TrashMasters!™
SUPER Recyclers

Elementary Division
Brooklyn Borough
Runner-Up

PS 32
Samuel Mills Sprole

2014 GOLDEN APPLE AWARDS

This certificate is awarded with the sincere appreciation and esteem
of a grateful Department and City in recognition of your school's efforts to help make New York City shine.

City of New York
Department of Sanitation
Bureau of Waste Prevention, Reuse and Recycling
nyc.gov/recycle

NYC Recycles

GAA-SRcert 06/14

2014 Golden Apple Awards
Contest Entry Judging Info

(This sheet prepared for judges' use by DSNY BWPRR)

ID Info: **14010**

School: PS 32 Samuel Mills Sprole
Grade Division LM
Borough: K

☑ **Golden Shovel Award contestant**
(for borough Master School Composter)

2014 Project Entries received for:

School Population: total # 425

	Core Group:	Total Participating:
☑ **TrashMasters! Super Recyclers**	15	425

Growing a Recycling Program at PS 32 — Received: 4/30/2014

In the Fall of 2013, PS 32 launched a plan to ramp up its recycling and composting efforts. Parents participated in an online crowd funding webinar and created a campaign that attracted online private contributions of nearly $3,000 and in-kind donations to acquire new recycling containers. So far, the school has placed new bins in its classrooms, offices, hallways, auditorium, playground, and public spaces. In January, students participated in a lively all-school assembly on recycling by The Grand Falloons magicians to announce the new containers.

☐ **TrashMasters! Reduce & Reuse Challenge**

Received:

☐ **TrashMasters! Team Up to Clean Up**

Received:

Prior Year Entries:
13:TU-part, GS-K

Current Prizes
14:SR-ru,TU-C

School Contact Information:

Phone: 718-222-6400
Address: 317 Hoyt St
Brooklyn 11231

Block&Lot: 3004370001
DOE Location: K032
DOE Bldg: K032

REQUIRED for Super Recyclers only:

Custodian: Arthur Cordner

Contest Coordinator: Francine Cuomo

Principal: Deborah Florio

Sustainability Coord: Francine Cuomo

Info Confirmed:

Printed: 6/18/2014

PS 32 TRASH MASTERS! SUPER RECYCLERS COVER PAGE

SCHOOL INFO

- PS 32
- Samuel Mills Sprole School
- 317 Hoyt Street, Brooklyn, NY 11231
- Phone: 718-222-6400
  Fax: 718-222-6405
- Principal: Deborah A. Florio, 718-222-6400, dflorio@schools.nyc.gov
- Contest Coordinator: Francine Cuomo, Business Manager, 718-222-6400, fcuomo@schools.nyc.gov
- Custodian info: Arthur Cordner, CK032@schools.nyc.gov 718-222-6400 x1251
- PS 32 Samuel Mills Sprole School is a Title I elementary school in Carroll Gardens, Brooklyn that serves a diverse population of 425 children in grades pre-k through 5. In addition to serving as a zoned school for a portion of Carroll Gardens that includes part of the NYCHA Gowanus Houses, PS 32 provides special programming that extends its reach beyond its zoned boundaries. It houses an esteemed NEST ASD program for district 15, which is seen as a model for educating high-performing children on the autistic spectrum; an integrated co-teaching program where typically developing students and children with special needs learns side by side; and a new district 15 Gifted & Talented program. Over the past several years, teachers, administrators, and parents at PS 32 have worked together to open a beautiful, welcoming, and technologically advanced new library and to create and maintain an award-winning school garden that is tied to the children's curriculum in every grade.

CONTEST ENTRY INFO

- Borough: BROOKLYN
- Grade Division: ELEMENTARY
- **GROWING A RECYCLING PROGRAM AT PS 32**
- In fall 2013, PS 32 launched a plan to ramp up its recycling and composting efforts to enhance its environmental stewardship, educate students about the role they play as responsible custodians of the Earth, and ensure compliance with New York City recycling laws. Parents participated in an online crowd funding webinar through which they created a fundraising campaign to acquire new recycling containers for the school through online private contributions of nearly $3,000 and in-kind donations. So far, the school has been able to acquire new recycling containers for its classrooms, offices, hallways, auditorium, and playground and public spaces. In January, students participated in a lively all-school assembly by The Grand Falloons on recycling that coincided with the arrival of the new recycling containers. The school plans to further its recycling initiatives by acquiring a 3-bin recycling system for the cafeteria that more clearly illustrates how to separate cafeteria recyclables; and to continue and grow a program through which children help collect and compost organic waste from the cafeteria.

