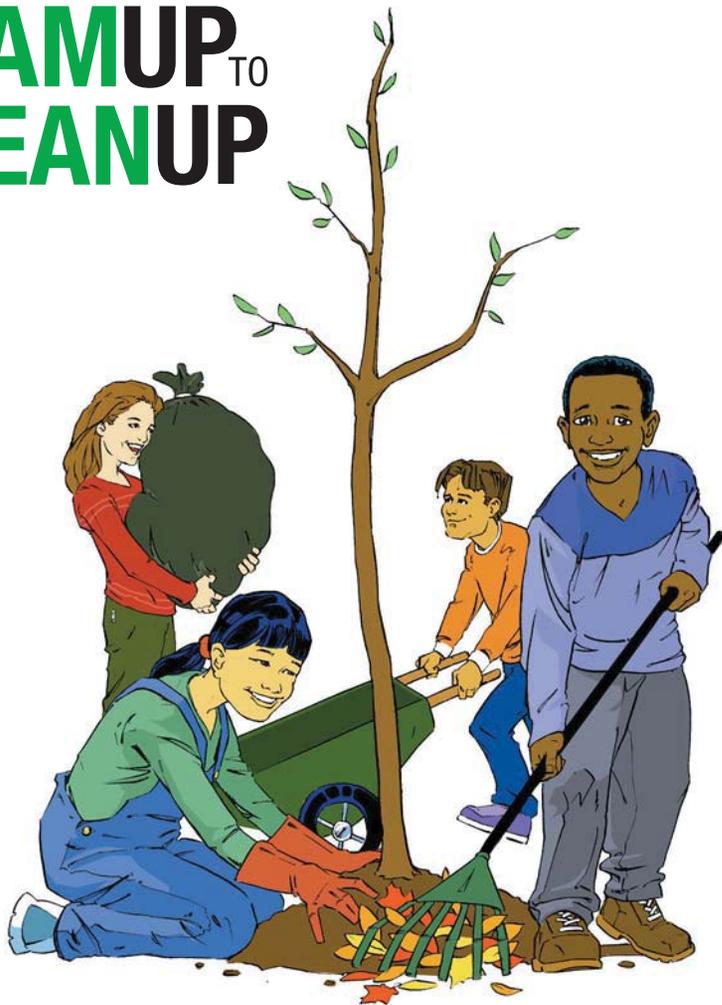


TEAMUP^{TO}
CLEANUP



Brooklyn Borough
Honorable Mention
Intermediate Division

BUGS
Brooklyn Urban
Garden School

2015 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 Recycling and Sustainability
nyc.gov/recycle



2015 Golden Apple Awards Contest Entry Judging Info

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



ID Info: 15030
School: Brooklyn Urban Garden School (BUGS)
Grade Division: IS
Borough: K
Affiliation: Charter

(for borough Master School Composter)

Cash Prize: \$1,000
Team Up to Clean Up Award: Honorable Mention

Golden Shovel Award

Team Up to Clean Up

Gardening Stewardship and Beautification Project

The Brooklyn Urban Garden Charter School is committed to school-wide and community learning through urban gardening and interdisciplinary sustainability. This spring, students in the gardening program and the sixth and seventh grade advisories worked on projects to expand the school's gardens and enrich their learning of the local environment. Students set up a garden composting system, created a storm water diversion structure in the garden, built shelters for birds and small mammals in the front yard, maintained the vermiculture (worm bin) compost, and taught the neighboring pre-k basic gardening lessons.

Weblink final

http://www1.nyc.gov/assets/dsny/downloads/pdf/golden-apple-awards/GA15_TU_IS_K_758_BUGS_entry.pdf

School Population: total # 199

Core Group: 15
Total Participating: 150

Collaborations

- NYC Organics Collection
- NYC Compost Project
- GrowNYC RCP
- GrowNYC Grow To Learn
- MFTA
- NWF Eco-Schools
- NYRP MillionTreesNY
- NYRP Rose
- Citizens Comm for NYC

Prior Year Entries:

14:RR-C,GS-K

Current Entries

15:TU-hon

School Contact Information:

