



Environmental
Education
Advisory
Council of
New York City

EEAC

Summer 2015

GrowNYC's ENVIRONMENTAL EDUCATION PROGRAM

By Michael Zamm, Director of Environmental Education

GrowNYC's environmental education program motivates high school and middle school students to organize and participate in environmental improvement projects in their neighborhoods and schools. The program has been opening eyes for young people and improving the quality of life in our city for **36 years** and counting!

By the numbers: over 42,000 students in 1,700 classes in nearly 160 schools have been involved in 1,000 improvement projects in all five boroughs and the city's upstate watersheds. Youth have planted or mulched

52,500 trees, shrubs, herbaceous plants, ground cover plants and bulbs including more than 23,000 trees and large shrubs along water bodies in 25 watersheds from Jamaica Bay to the northwestern Catskills, removed 15 tons of litter and silt from NYC beaches and streets, pulled invasive plants and vegetative debris from 1.4 miles of shoreline, reported hundreds of environmental conditions in need of repair, e.g., leaking fire hydrants and broken sidewalks to city agencies and performed numerous other services across a whole range of environmental issues.

Many students have used their experience in the program as a springboard to undergraduate or graduate studies in the environment, part time, seasonal and full time jobs, involvement in their neighborhood environments or simply to implement sound environmental behavior in their homes.

Angela Lynch, a program alumnus from the late 1980s, went on to achieve undergraduate and graduate degrees in environmental studies and then became the main assistant to the authors of NRDC's 1995 landmark 25-year status report on NYC's environment. Stacy Granda, a recent graduate of DeWitt Clinton High School, participated in GrowNYC's EE program as President of the Clinton Environmental Affairs Club where she led her club mates in sculpting the Clinton garden and in planting trees in Van Cortlandt Park and along the Little Delaware River in the city's upstate watershed. She continues her work helping the Friends of Van Cortlandt Park while majoring in environmental studies in college.



Our evaluation of three years of programming at CS 211 in the South Bronx, where the same students did one EE program each year as they progressed through sixth, seventh and eighth grades, indicated that 90% of the students were practicing sound environmental behavior at home, especially concerning water *continued on pg. 7*

EEAC NEWS

Steering Committee Meetings

Please visit the EEAC website at www.eeac-nyc.org for meeting locations or contact an EEAC Steering Committee member. All steering committee meetings are open to anyone interested in learning about environmental education in New York City and sharing information about special programs and projects.

Newsletter Deadlines

If you would like to submit an article for the newsletter, please email it as a Microsoft Word attachment to lmiller296@aol.com.

The newsletter deadline is the first Monday of Feb., May, and September. We would love your ideas!

Newsletter Committee

Lynn Cole

Kim Estes-Fradis

Joy Garland

Lenore Miller, Newsletter Editor



Submitted by
the NYC Department of Environmental Protection
from the annual Water Resources Art and Poetry

ENVIRONMENTAL EDUCATION ADVISORY COUNCIL

Judith Hutton

The New York Botanical Garden

Teacher Training

2900 Southern Boulevard

Bronx, NY 10458

www.eeac-nyc.org

This newsletter is a publication of the Environmental Education Advisory Council (EEAC), a voluntary organization of educators, classroom teachers, administrators and other professionals in active support of quality environmental education.

EEAC OFFICERS

Judith Hutton, Chairperson

John Pritchard, Treasurer

Shig Matsukawa, Secretary

Jacqueline Pilati, Program Chairperson

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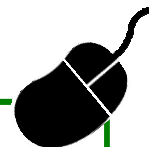
Mike Zamm, GrowNYC

* affiliation for identification purposes only

GET CONNECTED!

The EEAC listserv has migrated to a new home at EEAC-NYC@googlegroups.com. If you are a member of EEAC and would like to join the listserv contact

Carol Franken at carolfranken@gmail.com



CHAIR'S MESSAGE

Since the inception of the Environmental Education Advisory Council (EEAC) 40 years ago, the impact of this organization has grown. Environmental Education programs and informal educators provide meaningful outdoor experiences for urban children across New York City. Understanding of human impact has expanded into sustainability initiatives inside New York City Schools.