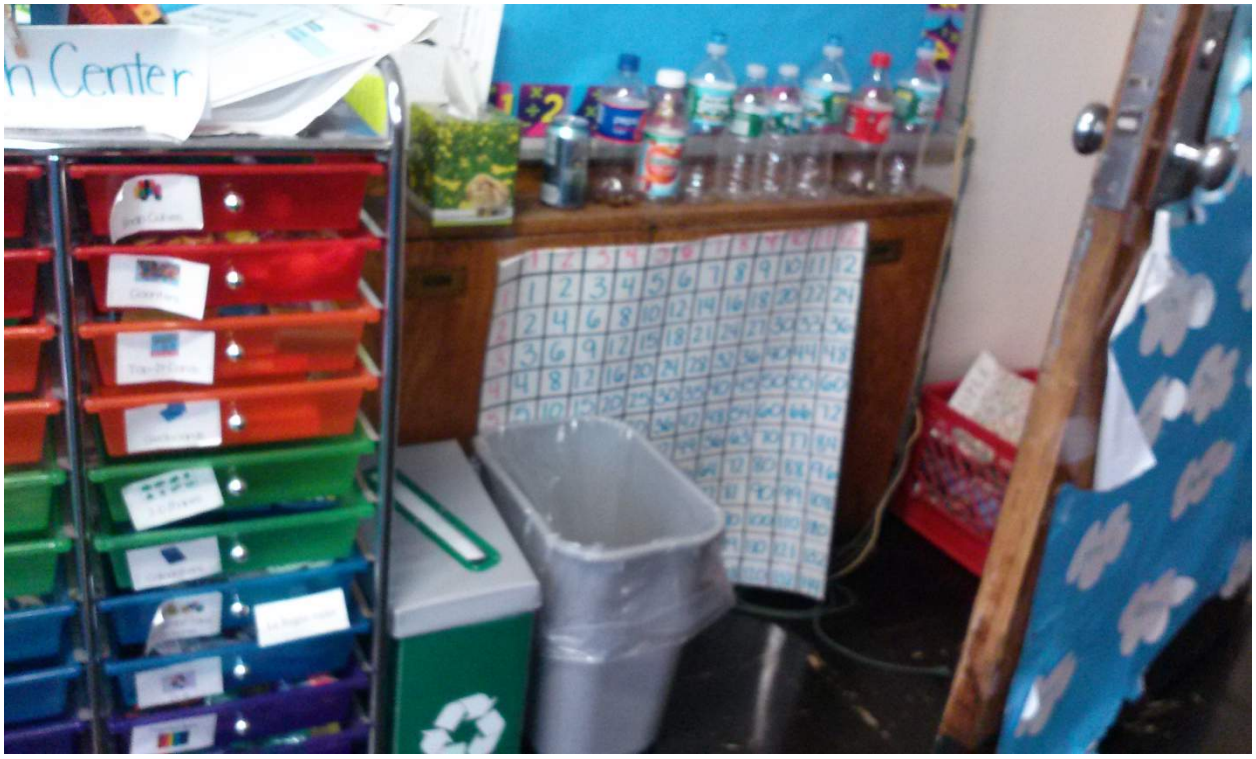
STUDENT INVOLVEMENT

- Student Participation: Core Group 425 for recycling; 15 3rd graders for composting
- Student Participation: Total 425
- School Population: Total 425

RECYCLING AT OUR SCHOOL

Recycling Paper and Cardboard

The most obvious change following our fall 2013 recycling fundraising campaign was the addition of 42 small green recycling bins in every classroom and in staff offices throughout the school. These bins have a slot on top that discourages the throwing out of trash or bottles and are small enough that children can lift them when full. In several of the younger grades one of the kids' daily "jobs" is to help empty the paper recycling into a larger receptacle if full. There is also a new 36-gallon paper-recycling bin in the main office right next to the teacher and staff mailboxes. In the kitchen, cardboard and boxes are broken down by cafeteria staff and placed in clear bags. Our school does not have teacher cafeterias or lounges, and we do not yet have paper recycling in the entrance or hallways. There is a large paper-recycling bin in the gymnasium across from the auditorium, and we can move the bin to the auditorium for meetings or events when paper recycling will be likely. Finally, we were able to secure an in-kind donation from the Trust for Public Land, which renovated our playground years ago, of a large playground-recycling bin for paper recycling, as well as one for metal, plastics, and glass, that exceeded our fundraising budget.



3rd Grade Classroom's Paper Recycling Bin and Gray Trash Bin. This class collects bottles on shelf and then brings them to Cans/Bottles bin in hallway.

Another classroom's paper and recycling bins. The same paper bins are in classrooms and offices throughout the school.

Main office paper recycling bin (with extra small bins for offices/classrooms that need them available on top of mailboxes)

Main office location of paper recycling bin and trash bin

Kitchen cardboard being broken down

Kitchen cardboard bagged for custodian pickup

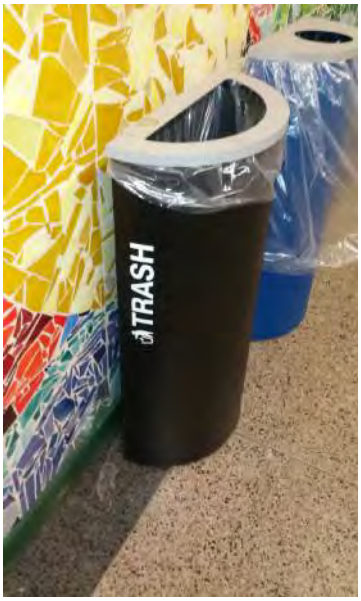
Gym teacher disposing of his paper recycling in the gym’s bin, which stands next to a glass/metal/plastic bin.

