

TrashMasters!™
REDUCE & REUSE
CHALLENGE



Intermediate Division
Brooklyn Borough
& Citywide Winner

Brooklyn Urban
Garden School (BUGS)

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 Compost Project
GOLDEN SHOVEL



Brooklyn Borough
Winner

Brooklyn Urban
Garden School (BUGS)

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NYC
Recycles

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

Created and funded since 1993 by the Bureau of Waste Prevention, Reuse and Recycling, NYC Compost Project provides compost outreach and education to NYC residents, community groups, and landscapers in all five boroughs.

NYC
Composts

2014 Golden Apple Awards Contest Entry Judging Info

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



ID Info: 14003
School: Brooklyn Urban Garden School (BUGS)
Grade Division: IS
Borough: K

Golden Shovel Award contestant
(for borough Master School Composter)

2014 Project Entries received for:

School Population: total # 129

Core Group: **Total Participating:**

TrashMasters! Super Recyclers

Received:

TrashMasters! Reduce & Reuse Challenge

129

129

Service Learning: Reducing Materials Use & Solid Waste

Received: 5/1/2014

Students formed several committees dedicated to this waste reduction service learning project: the Social Media Committee posted tips on how to reduce waste; the Composting/Recycling Committee created a 4-category sorting system for the cafeteria, including food waste; the Litterless Committee focused on increasing paper recycling; and the Planter Building Committee reused materials to create planters for raising seedlings in the garden. Student art, literacy, and science projects included: designing and creating murals for their hallways that sent a message about caring for their commons; creating sculptures from recycled materials; writing persuasive letters to their families about the importance of recycling, composting, and energy conservation; and creating a comic book about energy conservation. By pairing their clearly labeled separation system

TrashMasters! Team Up to Clean Up

Received:

Prior Year Entries:

first entry

Current Prizes

14:RR-C;GS-K

School Contact Information:

Phone: 718-280-9556

Address: 500 19 ST

BROOKLYN

11215

Block&Lot: 3008890001

DOE Location: K758

DOE Bldg: KBNU

Contest Coordinator:

Rheanna Abbott

Principal:

Linda Rosenbury

Sustainability Coord:

Sashti Balasundaram <sashti.balasan

REQUIRED for Super Recyclers only:

Custodian:

Info Confirmed: 6/11/2014

Printed: 6/25/2014

BROOKLYN URBAN GARDEN CHARTER SCHOOL



School Information:

Brooklyn Urban Garden Charter School (BUGS)

500 19th Street, Brooklyn, NY 11215

(P) 212-437-8318 (F)

Principal: Linda Rosenbury, 212-437-8318,

Linda.Rosenbury@BUGSBrooklyn.org

Contest Coordinator: Rheanna Abbott, Visual Arts and

Sustainability Teacher, 212-437-8318,

Rheanna.Abbott@BUGSBrooklyn.org

We are BUGS!

BUGS is a new public charter middle school in Brooklyn's Community District 15, serving the Gowanus, Red Hook, Sunset Park, Kensington, Carroll Gardens, and Park Slope neighborhoods.

The BUGS curriculum is centered around sustainability and urban gardening. We work together as a school to embody the concept of sustainability.



BROOKLYN URBAN GARDEN CHARTER SCHOOL



Contest Entry Information:

Borough: Brooklyn

Grade Division: Intermediate

Contest Entry Title:

BUGS Trimester 3: Service Learning Project

Contest Entry Summary:

Each trimester BUGS focuses on an essential question relating to how we can improve the sustainability of our school, our neighborhoods, and our world. During trimester two, BUGS students focused on working together to care for the commons as evidenced by a reduction in solid waste production and materials use. As a school, we worked in our academic classes and in small group committees in order to learn about how we could lessen our impact on the earth by reducing our energy consumption and solid waste production.