However, as many in the environmental education community know, this was not always the case. Environmental Education emerged as a profession in the 1970's and has grown both in scope and in its level of professionalism. Over the years, advocacy has yielded incredible opportunities for growth in the field with an overarching goal of providing excellence in formal and informal Environmental Education.

EEAC provides a forum to promote and support outstanding Environmental Education through our newsletter, website, Google Group and networking events. Over the years, costs have continued to rise to provide these important initiatives and the organization recently decided to increase membership fees. EEAC continues to be a member-supported organization, so please consider donating by becoming an individual member or promote organizational membership by your employer (see our updated membership form on the last page of the newsletter).

Everyone is welcome at our monthly Steering Committee meetings. Please join us at upcoming event or meeting and learn how you help out by volunteering your time!

I look forward to working with you!

Judith Hutton,
EEAC Chair

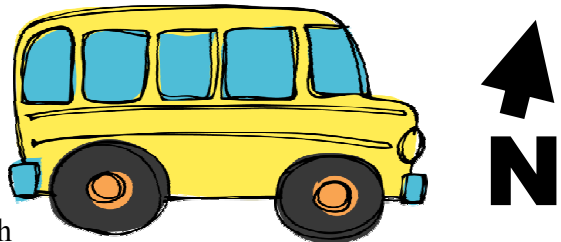


NYC Upstate Watershed Tour

The New York City Department of Environmental Protection is pleased to once again offer a free, day-long bus tour of the New York City water supply watershed for non-formal educators from NYC cultural institutions, education and environmental organizations, and youth groups.

The tour will take place during the last week in June (date still to be determined) from 7 am – 7:00 pm. You will have an opportunity to learn about the history of the New York City water supply system and ongoing watershed protection programs related to:

- Land management
- Watershed forestry and agriculture
- Stream and riparian buffer management
- Watershed regulations and enforcement
- Water quality monitoring
- Environmental education and community outreach



You will meet watershed scientists, foresters, engineers, historians, community members, and other educators. This special bus tour has been designed as a professional development opportunity to help you create, enhance and implement lessons and activities for young people and adults about the New York City water supply system and stewardship.

Please email educationoffice@dep.nyc.gov if you are interested in learning more about the bus tour.



A New York City Water Cycle Rain Dance

From the New York City Department of Environmental Protection

DESCRIPTION

Use this introductory activity to help your students learn about the New York City water cycle and watersheds. This interactive lesson can take place in your classroom, an auditorium or outdoors. You will want to encourage your students to close their eyes and use their imagination.

OBJECTIVES

To creatively help teachers and students experience the water cycle

To actively engage students and teachers in learning about the source of the New York City water supply

METHOD

- ◆ Pose the question: “Where do you think your drinking water comes from?”
- ◆ Introduce the activity: As a group we are going to create a rainstorm. You will need to use your imagination.
- ◆ As some of you already know, the water that we drink comes from the sky as rain and snow. It falls far away, more than 100 miles from New York City, on the Catskill Mountains.
- ◆ Water flows downhill, moving by gravity through streams, into one of 19 reservoirs. Every day, one billion gallons of water is transported through aqueducts, water tunnels, and water pipes to our faucets, toilets, washing machines, and so many other plumbing fixtures. Then, when you flush, or brush, the used water travels through more pipes to wastewater treatment plants where it gets cleaned and released back into the NYC water cycle.
- ◆ To further celebrate your learning of, and appreciation for NY’s precious water, we are going to create a rainstorm, right here in this room. You do not need to have an umbrella. I would like you to simply use your imagination to create rain, the source of our drinking water.
- ◆ We’re going to need each and every one of you to participate so let’s all stand up!
- ◆ To simulate or “make” this rainstorm, we are going to make 5 sounds. Let’s practice them first:
 1. rub hands
 2. snap
 3. 2-finger clap
 5. slap thighs & stomp
 4. clap

Now we are ready to simulate the rainstorm so we can feel and understand what happens when it rains on the land that helps to collect our water.

- We begin by rubbing our hands for the wind.
- Rub Hands: Imagine you are 100 miles away, west of the mighty Hudson River, high up in the Catskill Mountains.
- You can feel the mountain breeze flow through your hair; you can see the leaves on the trees covering the mountains starting to blow; the dairy cows from the local farms are grazing in the fields; the farmer who has just planted cauliflower seeds is finishing her chores.
- Take a deep breath with me, inhale and exhale. You can smell the forest, the air is fresh here, and it feels so good. There is even a slight smell of rain.
- There are darkening clouds rolling over the mountains in the distance.