Phone: 718-280-9556

Address: 500 19 ST
BROOKLYN 11215

Block&Lot: 3008890001

DOE Location: K758

DOE Bldg: KBNU

Contest Coordinator: Jess Norris

Principal: Linda Rosenbury

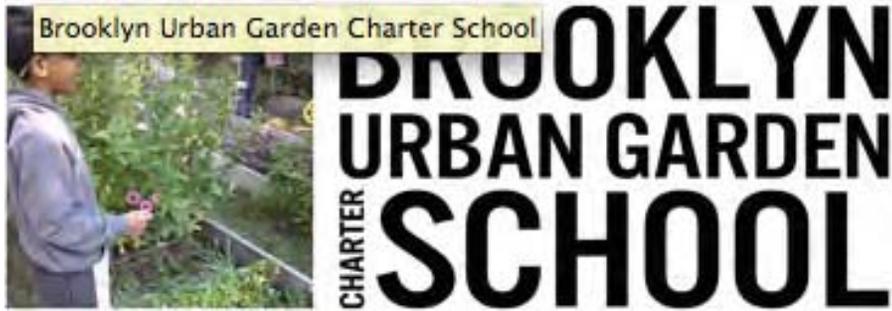
Sustainability Coord: Sashti Balasundaram

Custodian: Liberty Cleaning



The Brooklyn Urban
Garden Charter School
(BUGS)
presents

**The Garden
Stewardship
and
Beautification
Project**



Contest Entry Information

Borough: Brooklyn

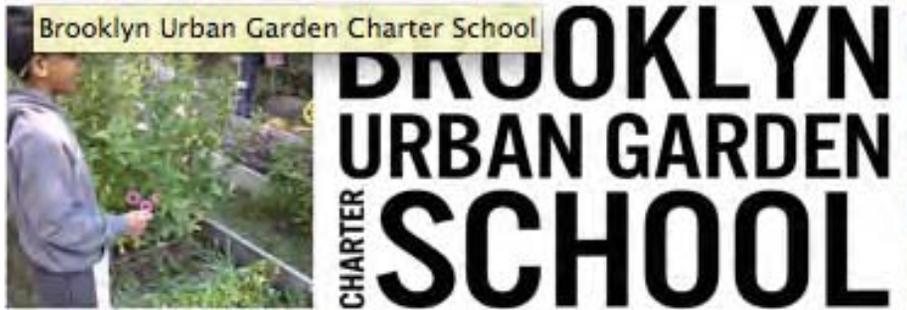
Grade Division: Intermediate

Contest Entry Title: BUGS Garden

Stewardship and Beautification Projects

Contest Entry Summary

The Brooklyn Urban Garden Charter School is committed to school-wide and community learning through urban gardening and interdisciplinary sustainability. This spring students in our gardening program and sixth and seventh grade advisories worked on projects to expand our gardens and enrich our learning.



500 19th Street, Windsor Terrace, Brooklyn 11215
Phone: 718-280-9556

Principal: Linda Rosenbury
Linda.rosenbury@bugsbrooklyn.org

Contest Coordinator: Jess Norris, studio teacher and
Interdisciplinary Sustainability Coordinator
Email: jessica.norris@bugsbrooklyn.org

WE ARE BUGS!

The mission of BUGS is to provide a hands-on, interdisciplinary education to young adolescents of all abilities and backgrounds, with a focus on real-world problem solving and the exploration of environmental sustainability. BUGS students will excel in the core academic subjects and become engaged community members who are critical thinkers prepared to achieve excellence in high school and beyond.

Brooklyn Urban Garden Charter School

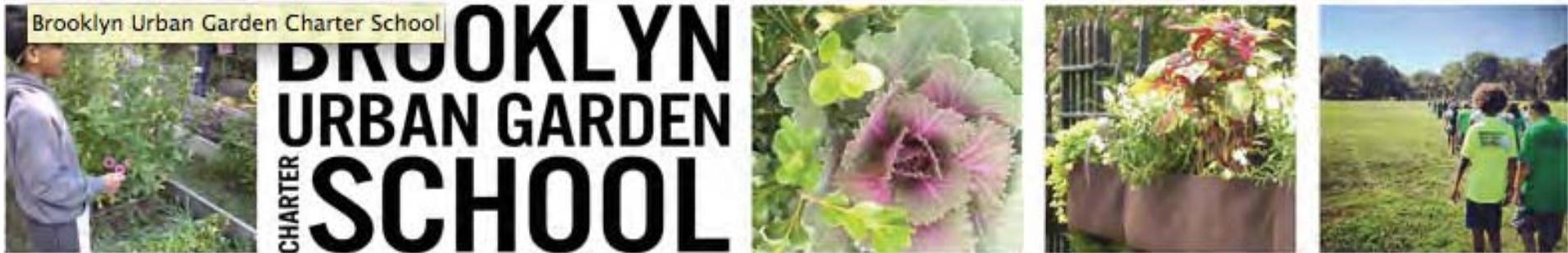
BROOKLYN URBAN GARDEN CHARTER SCHOOL



Why This Contest?