Implementation



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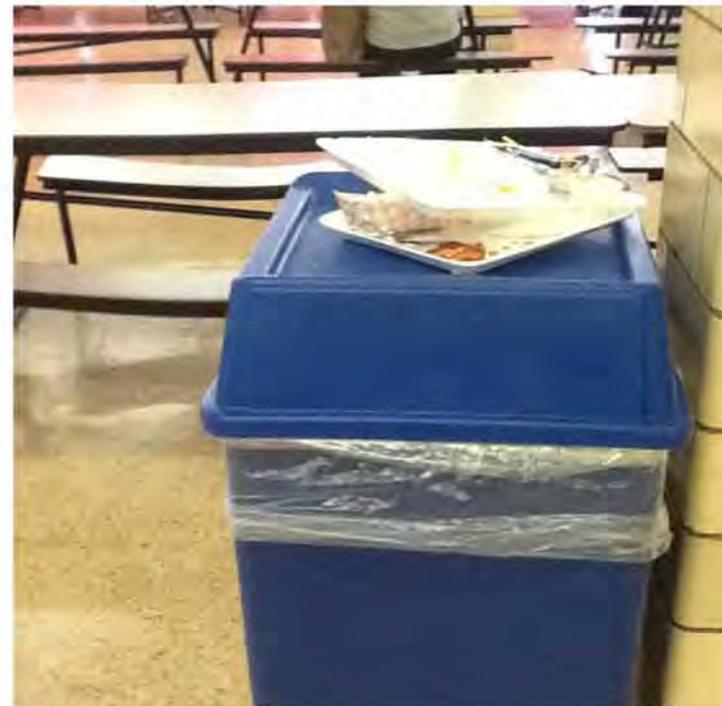
Why this?

BUGS students completed an interdisciplinary service learning project with the goal of working together to care for the commons as evidenced by a reduction in solid waste production and materials used. The school chose this goal based on our initiatives as a sustainability focused school, and after observing the current state of waste management in our building, which we share with another school.

In the cafeteria, all food waste and recyclable materials were being collected in black bags. Students weren't aware of how to sort the waste, so it was all heading to landfills. At the end of the day our hallways and classrooms were filled with paper litter and abandoned materials.

Teachers would often enter their classrooms in the mornings to find that the lights had been left

on all night. We knew as a school that we could reduce our waste. We set up a multi-tiered approach, in order to meet our goal of reducing solid waste production and energy use.





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What did you do?

In order to meet our goal of reducing our solid waste production, we set up our service learning project to support our initiative both inside and outside of the classroom. Students would study sustainability concepts in the classroom, and use their knowledge to support change in our school community, and in their homes. Additionally, students broke into committees which handled more specific initiatives in our school.

Please see the break down on the next page of the specific content covered in each subject, and the individual initiatives of each committee.





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Service Learning Project: Waste Reduction

Classroom Initiatives

Science
Personal
Waste
Study

Math
Data
Collection:
Classroom
Materials
Waste

Art
Persuasive
Mural
Design and
Trash Art

ELA
Writing a
Persuasive
Letter

Committees

Litterless
Developed
classroom
recycling
systems

Composting
Developed a
waste
separation
system in
cafeteria

Energy
Wrote a comic
book to teach
about energy
conservation

Social Media
Promoted our
efforts through
Twitter and
Instagram

Planter Building
Created
planters using
recycled
materials

Archivist
Recorded the
school's efforts
through
interviews,
photos, and video



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Project Planning

BUGS is housed inside of Bishop Ford High School. In order to begin the process of reducing our waste as a school, we had to identify what recycling was already happening in the school. A team of two students and two BUGS staff members met with a representative from the Department of Sanitation and the Director of Operations at Bishop Ford High School. Together we discussed how the two schools were disposing of waste, and made plans to make changes to the process in order to decrease our environmental impact.



They decided to make the following changes to the cafeteria:

- To mark the recycling and trash bins more clearly
- Work with custodians to use the appropriate bags for recyclables
- Use 5-gallon buckets to collect liquid waste
- Investigate the possibility of having compost pick up

And these changes to the hallways and classrooms:

- Set up all classrooms with paper recycling bins
- Pair trash cans with recycling bins with clear labels in the hallways



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Student Involvement

Every BUGS student was involved in studying our community's waste production in the classroom. They looked at the problem from many angles, and in the end wrote a persuasive letter to their families about waste reduction. Students wrote about what they felt would most impact their households.

BUGS students joined committees based on their interests. Each committee had a vastly different focus, but gave students opportunities to take on roles that they were interested in in order to support the overall initiative. For example some students took on leadership roles in the Composting/Recycling committee by leading the school in how to sort their waste.





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Promotion

Our Social Media Committee took charge of the promotion of our project. They tweeted and posted on Instagram live during our trimester celebration to an auditorium of students, parents, and community members. Students learned the art of crafting a tweet in their committee, and they utilized these skills to show off all of the awesome work that had been happening over the trimester.





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Collaboration

The BUGS classes and committees took many opportunities to collaborate with the Bishop Ford High School leadership in order to achieve our goals for the building. Additionally, we called on help from experts from around the city.