Recycling Metal, Glass, Plastic & Cartons

Our school has two main floors—the first floor and the third floor (a co-located school is on the second floor). We have two new bright blue 8-gallon recycling bins for metal and glass that are clearly labeled CANS/BOTTLES in bright white lettering and two new black 8-gallon bins for trash that are clearly labeled TRASH in bright white lettering. Each set of two stands next to each other, one on the first floor at the entrance to the building and near the security desk and one on the third floor. Teachers and students use the third floor bins; visitors, office staff, and teachers and students on the first floor use the first floor bins. Because of their colors and lettering, the bins located alongside each other send a very clear picture about differentiating between what you throw into them. The recycling bin has a round opening for cans and bottles and the trash has a larger opening.

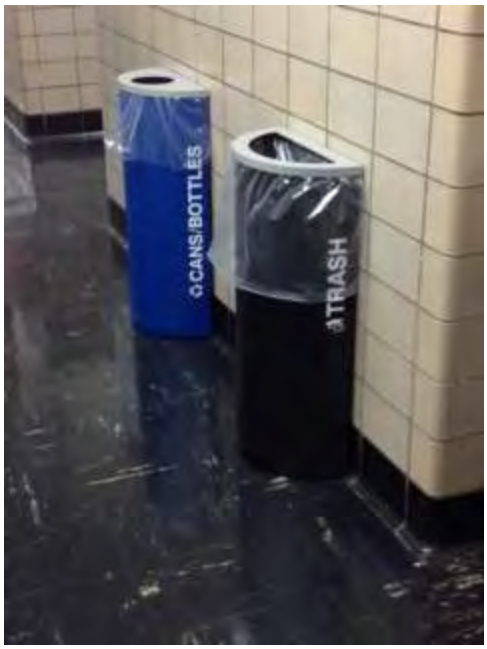
The main office does not have a recycling bin for metal/glass, but the first floor cans/bottles bin is located just in the hallway outside so office staff uses that. A new black 36-gallon bin marked TRASH in large white letters is in the office for non-recyclables. Our school does not have teachers' cafeterias or lounges. Staff who have offices are expected to recycle their glass, metal, or plastic in the hallway bins. The auditorium has a new 36-gallon blue bin for plastic, metal, and glass recycling that has a New York City recycling sticker showing what can be recycled. The gymnasium has a large bin for metal/plastic/glass. The kitchen and the student cafeteria share their metal, glass, and plastic recycling. There is currently a bucket for students to dump liquids in, surrounded by 2 large open garbage pails for trash and two large bins with large round openings in the top for plastics, metal, milk cartons, etc. Lunch aides help students determine what to throw in which can.

Efforts are ongoing across the school to educate children about what can be recycled so they will need less guidance moving forward. Much of the population of PS 32 comes from backgrounds in which recycling is not regularly practiced, and these ideas are new to many students. The school is seeking funding for a new 3-bin system that would more clearly define the different areas through writing or pictures and introduce an organic waste section. Kitchen staff uses the same bins for the cans, plastics, cartons, etc. from the kitchen. All bins use clear bags and are emptied and removed as needed. Finally, we were able to secure an in-kind donation from the Trust for Public Land, which renovated our playground years ago, of a large playground recycling bin for metal, plastics, and glass, as well as one for paper recycling, that exceeded our fundraising budget. Many families use the playground after school and on weekends and make use of this receptacle.



Main entrance/1st floor hallway trash and metal/glass/plastic recycling bins (also used by nearby main office staff)

Main entrance/1st floor hallway trash and metal/glass/plastic recycling bins (also used by nearby main office staff for metal/glass/plastic recycling)

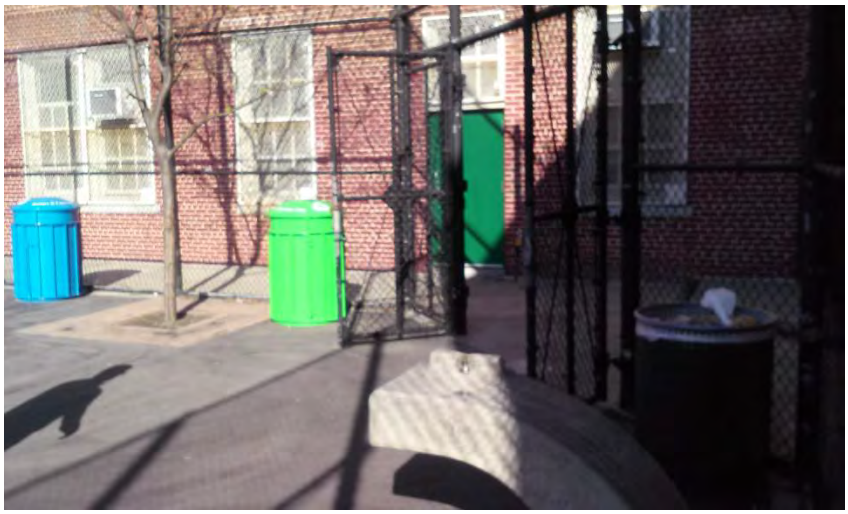


3rd floor hallway trash and metal/plastic/glass recycling bins

Auditorium trash and metal/plastic/glass recycling bins

Cafeteria: liquids are dumped in metal bucket, trash goes in tall open bins;
metal/glass/plastic (including milk containers) go in blue recycling bins with cutouts on top