Snap: It begins to rain lightly.

- The birds, deer, fox, bear and other wild animals are running for cover.
- Our watershed friends are coming in from the playground; cows are herded into the barns and the farmer is washing the soil from her hands before she heads indoors.
- As the water falls lightly to the ground, it is absorbed through the soil; tree roots also absorb the water - helping the forests stay healthy – holding the soil in place so it does not wash into streams; puddles form and streams are filling with the clean water.

2-Finger Clap: The streams fill as they flow quickly downhill into larger streams.

- Underwater, the trout are content; there is more oxygen in the water for them to breathe; the farmers are happy too; rain falls on fields where cauliflower, and apples, corn, peaches, and other crops grow and is absorbed by the rich, fertile soil and nourishes the emerging seedlings.

Clap: the streams swell as the rain continues to fall.

- Trout are feeding on the insects while the eagles seek a dry place to rest; children are indoors keeping warm and dry too; streams are flowing down the mountains, into the valleys where they meander into reservoirs, brimming with water.

Slap Thighs/Stomp: Reservoirs are filling up.

Clap: Finally, the sky and rain begin to lighten.

- Eager fishermen and women venture out into the reservoirs; water continues flowing rapidly in streams and underground through the soil; an eagle leaves its perch in the tree near to the reservoir, searching for trout to eat.

2-Finger Clap: Water flows through the NYC water supply system.

- One billion gallons of water is moving -- by gravity -- from the Catskill Mountains to New

York City through the Catskill and Delaware Aqueducts.

- Clean, delicious, healthy, water is flowing from aqueducts into New York City's three large water tunnels.

Snap: Water is flowing under our streets in pipes leading to our homes and schools.

Rub Hands: The sun is peeking out from behind the clouds.

- The sun shines; deer, fox, and bear are coming back to watershed rivers to drink; heat from the sun is causing water to evaporate and the cycle of water continues, just as it always has.
- Someone is turning the tap, filling a glass and enjoying a delicious and healthy drink of NYC tap water.
- And, in the watershed, a rainbow emerges from the brightening sky, still full of moisture from the recent rain, reminding us of the never ending cycle of water.

What a great rainstorm!

For additional information
about DEP's education
resources, please contact
educationoffice@dep.nyc.gov
and visit
www.nyc.gov/dep.

NYC
Environmental
Protection





NYC'S GREEN ENERGY, ARTS AND EDUCATION CENTER

Public Schools Did you know that 1 in 283 Americans is a NYC public school student? 1.1 million NYC students attend school in 1,170 public school build-

ings. Altogether, schools are responsible for a quarter of NYC municipal building carbon emissions. For that reason, the education team at Solar One is hard at work **greening** NYC public schools and inspiring students to apply STEM skills to solve environmental challenges. Solar One's flagship program, Green Design Lab (GDL), is a standards-based curricular blueprint, focused on increasing environmental literacy as it relates to energy, air, water, materials and food.

Thanks to generous grants from NYSERDA and NSF, Solar One is delivering the advanced version of GDL curriculum, known as **CleanTech**, and training teachers in 8 partner high schools across NYC. GDL is unique in that it teaches students to use the school building as both a laboratory for learning and a tool for environmental change. Every GDL partner school participates in a school-wide greening project — installing motion sensors in classrooms, a rooftop garden or greenhouse, replacing incandescent bulbs with CFLs, building solar powered charging stations, etc. Solar One is also partnered with the Department of Education's *Sustainability Initiative* and leads teacher trainings for DOE's School Sustainability Coordina-

tors.

Energy Challenge In 2011, Solar One was named a Department of Education partner in reducing greenhouse gas emissions by 30% by 2017. To this end, Solar One created the Energy Challenge, a competition —with \$30,000 in cash prizes--- for NYC public schools to reduce their building's electricity usage. The Energy Challenge initiative engages the entire school community to achieve school-wide energy reductions.

Sustainable Schools Network Both formal and non-formal educators can become members of the Green Design Lab Sustainable Schools Network (SSN) which provides access to curriculum, technical support, discounted toolkits, tutorials for hands-on activities, and more. Visit www.thegreendesignlab.org for more details.