Over 5 days in January, we traveled up to Long Island City to take tours of Materials for the Arts. MFTA gave us an informative tour that helped us realize our capacity to make useful things out of reused materials. MFTA teachers taught us about the amount of waste that most schools produce every year. We learned about the 3 R's (Reduce, Reuse, Recycle), and how these tactics could help us lessen our waste impact on the world.

Back at school, we met reused materials artist, Michael Albert who spoke to us about using trash to make art. Two representatives from the New York City Department of Transportation spoke to us about the public arts initiatives in New York City. After we design our mural, we invited local muralist, MacKenzie Younger to lead us in producing our mural.





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INITIATIVES IN ART Honoring our Commons!

When we returned to BUGS, we were ready to target the reduction of litter in our hallways. We wanted to decrease litter in order to help honor our commons, and create a nicer place where we could all go to school.

We studied the work of muralists from around the world, and design and created a mural in our hallway. All BUGS students participated in this project as part of their Studio class.

The mural serves as the promotion of our reduction efforts, and was on view to parents during our trimester celebration.

We brought in MacKenzie Younger, and muralist and educator, who helped lead small groups of students in the production of the mural.





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INITIATIVES IN ART TRASH SCULPTURES!

In Studio, we studied the work of artists who use trash to make art! We looked at the work of Vik Muniz, Beth Williams Garrett, Lisa Hoke, Paul Villinski, and El Anatsui. Then we created sculptures out of materials from home and school that we would normally throw away. We critiqued each other's work, and displayed our creations at our Trimester Celebration.



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INITIATIVES IN ELA

In ELA, we wrote persuasive letters to our families. In the letters, we shared some of the things we had learned about waste and energy reduction, and brainstormed ways to reduce waste at home. We chose to focus on recycling, composting, or energy conservation in our letters.

Dear Mom, Dad, Stephon, and Amy,

It's Steven. A 6th grader in BUGS in the beginning of Trimester 3. At BUGS we've been learning about sustainability, which is the ability to support life. I care about our Earth and want it to survive for many more years, which brings up the topic of Energy! I care about energy saving because as you might of known the earth's fossil fuel supply is going low and if we don't take action this will get worse! Think about not watching TV, using your phone or being able to use an electronic device. I want you guys to help reduce our energy waste. Like turning off lights. If this happens our world can be supplied for longer.

First, energy consumption is a huge problem that's still growing! According to do-something.org "residential and commercial buildings, transportation, industries, and electric powered generator's consume the most energy." This shows that energy needs to be used less often. Another example from the same website say's "coal emits sulfur dioxide that can cause acid rain, global warming, health issues, etc." If was can't stop using coals we'll have worldwide problems! In conclusion, in 2011 the U.S. used 97.5 quadrillion British Thermal Units (BTU)! This shows that we are using too much oil/energy and need to find better resources!

Next, I've noticed that we need to set some goals for our energy consumption. Our first goal should be making a chart stating how much we can be on a certain application. Second, is when we are done to make sure the appliance is off and no electricity is getting to it (example: turn off the computer not the monitor). Lastly, lets try to maintain a habit to turn off lights, unplug microwaves, turn off computers and TVs. In conclusion, remember that we don't have an unlimited source of energy, so conserve it for longer lasting.

I want you to remember why this is important, it's because we can't keep on using fossil fuel for energy, it's like a gas-taking filling up cars, someday it'll run out and there's no refill. You can help it last by monitoring the energy we use and stay sustainable. What would it feel like if you can't drive, play games, or watch TV. Let's save our energy!

Sincerely,

Steven



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ENERGY COMMITTEE

The Adventures of Bob the BUG

We created a committee to study the different ways we can harness energy. We considered what types of energy we use at school, and developed tactics for using only as much as we really needed. After, we brainstormed ways of communicating what we had learned to other members of our community, so they too could help save energy too. We created a comic book called "Bob the Bug's Energy Adventures", and illustrated Bob exploring the world of energy conservation.





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COMPOSTING/RECYCLING COMMITTEE

We began learning about composting during Science. We learned about the different types of compost, and started a vermi-compost system which lives in our Science lab.

After learning about composting in Science, and the three R's on our MFTA trip, we noticed how much we were wasting in our cafeteria. We were throwing away recyclable food containers, food waste, and liquid waste. We realized that if we separated our waste we could reduce it!

We formed a compost committee, who spearheaded sorting waste into 4 categories, food waste, liquid waste, recyclables, and garbage. We weighed the waste after each lunch period.