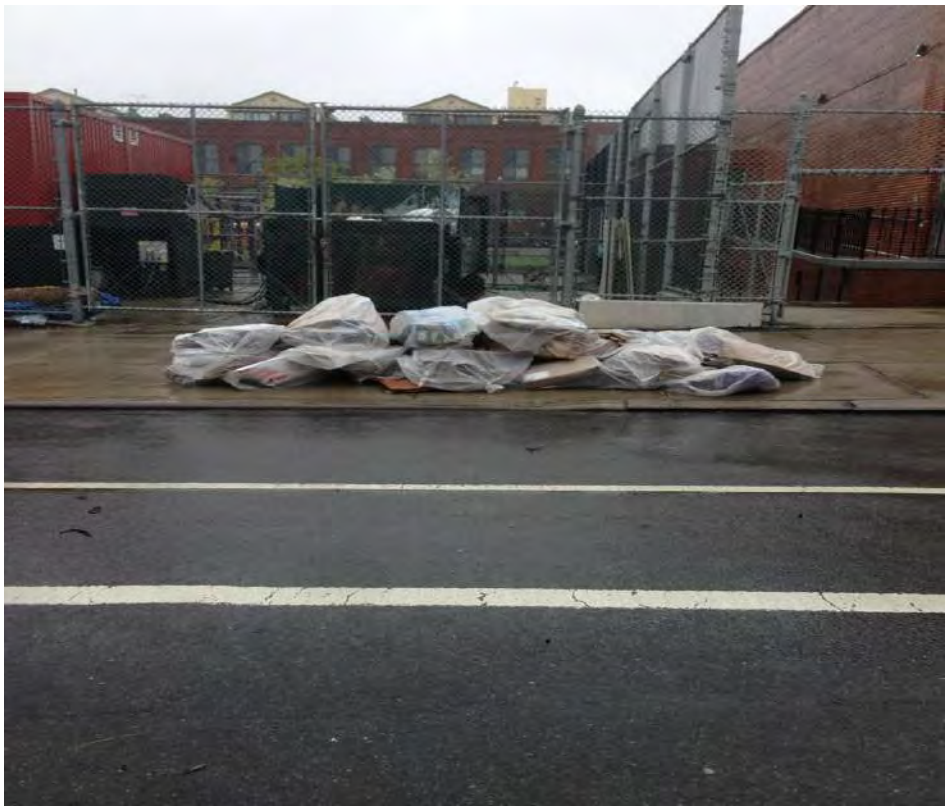
Kitchen metal/glass/plastics go in same bins as cafeteria recycling (shown open now)

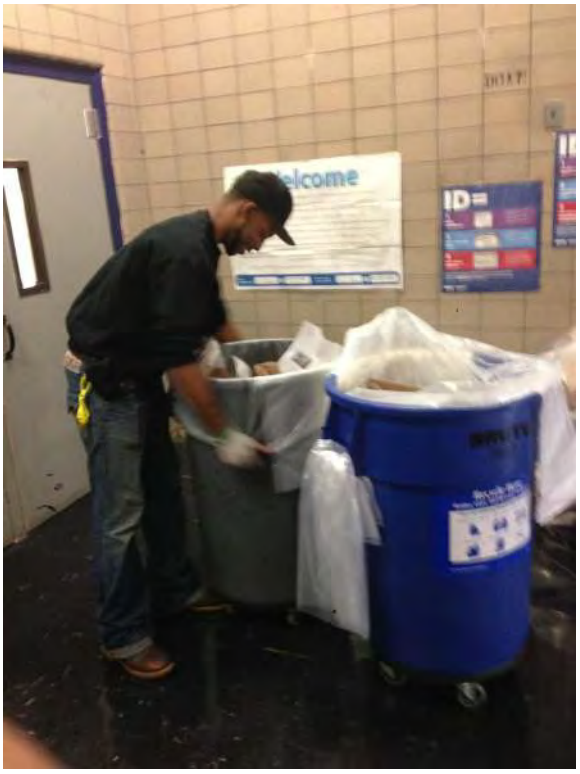


Playground: (from left) metal/plastics/glass bin, paper bin, and trash bin

Recycling Collection and Setout

School custodians separate and bag recyclables and trash in clear plastic bags. Bags are stored near the school dumpster in a locked outdoor location and are placed on the curb according to category on Thursdays, when recycling is picked up locally.




Welcome

Program Implementation

- **Before and after.** Before you implemented these projects, what was your school recycling program like? What changes and improvements were made?