Visiting Solar One Solar One's Education Center is located in Stuyvesant Cove Park, a sustainably-managed 2-acre public park on Manhattan's East River. The Center's electricity is produced through an array of rooftop solar panels. During warmer months, Solar One offers field trips for K-12 school groups that focus on park ecology and water quality. For more information contact education@solar1.org or visit solar1.org.



SUSTAINABILITY

JULY 25, 2015: BRONX, NY

SUMMIT

REGISTER BY JUNE 15, 2015

On Friday, July 24, 2015 the NYC DOE Office of Sustainability will be hosting the first annual SUSTAINABILITY SUMMIT at the Walton Educational Campus in the Bronx. The summit is intended to be a forum, discussion, instructional, and networking place for Sustainability Coordinators, Administrators, Teachers, Custodian Engineers and school green team members.

This one-day event includes lunch and it is **FREE** for all speakers, exhibitors and DOE employees! If you have questions or if you are interested in having an outreach table contact Nichelle Hudlin, Communications & Training Coordinator, at nhudlin@schools.nyc.gov or 718-349-5487. The registration deadline is June 15, 2015. Find full details at nhudlin.wix.com/sustainabilitysummit.

conservation, lighting conservation and recycling. One third of these young teens had become involved in community environmental projects.

One Clinton student stated “I feel this program has changed the way we see our environment. It made us realize that we can make a change for our neighborhood.”

In recent years, GrowNYC has restructured to better meet school needs, creating shorter but still in-depth, 3 to 8-session modules in participating schools rather than the weekly semester-long projects that were the hallmark of the program in past years. The modules on watersheds and solar energy have been the most prevalent offerings by GrowNYC because of demand by the schools, our ability to raise funds to support them and the clear environmental and cognitive impact on students.



During the **watersheds module**, students work in groups to review maps from National Geographic magazine and NYC DEP to learn about the state of water quality and supply in watersheds throughout the world and in the NYC region. Then, using a plethora of materials, they build model watersheds and display them to schoolmates and parents. Sometimes water and soil infiltration testing are part of the unit. For a culminating project, students plant native trees, shrubs, herbaceous plants, ground cover plants or bulbs, remove invasive species or implement

some other restoration or storm water management activity in a watershed.

The **solar energy module** starts with an introductory lesson on energy, then involves participating students in two sessions building pizza box solar ovens followed by a session on the Earth Science concepts underlying the operation of a solar oven. Finally, students demonstrate and explain their ovens to schoolmates and parents at a mini- energy fair held at their school or at GrowNYC’s Union Square Greenmarket.

The EE program also offers schools an **energy module** on building and showcasing models of green design buildings and other structures.

Students are motivated by these projects. One sixth-grade boy at IS 230 in Jackson Heights, Queens, built a mini-watershed in class and proceeded to go home and construct a much more elaborate watershed made of more durable materials which depicted the watersheds in the entire



NYC drinking water supply system and in coastal waters in the city. A fifth-grade girl at PS 59 in the South Bronx, after building her pizza box oven with her group in class, built a mini-solar oven out of a shoe box at home and brought it in to be tested on the solar cooking day--- it worked! A teacher and a school aide of students at the Manhattan School for Career Development in lower Manhattan, a school for special education students, said they had never seen their charges focused so intently on a project as they did when they built solar ovens at GrowNYC’s learning garden on Governor’s Island.

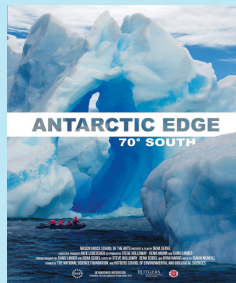
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SUMMER RESOURCES



SUNWISE UV INDEX Keep the UV index at your fingertips with the EPA's free app, for both major smartphone platforms. It displays local, hourly conditions and predictions for a four-day span. There is information on how many minutes or hours you can safely enjoy the sun. Especially useful for the outdoor lover or environmental educator in a classroom without walls, this **SUNWISE** app is a handy tool year-round. And a bonus, there is a gallery of **SUNWISE** artwork winners from every state.