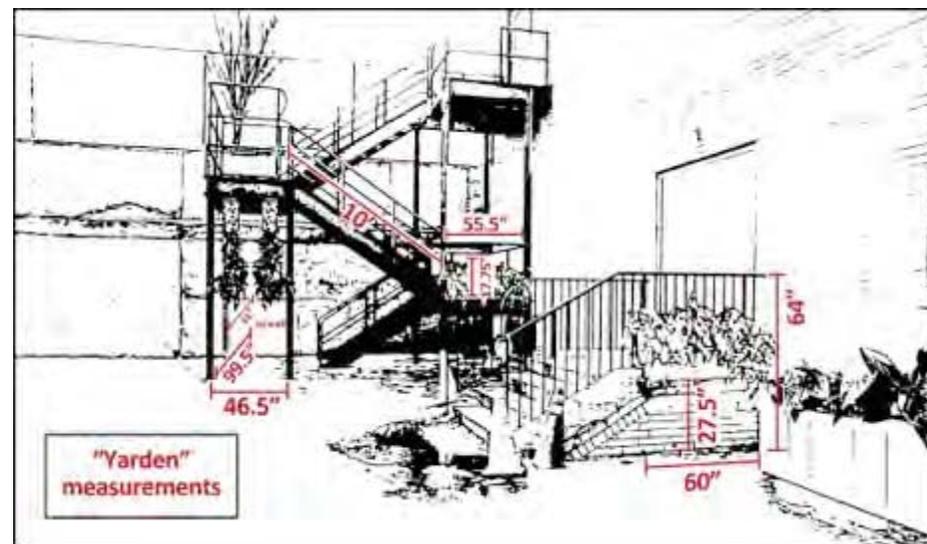
This spring at BUGS students are focused on place-based projects in grade-level advisories and in the gardening courses that address our ongoing Essential Question, “How can we use our creativity and our advocacy to care for the community.” Sixth and seventh grade projects are utilizing our outdoor spaces to plan and implement a learning garden and several garden beautification projects. The Team Up to Clean Up contest speaks to this initiative on many levels as the students are responsible for working together to transform our asphalt back lot and narrow front yard into workable and beautiful spaces for learning and growing.





What Did You Do?

Students used their field study journals from prior field trips and in-house field study days to brainstorm and plan group projects to transform our garden space. Additionally, students studied sustainable garden practices, helped to design the overall layout of the learning garden, got their hands dirty using our vermiculture compost to prepare beds for planting, and participated in a nursery operation to grow transplant-ready plants for the spring.



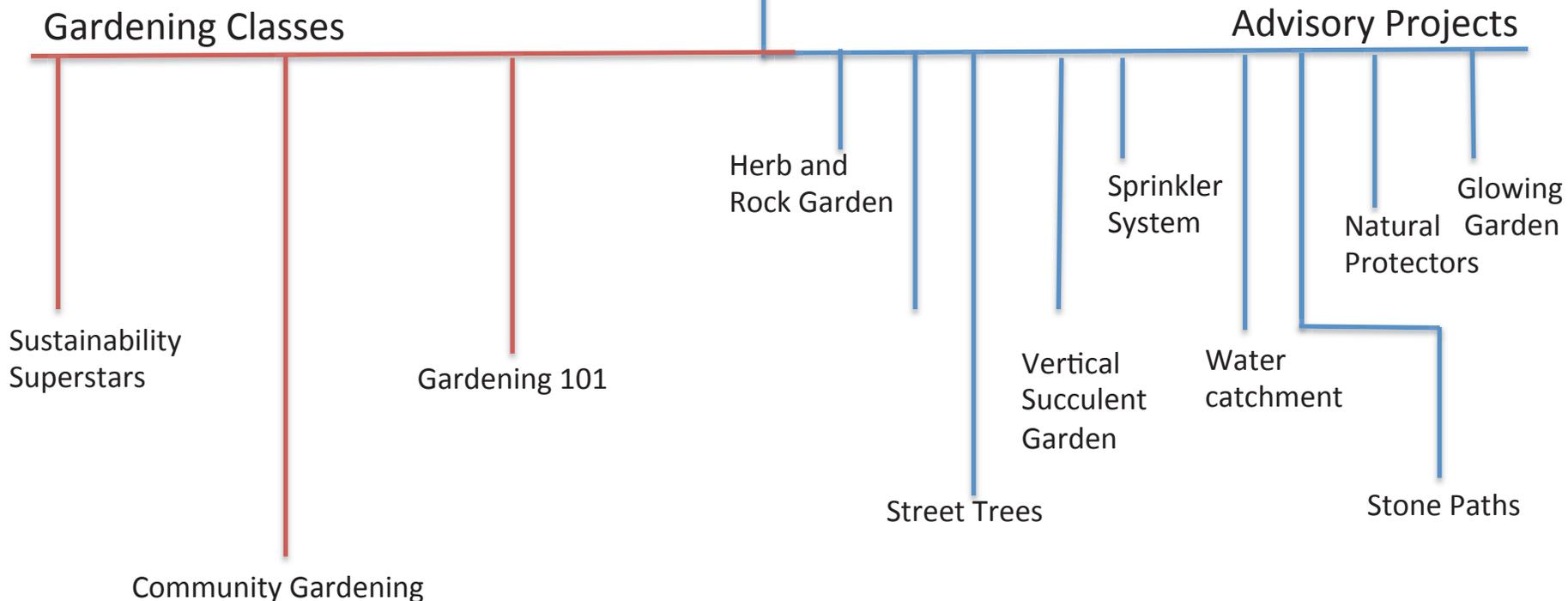
Please see the breakdown on the next page for individual initiatives of each advisory project and gardening courses.