  Before this year's focus on recycling, there were recycling containers at the school but students and staff did not use them consistently, so often recyclables were contaminated and had to be thrown away with the trash. In particular, many classrooms ONLY had one paper-recycling bin (and no trash bin). Therefore often the recycling bins ended up with trash in them and were contaminated and routinely thrown away as trash. The January recycling assembly by The Grand Falloons (http://grandfalloons.com/html/school_shows.html) was very engaging, with student volunteers participating in plate spinning and other lively acts. The recycling assembly, closely followed by the arrival of visually clear and appealing new bins in every classroom and throughout the building, generated a lot of excitement and discussion and helped both educate and motivate the staff and students.

  Until this year we never had glass and metal bins except in the cafeteria, so the presence of these new bins in the auditorium, at the main entrance, on the third floor, and on the playground both sends a message that recycling is important to our school and helps facilitate recycling by staff, visitors, and families who use our playground. While we consider that we have made great strides, we still want to continue to improve the recycling program in the cafeteria and the students' understanding of what can and cannot be recycled. By educating students and having them make decisions about what to recycle as part of their daily routine, we hope these habits will become part of their lives and extend beyond school boundaries. We also want to further decrease our waste and help our school garden by continuing and building upon the organic waste collection and composting program that was started last year by some of our teachers. (See more information below.)

- **Project planning.** Your objectives, and the planning and organization that drove this project.

  As a National Wildlife Federation NYC Eco-school, P.S. 32 was selected in fall 2013 to participate in a program through which parents and school staff would learn online fundraising techniques from IOBY (In Our BackYard), a crowd-resourcing platform for citizen-led neighborhood projects. As part of the project, three parent volunteers participated in a two-month program that included weekly webinar sessions and/or project assistance from IOBY staff. As part of the program, participants created and executed a fundraising campaign centered around a greening project.

  When P.S. 32's parent participants approached the school's Sustainability Coordinator Francine Cuomo to ask if there was a sustainability project for which she would like to raise funds, her answer was instantaneous: she wanted to jump start the school's lackluster recycling program and she thought that purchasing new, sturdy, visually appealing and clear recycling bins for spaces throughout the school would be just the thing to start off the initiative. Together Ms. Cuomo and the three

parents researched the bins that they thought would be most effective and fit into the proposed budget. The group reached out to their personal contacts as well as staff and parents to raise funds for the project, and scaled back the budget when they determined they could not fund all their desires at the current time. They decided that a dynamic recycling assembly for the entire school that coincided with the introduction of the new bins would help publicize the recycling effort and generate enthusiasm, and the principal agreed to fund the assembly. Parents assembled the new paper bins for the classroom in the main entrance hall, where students and staff could see them, and distributed them to classrooms and offices with much excitement and fanfare.

The objectives were to increase both student and staff recycling by increasing awareness of and excitement about recycling and by making it easy to understand and to do.

To see our IOBY fundraising homepage click:

https://ioby.org/project/recycling-ps-32

Press in the National Wildlife Federation's blog about PS32's participation in IOBY fundraising campaign can be seen at:

http://blog.nwf.org/2013/12/ten-nyc-eco-schools-raise-over-43000-with-ioby-2/

(Flier sent home in student backpacks and sent via PTA email to parents.)

Help P.S. 32 Go Green
ioby.org/project/recycling-ps-32

As a National Wildlife Federation NYC Eco-School, P.S. 32 was selected to participate in a fundraising program with IOBY. IOBY is a crowd-resourcing platform for citizen-led neighborhood projects.

The PTA is raising funds to purchase recycling bins for all classrooms and common spaces. The goal is to streamline the process of recycling at our school by having a universal school wide recycling system. We want to continue helping our students develop good environmental stewardship habits by making recycling a part of the school culture at P.S. 32.

How can you help? The first way is to donate directly to our project by donating online at **ioby.org/project/recycling-ps-32** or by sending in money to your child's teacher. The second way is to spread the word to your family, friends, and neighbors so that they can donate.

As a bonus, any contributions made online on **Monday, November 18,** or delivered to teachers by Friday, November 15, may be eligible for matching funds from an IOBY donor.

Any questions? Jenny Sergeant at Treasurer@ps32.org

Eco-Schools USA
NATIONAL WILDLIFE FEDERATION®

ioby

- **Student involvement.** All student efforts to plan and implement your school recycling program. Include activities conducted by classrooms, cluster, grade, school wide, team, club, or afterschool program.

All students were included in this project to the extent that they are all expected to recycle, they all have new bins, and they all attended the recycling kick-off assembly. We also have a third grade class that is participating in further reducing the school's waste by collecting organic waste from the cafeteria during the 1st and 3rd grade lunch period. (See more information in the composting section below.) Other classes are also actively involved in the school's composting program, especially the second grade, which is participating in a rotating enrichment cluster focusing on soil.

Teachers included lessons on recycling in their classrooms. In one first grade class the teacher tied recycling with lessons on responsibility to our community and the importance of keeping a community clean. Through read alouds, group discussions, and independent reading, the first graders discussed what pollution is, how recycling helps, what each of us can do in our daily lives, and what it means to make a difference in our community.

