knowledge of the angle of the sun at different times

of year to make sure the chosen locations would receive enough sun. Do a cost-benefit analysis of using solar energy to power some of the school's energy needs.

Resources:

Information about many aspects of solar energy in North Carolina: https://nccleantech.ncsu.edu

Solar potential maps: http://energy.gov/maps/solar-energy-potential

A Google tool to analyze solar potential of your roof: www.google.com/get/sunroof#p=0

To determine optimal angle for solar panels in your area: www.solarpaneltilt.com and http://solardat.uoregon.edu/SunChartProgram.html

### *EV (Electric Vehicle) Challenge*

Teams of high school students work together to design and build electric vehicles that will compete against EV's from other schools. There are three classes of vehicles, ranging from full-size cars/trucks to small, single-person vehicles.

More information is available at: www.evchallengekids.org/schools/

## Public Debate Ideas

Have a public event, perhaps in cooperation with parents, teachers, coaches, and community groups. Consider bringing an outside speaker (Like a representative from the Division of Air Quality) to the event in order to generate interest and awareness about air pollution and the role of regulation in keeping the air clean and the community healthy. Collaborate with your school, church, or an outside organization to stage a debate, mock court case, or public hearing.

### *Mock Trial*

Research some actual court cases involving the Clean Air Act and argue the same topics.

### *Debate / Public Hearing*

Research new policies that are being considered in your county, choose a stance and hold a public forum to argue for or against a piece of legislation.