BROOKLYN URBAN GARDEN CHARTER SCHOOL



Garden Stewardship and Beautification



Gardening Program Overview

Brooklyn Urban Garden Charter School

BROOKLYN URBAN GARDEN CHARTER SCHOOL

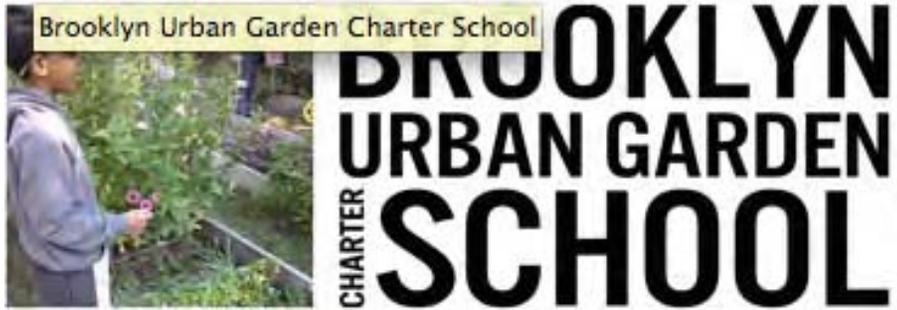


Community Gardening

A sixth grade enrichment course where students created **Spanish-English signage** identifying specific plants in our front yard. The objective was to encourage community engagement in the garden.

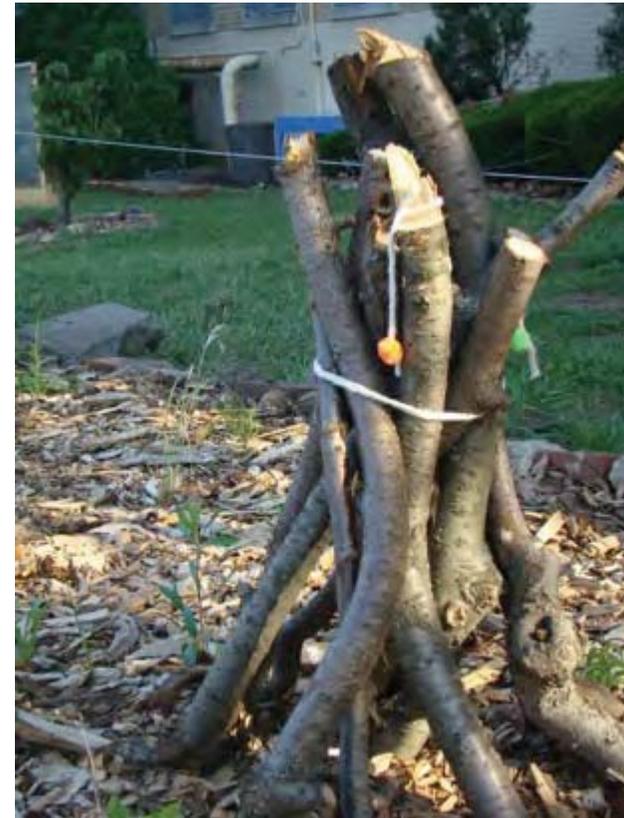


Brooklyn Urban Garden Charter School



Sustainability Superstars

A seventh grade enrichment course where students set up the garden **composting system**, created a **storm water diversion** structure in the garden, built **shelters** for birds and small mammals in our front yard, maintained the **vermiculture** compost, and **taught** the pre-k that shares our building **basic gardening lessons**