Summer temperatures present a perfect teachable moment to facilitate discussions about climate change. The new documentary, **Antarctic Edge 70° South**, presents an alarming, yet visually stunning picture of the globe in flux. The scientists profiled are shown carrying out their research, their passion front and center. If you buy a copy, or borrow it from a library, you are free to show a class or your environmental group. What could be more appealing in July or August than to watch freezing ice-scapes? beyondtheice.rutgers.edu



Green Horizons,
New York
City's free
conference

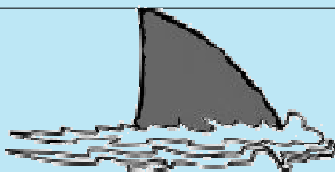
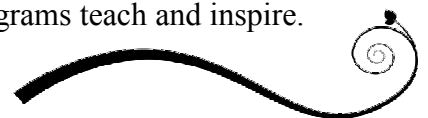
on careers in natural resources and the environment for middle schools is OCT. 15th, 2015 at the Brooklyn Botanical Garden.

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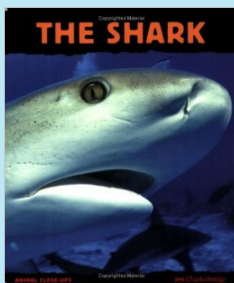
In recent years, in addition to the EE program, GrowNYC has expanded its youth education to include school gardens, recycling education, Green-market education programs, school field trips to two urban farms we maintain and health and nutrition in neighborhoods like the South Bronx. Now, some 25,000 youth each year get outside to learn and improve our city. And many times we bring these programs together under one roof at select schools; that way students have a robust experience that brings to life a variety of subjects in new ways.



In a city as large as New York, it is critical that our children experience the natural world in and beyond their own neighborhoods. Education for all ages is the foundation for making our communities, city and world a better place. We know that the earlier we teach children, the greater the impact made, but whether you are six and only half the height of a sunflower in a school garden or experiencing the unique satisfaction of teaching your peers or even teachers what you've learned, GrowNYC's education programs teach and inspire.



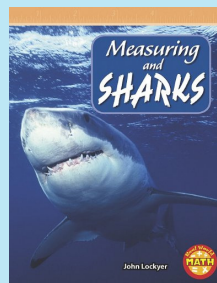
Looking ahead to Shark Week, beginning July 5th, a few books to counter the media madness! Criteria for picking books—no ravenous, gaping maws on the cover!



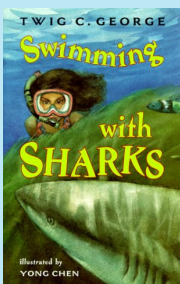
Sharks up close, for the youngest researchers, from grade 1.



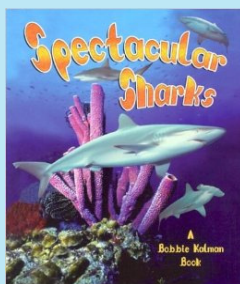
Answers to their many questions for grades 2 & 3.



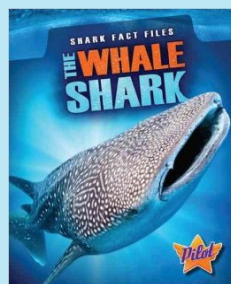
Sharks by the numbers, math by way of deep sea fish, grades 3 - 5.



Grandmother is a marine biologist, of course you swim with sharks! Grades 3 - 6



For grades 4 and up, Spectacular Sharks offers a glimpse of several shark species.



One of the most surprising sharks, gentle giants, for grades 3 - 7.

MEMBERSHIP APPLICATION



☐ New member ☐ Renewal Date _____

MEMBERSHIP CATEGORY

☐ \$30 Individual ☐ \$75 Organization

☐ \$250 Individual Life Membership

Please make checks payable to "EEAC."

Mail completed form and check to:

John Pritchard
EEAC Treasurer
72-35 Metropolitan Ave.,
Apt. 2C
Middle Village, NY 11379

Members are welcome to attend EEAC Steering Committee meetings, held every 3rd Wednesday of the month. Check our website for that and other events.

www.eeac-nyc.org

EEAC is a 501-(c)3 organization.

Name _____

Title _____

Organizational Affiliation _____

Home Address _____

City _____ State _____ Zip _____

Organization Address _____

City _____ State _____ Zip _____

Home phone _____

Business phone _____



ENVIRONMENTAL EDUCATION ADVISORY COUNCIL

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