- **Promotion.** Efforts to promote this program, such as announcements, memos, flyers, posters, letters, web pages, skits, songs, assembly programs, media coverage, or other special events.

https://ioby.org/project/recycling-ps-32 was one of the primary ways in which we promoted this project internally. This link and related information was emailed to parent contacts, sent via PTA email and posted on the school's website. Two fliers were sent home to the entire school community, as well as information on the school-wide recycling assembly.

- **Collaboration.** Any corroboration with other schools, professionals, businesses, or community organizations on this project. Did you solicit donations or help?

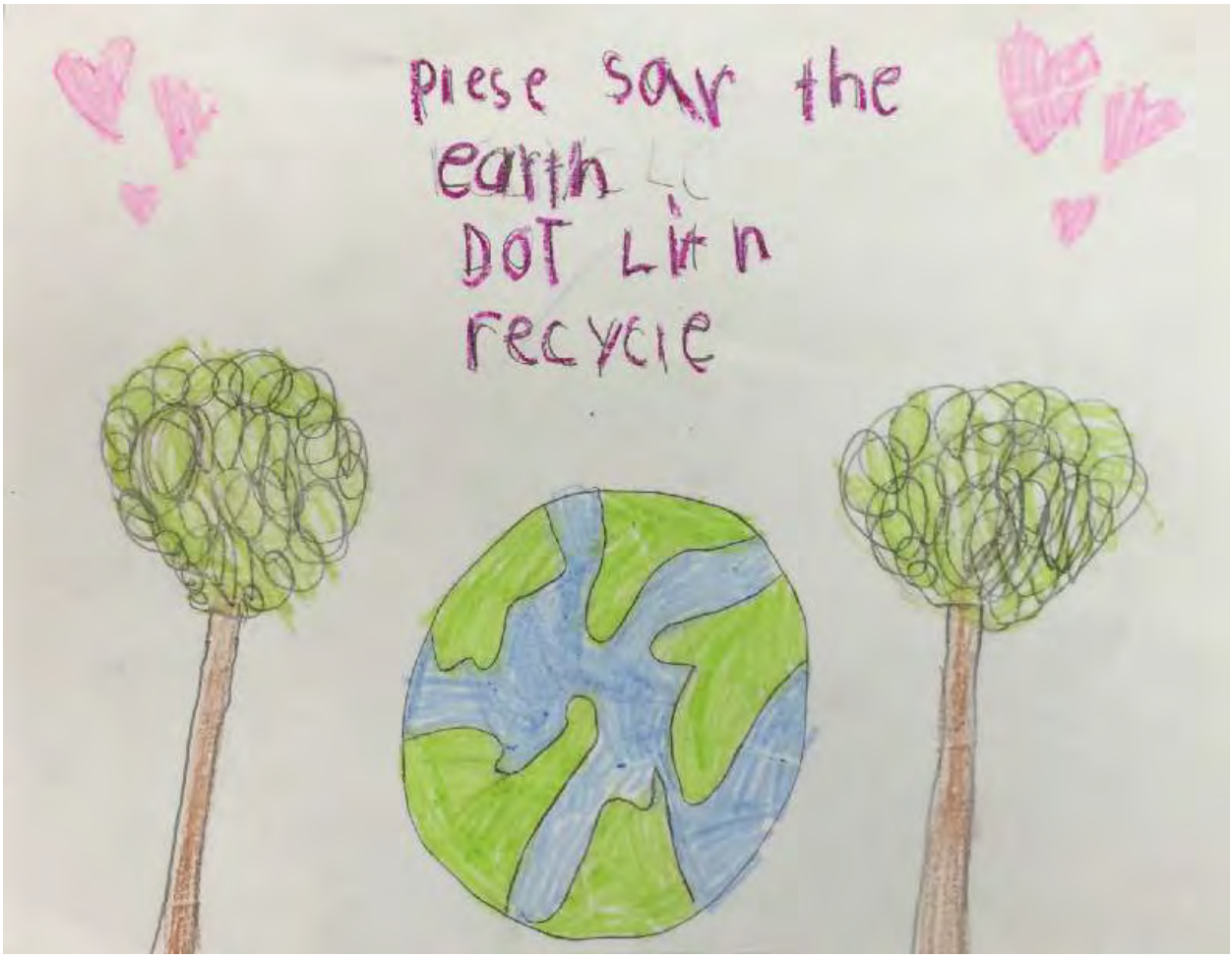
As part of the IOBY project, the group involved reached out to their personal contacts, staff, and parents publicizing its efforts and seeking funds. They also asked Assemblywoman Joan Millman for help. While she was not able to help with this project, she helped identify funding for capital projects and has passed along information on sustainability grants the school is pursuing. P.S. 32 parents also reached out to the Trust for Public Land, which renovated its playground several years ago, and were able to secure an in-kind donation of trash and recycling bins for the playground which exceeded our campaign budget. The school's composting program has collaborated with many non-profits, including most recently the Brooklyn Botanical Garden, who provided labor, expertise, and supplies for the building of a 3-bin composting station.

- **Educational components.** Include learning standards met, lesson plans, and exemplary samples of student work.