Brooklyn Urban Garden Charter School

BROOKLYN URBAN GARDEN CHARTER SCHOOL



Gardening 101

A sixth and seventh grade course where students studied propagation and maintained a plant nursery operation for transplanting in April. Students also studied beautification practices through planting a tulip garden in our front yard.



Advisory Project

HIGHLIGHTS



Stone path: How can we make our garden look aesthetically pleasing while using renewable materials

Glowing Garden: How do we inform and involve the community by highlighting and illuminating the garden? Ms. Molly's advisory is using solar lights and glow paint to light the garden at night

Vertical Succulent Garden: How can we save space and water by using recycled materials? We will use reclaimed wood to create a wall garden to beautify the sides of the building while saving space and water

Rain Catcher: How do we collect natural resources and use them in creative ways? We will build a rain catchment system out of reclaimed materials (old trash bin, screening) to make better use of our natural water systems for garden hydration.

Natural Protectors: How can we protect the BUGS garden naturally? We will use all natural resources, such as coffee grinds from local eateries and certain types of plants, to keep away bugs and other critters that can wreak havoc on the garden.

Sprinkler System: How do we recycle water to keep our plants healthy? We will develop a sprinkler/irrigation system that will help recycle some of the water used to hydrate the garden. The sprinkler system will also be a part of a garden sculpture.

Street Trees Project: How do we reduce combined sewer overflow in our community? We will plant trees along the street to both beautify the neighborhood and help reduce sewer overflow. The tree roots absorb and filter excess water and help keep the soil in place!

Herb and Rock Garden: How do we involve the community in our garden? We will research how local eateries and shops use herbs and inviting business owners to collaborate in the garden

Brooklyn Urban Garden Charter School



BROOKLYN URBAN GARDEN CHARTER SCHOOL



Guiding Question:
How can we save
space and water to
by using recycled
materials?

We will use
reclaimed wood to
create a wall
garden to beautify
the sides of the
building while
saving space and
water

Vertical Succulent Garden



*Ms. Callie's advisory constructs the vertical wall garden
From reclaimed wood*

Brooklyn Urban Garden Charter School

BROOKLYN URBAN GARDEN CHARTER SCHOOL



Natural Protectors

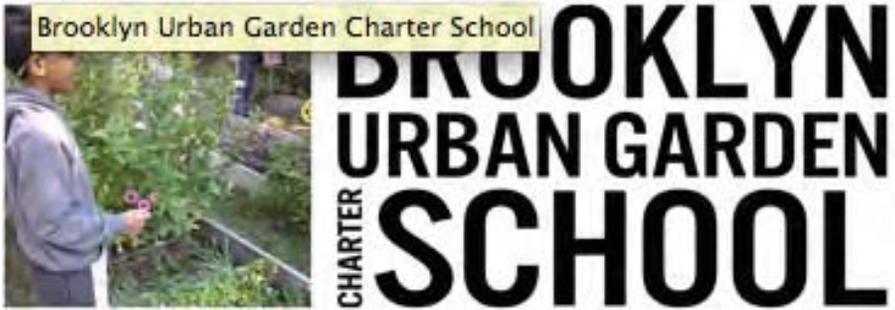


Mr. Kevin's advisory maintaining our baby herbs soon to be transplanted!

Guiding
Question:
How do we
involve the
community in
our garden?

We will research
how local eateries
and shops use
herbs and inviting
business owners to
collaborate in the
garden

Brooklyn Urban Garden Charter School



Sculptural Sprinkler System

Guiding Question:
How do we recycle water to keep our plants healthy?

We will develop a sprinkler/irrigation system that will help recycle some of the water used to hydrate the garden. The sprinkler system will also be a part of a garden sculpture.