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Litterless Committee

The Litterless Committee analyzed the need for paper recycling receptacles in the classrooms. Students researched recycling guidelines, posted information for students, and created bins for classrooms to make recycling easier.





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Social Media Committee

The Social Media Committee used Twitter and Instagram to keep the public informed about all of the ways that we were working to reduce our waste at BUGS.

The screenshot shows the Twitter profile page for BkUrbanGardenSchool (@BUGSchoolBK). The profile banner features a close-up of green leaves with a small logo that reads 'BROOKLYN URBAN GARDEN SCHOOL'. The bio states: 'We're Brooklyn Urban Garden School. A new progressive school that is going to build a community garden! We have a diverse group of students and great teachers! Brooklyn, NY · bugsbrooklyn.squarespace.com'. The profile statistics are: 46 Tweets, 73 Following, and 24 Followers. A 'Follow' button is visible. The 'Tweets' section shows two recent tweets: one from April 22 about Happy Earth Day and indoor gardening tips, and another from April 8 thanking Chef Christopher Motta from @applewoodny.

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Planter Building Committee

The Planter Building Committee focused on reusing materials to create planters to raise seedlings for our garden. Students used soda bottles to create terrariums.

They also used balloons, recycled newspaper, and paper mache to build hanging planters for the science lab.



Project Analysis



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What worked?

The initiative to divert waste from the garbage cans in the cafeteria was the most measurably successful aspect of the service learning project. The set up of the waste separation system involved making signage, assigning student leaders to help students understand where to put different kinds of waste, and coordinating how this separated waste would be disposed of.

Before they implemented their system Ms. Laura and her committee measured the weight of the recycling bag and the garbage bag after a lunch period (Note: at this time the recycling was being disposed of in the same way as the garbage). On average, we

were producing 31 pounds of garbage a day. After implementing the separation system, the group was able to measure the garbage, recycling, liquid waste (which was disposed of in the toilet), and food waste. On average, we produced just 9.68 pounds of garbage in the cafeteria each day, which means that we went from diverting an average of 0% of our waste from landfills, to 84.27%!





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Waste Diversion in Pounds

Start of
sorting
system



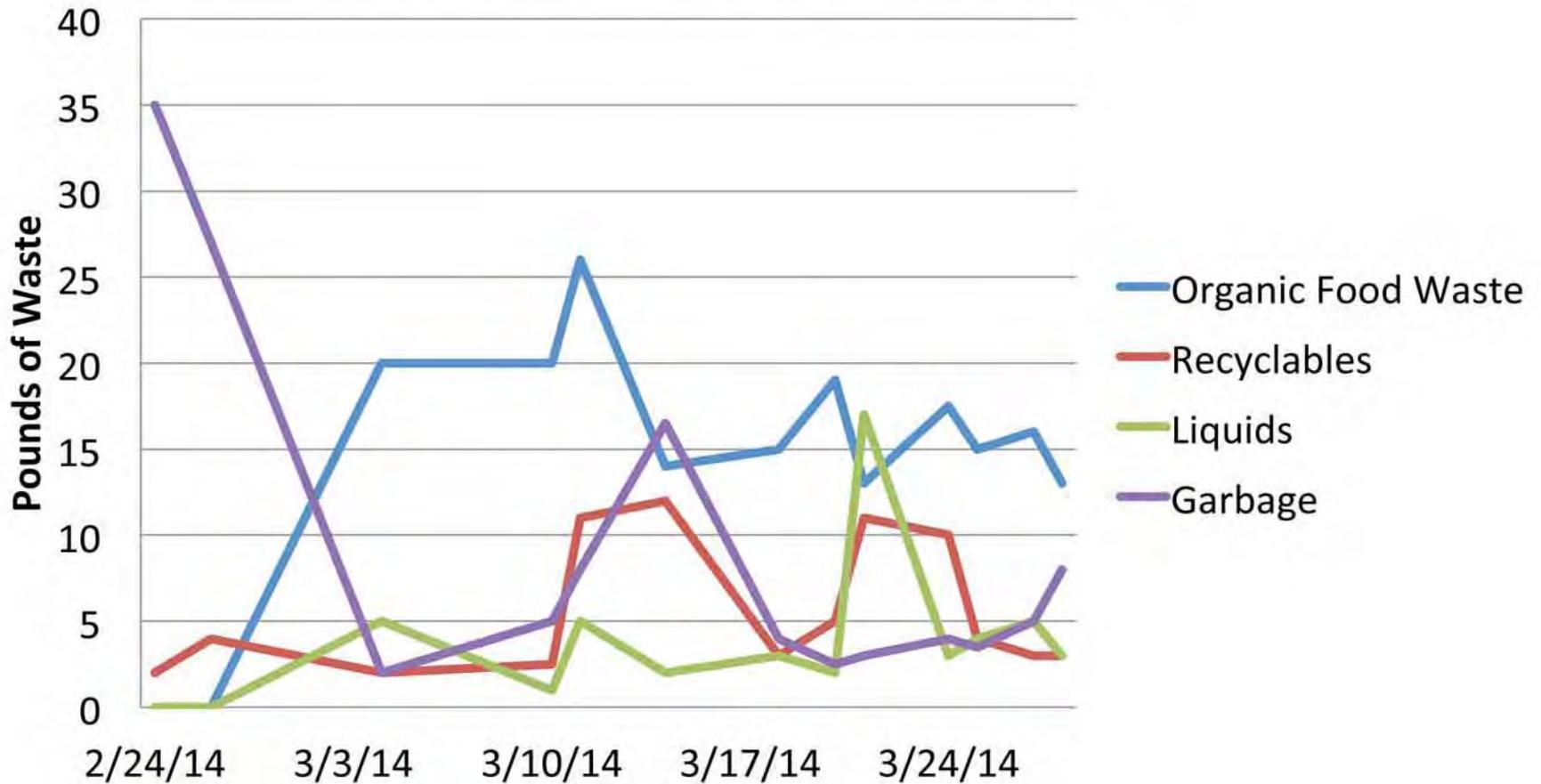
	Organic Food Waste	Recyclables	Liquids	Garbage
2/24/14	0		2	0 35
2/26/14	0		4	0 27
3/4/14	20		2	5 2
3/10/14	20		2.5	1 5
3/11/14	26		11	5 8
3/14/14	14		12	2 16.5
3/18/14	15		3	3 4
3/20/14	19		5	2 2.5
3/21/14	13		11	17 3
3/24/14	17.5		10	3 4
3/25/14	15		4	4 3.5
3/27/14	16		3	5 5
3/28/14	13		3	3 8