Teachers throughout PS 32 find creative and engaging ways of tying the importance of recycling into the curriculum for their grades. For example, a 1st grade teacher last year who was studying water and New York City with her class allowed the class to follow

their interest in pollution and how they could make a difference. The class decided to undertake a poster campaign in which they hung posters throughout the school warning about water pollution and encouraging actions students and staff could take to reduce it. Recycling was prominently featured in these posters, with dramatic drawings of cans in bodies of water and wildlife being hurt. This year, that teacher's water study took a different course, so she tied recycling into the class's study of community and the importance of keeping the community clean. They discussed the effects pollution has on the Earth.

Another example is a kindergarten teacher, who this year is tying her persuasive writing unit to a study of *The Lorax*. The children's discussion focused on the importance of environmental stewardship and making decisions that benefit the earth. The teacher ties recycling into this discussion as an example of how the students can and do make good decisions in their classroom and daily life. Many of the persuasive letters generated by the students include appeals for recycling, as does this related poster they made.



Project Analysis. Briefly describe and document:

- **What worked?** What were the most successful aspects of this project?

  Our new, well-marked and well-situated bins seem to work well, generate excitement and offer the kick-start needed for the project. Parents and students are excited, and recycling seems to be much more effective, especially in terms of the classroom recycling of paper.

- **What didn't work?** What were the least successful aspects of this project?

  The IOBY group thought they might be able to raise funds from outside the school community. While there was a private matching grant, which was very helpful, the project did not attract other funding from outside the school and the Trust for Public Land. Future crowd-sourcing projects will need to analyze what could generate more publicity or interest.

  While the classroom paper recycling seems to be understood well and have improved dramatically with the addition of the new bins, cafeteria recycling is still hard for the students to understand. We think that by adding pictures or graphics and/or developing slogans and routines collaboratively with the children, we will be able to improve upon that area in the future.

- **Applicability to other schools.** What advice would you give to other schools with similar populations who want to replicate your project?

Having standard, recognizable, clearly labeled containers for recycling throughout the school seems to be very useful, as well as holding an assembly or other sort of public forum to generate excitement and get everyone's attention. We are pleased with the results we have seen so quickly, working with a population of students who are largely coming from homes in which issues such as preservation, recycling and environmental stewardship are not routinely emphasized, and would be happy to work with similar schools to design programs that will work for similar populations.

- **Measuring success.** Describe how you measured the success of your project. Explain any impact on the students or community.

We plan to measure the success of our recycling efforts in several ways. First, we have asked the custodial staff to provide us with an estimate over time of whether the amount of recyclables we collect and leave out for NYC pickup increases. Secondly, we have asked the teachers to report anecdotally the students' response to the new recycling bins and efforts and the January assembly (which was extremely popular). We are also asking both teachers and lunch aides to try to assess whether students' knowledge of the necessity of recycling and what to recycle has increased since January. When we determine and implement a new system for the cafeteria, we will also ask lunch staff to see if that seems to help kids correctly recycle more easily. Finally, we are considering using a brief recycling "quiz" in some capacity, though we haven't yet decided whether it would be school-wide or with some smaller group. We are considering administering

the quiz in May and then later in June to see if "scores" improve over time. We would also publicize the quiz to make it fun, with some sort of activities or prizes to go along with the questions.

- **Future plans.** How would these prize funds be used to further enhance your school recycling program, waste prevention initiatives, or beautification projects?

We are still determining the best system for the cafeteria, whether it is our current setup with a new system of photos or labeling, or a different system of bins. Funds earned from this prize could help fund the remaining needs in the cafeteria. We have submitted a grant to CCNY for additional recycling and composting materials, and we could use a portion of this funding for those needs as well. Other options are to help support the budget for our school garden or to help fund three new afterschool garden and composting clubs that the school is offering this spring for the first time, and hopes to continue next fall.

SCHOOL COMPOSTING PROGRAMS

- **Describe your school's indoor and/or outdoor composting efforts.**

Since our garden's inception, PS32 has been committed to composting, not only to help sustain our raised beds, but to deepen our 2nd grade soil curriculum. For these efforts, we were thrilled to be awarded the Golden Shovel Award in 2013, and equally pleased to have an opportunity to describe our continued efforts.

Over the course of 3 years, we have been able to successfully incorporate composting into the 2nd graders school year by having small groups of students go to the composting area each week to chop and turn our compost. This has given our students experiential knowledge of soil as they see the cycle of growing, chopping, decomposing and the nutritious soil material left behind. As with other years, we had a sifting and worm discovery area at our Garden Day to broaden the awareness of our composting project to all members of our community. We also did a leaf drive in the fall and parents brought in over 30 bags of leaves!

Last fall, the biggest development for our program was the donation of labor and supplies by Brooklyn Botanical Garden for the building of a 3-bin composting system that has allowed us to move from our three Earth Machine Compost Bins and has increased our capacity tremendously. PS 32 teacher and master composter Alison McKeown has taken the lead on this project. Her goal is to bring food scraps from our school cafeteria every day, and we are starting with cafeteria scraps being composed 1-2 days a week. Ms. McKeown is a 3rd grade teacher this year, but, building on the student's 2nd grade experience in composting, she has assembled a team of students who help sort the scraps in the cafeteria and bring them out to the composting area to chop and add to the bin. To help supply the browns for these projects, the Garden Committee purchased a leaf shredder to prepare all the leaves brought in through our leaf drive. A storage area was built, complete with a water-harvesting roof to capture water needed to wet the compost. Volunteer parents

managed to shred all the leaves so they would fit! We also received donations of sawdust from a parent.