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Pounds of Waste Produced During Lunch





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What didn't work?

While the initiatives in all of the classes and committees were helpful in supporting a change in the mentality toward waste at BUGS, we were not able to collect enough viable data to measure all of our successes.

An example of this is the Litterless Committee's progress in reducing litter in our school. We did not measure the quantity of litter that was left in our hallways and classrooms at the end of the day, so it was impossible to measure our impact on our school. However, there is a clear visible difference in the state of our hallways and classrooms!





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Applicability to other schools

The service learning project structure has made us able to tackle this problem from multiple angles. In classes, we used the Education for Sustainability Standards to support the development of lessons for this project, which would be possible at any school, regardless of their level of focus on sustainability. Additionally, students thrived in their committees because they had enough background knowledge from their core subjects, which created student buy-in.

If other schools are able to take this multi-tiered approach to problem solving, they should consider having opportunities for student choice so that they can get behind the project, and feel true ownership for the work that they completed.

Additionally, we recommend utilizing expert resources like Materials for the Arts, New York City Department of Sanitation, and the New York City Department of Transportation.





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Measuring success

We measured the success of our service learning project from various angles. We had the hard data about the amount of waste which we diverted from the landfill, but we also measured success based on the student embodiment of the value of protecting the commons. While there is still a long way to go, our students have begun to take responsibility for themselves and each other, by taking on cleaning rolls in the classrooms and cafeteria, correcting each other when they make sorting mistakes, and giving each other valuable feedback on our methods of persuading our community to waste less.

Our students were assessed on their the persuasive letters that they wrote in ELA, based on their embodiment of sustainability, and success in creating and defending an argument. Their letters were sent home to their families, where they will hopefully induce a similar change to what we saw happen hear at BUGS.



BROOKLYN URBAN GARDEN CHARTER SCHOOL



Future plans

We look forward to continuing our journey toward sustainability here at BUGS, and a big part of this is continue to rework our recycling and composting programs to fit the needs of our growing school. We look forward to incorporating our compost into the garden that we build this spring, and developing leadership positions for current students, so that they might teach next year's incoming 6th graders how to maintain the change that we created.

We plan to reexamine our waste next year so that we might improve upon our carbon impact as a school, and continue to inspire sustainable change in our community.