Building the 3-bin composting station with PS32 and BBG volunteers

New 3-bin composting station completed

Besides introducing a 3-bin system, we also established an in-bed lasagna system. We had a bed that was fairly shallow, so we added height to the sides and laid down a layer of wet cardboard on the existing soil. From there we added alternating layers of fruit and veggie scraps provided by the Park Slope Food Coop and layers of browns collected by parents. We are eager to test our success when the 3rd graders plant the bed with natives in the coming weeks.

Along with the 2nd grade curriculum and 3rd grade composting groups, we are trying to broaden our audience. Our 2nd grade teacher, Ms. Leman, has conceived of a composting club for 2nd-5th graders that is funded by our PTA. The students, selected by teachers because of their interest in gardening, will work weekly with Ms. Leman to deepen their understanding of composting and its positive role in our garden. Given our larger capacity than past years, parents are being asked to bring in and chop their compost on Friday mornings at our Early Bird Garden Club. This allows students in any grade to participate regularly in composting by connecting the waste they produce at home to what goes into our bins. Students who don't bring compost from home have the opportunity to chop any compost from the cafeteria and other families who dropped compost off earlier in the week, but which classes did not have time to accommodate. Students love the action of chopping and feel proud of their personal contribution to the ongoing project.

Other efforts are underway inside. A 2nd grade class has had an indoor worm bin, though poor ventilation caused the worms to die. This teacher is collaborating with a 1st grade teacher and our parent Garden Coordinator to build an outdoor bench with a worm bin under the seat later this spring. A 3rd grade class did a small experiment in the fall to test whether or not a plastic bag and other non-compostable materials would break down similarly to the organic materials added to a see-through bin of compost.

- **Describe collaborations with outside organizations.**

Our biggest collaboration, as described above, is with Brooklyn Botanical Garden. Their donation of time, materials and knowledge has benefited our expanding compost program tremendously. In the past, we were unable to generate enough compost to amend the soil in each of our beds. Thankfully, Gowanus Canal Conservancy (GCC) donated more than 500 lbs. of compost last fall that we used to prepare our native bed that will be planted this spring by 3rd graders. Also, in order to immediately utilize the added capacity of our 3 bins, a parent who is a Park Slope Food Coop member brought several buckets of donated food scraps to chop and add to our bins.

- **Document compost education efforts; show lesson plans, standards met, and students' work.**

PS 32's composting program works dovetails well with the 2nd grade curriculum's focus on soil. Given the abundance of curricula on the internet, our 2nd graders teachers have had a lot from which to choose. Using information and curricula from Cornell Composting:

Composting in Schools (http://cwmi.css.cornell.edu/TrashGoesToSchool/Discover.html), teachers have led students to discover the various organisms involved in composting, particularly the decomposers prevalent in compost. Our teachers have also followed curricula including http://classroom.hiddenvilla.org/curriculum/curriculum-for-your-school-garden/second-grade/red-worms-rock to study the worms that are in the classroom composting bins. Both of these activities are designed for students to touch and observe compost, soil, organisms and worms. Students also actively participate in every step of the process including chopping, layering, aerating and sifting so that they can ultimately mix their own composts into the beds at PS32.

- **Explain if and how these composting efforts will be maintained on an ongoing basis.**

PS32 has a strong commitment to our garden and our composting program. With one Master Composter on Staff, other teachers who have taken courses, and knowledgeable parents, we feel certain the composting is here to stay! We are specifically encouraging parents to participate in the program so that we can create an educated community to support our students as they learn. We are trying to recruit parents to join a Composting sub-committee of our Garden Committee that will communicate with the teachers and support them when scraps need chopping or browns are running low.

- **Could your school's composting efforts be replicated by other schools with similar populations? Please explain.**

Other schools could replicate our composting system, recognizing that getting to a 3- bin system is a long-term project. Our school began with a single Earth Machine that was used by 2nd grade. Parents and teachers brought in food scraps and as our system took hold, we were able to expand to 3 Earth Machine compost bins. The willingness of staff to complete education on composting has deepened the ability of our teachers to make connections to the curriculum and that has increased enthusiasm for composting by their colleagues, students and parents. The expansion to a 3-bin system was able to be implemented after composting was integrated into the school culture and a strong partnership was built between the Garden Committee and interested teachers so that volunteers could be enlisted to gather browns and food scraps and cover any manual work teachers are unable to complete during class time. If a school is unsure of the ability of its community members to commit time, a worm bin could also be an excellent way to introduce the concept of composting while generating enthusiasm from the students that will hopefully pull in the needed teamwork for a larger program.

3rd grade class's compost collection bins (easy to transport organic waste to outdoor compost bins)

3rd grade class indoor mini composting experiment (demonstrating what does and does not break down)

Leaves being collected by 3rd grade class for composting