Ms. Jamie's advisory paints the reclaimed wood pieces before they become a part of the sculptural sprinkler system



Project Planning:

The garden at BUGS is situated in the northwest corner of the asphalt yard in the back of the school building. Our objective this year is to transform the lot into a space that functions as a working garden, outdoor classroom, and exemplar of urban renewal and beautification in the community. To accomplish this goal we worked with our students in advisories and during the garden education courses

to research and develop projects that addressed different driving questions focused on our garden's needs. Our students conceived formal Project Management* plans that outlined specific measures for implementation such as:

objectives, roles, materials/resources, and educational outcomes.



*See page 13 for Project Management exemplar



Student Involvement:

The sixth and seventh grade advisories follow a project-based learning model, which supports student-led inquiry and implementation. BUGS students were involved in each aspect of the project design and implementation. First, students used their prior knowledge of urban gardening from our field study program to brainstorm ways to engage with the BUGS garden. Then, students worked with their advisories to research ideas and develop plans to implement their projects in the garden over the remainder of the school year. Each student has a different role within the project from researchers, assemblers, and quality controllers.





Promotion

Our new projects have been highlighted in several ways over the past two trimesters. Our students took initiative during the Trimester Two Celebration, electing representatives from advisories to speak to an audience of peers, families, and BUGS friends about each advisory project. Furthermore, the BUGS students participated in celebratory Earth Day rally leading from the school through the



Windsor Terrace community and onto Prospect Park. Along the way, students picked up recyclables and refuse and greeted passersby and local businesses with reminders to thank the Earth for its resources and tune in to up in-coming garden projects at BUGS.

Interdisciplinary Sustainability Project

Advisor: Ms. Molly	Driving Question: How do we inform and involve the community by highlighting and illuminating the garden?	Pro Glo
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Roles

Student Project Roles (List as many as you foresee needing. Multiple students could potentially share certain roles):

ROLE	DESCRIPTION
Solar Scientists	Organize and lead solar installation
Paint Professionals	Organize and lead paint installation
Supplies Specialist x2	Supply and organize all teams, help with supply preparation.
Busy Bees x2	Finalize sign location, outreach, spread the word, create trellis, add bee habitat
Research Analysts	Question, research, support and use brilliant minds. Survey other advisories.
Community Manager	Tweet, take pictures, help with Process statement,
Engineers	Help with all construction and installations.

Materials

- Projected in-school Materials Needed:
- signs - DIY
 - bottles - collect!!
 - sticks - sashti - cut them
 - rocks - dig up the rocks

Student Project Roles (List as many as you foresee needing. Multiple students could potentially share certain roles):

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Engineers	Help with all construction and installations.

Projected in-school Materials Needed:

- signs - DIY
- bottles - collect!!
- sticks - sashti - cut them
- rocks - dig up the rocks

Projected materials needed the school does not have:

- **yellow and black paint - paint the rocks like bees (non toxic yellow and black paint with varnish)**
- solar lights (2) - \$40

<http://www.amazon.com/lederTEK-Christma>

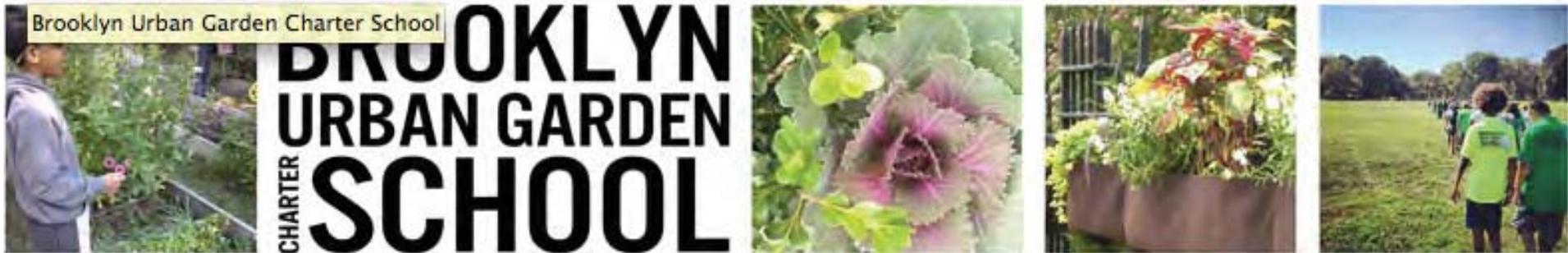
Steps

From this point, what step-by-step sequence do you foresee this project taking as it moves towards completion?

- figure out the gardens layout/research what the garden will end up looking like and design it - also make map

Trouble-Shooting: What problems could arise? What strategies can you think about now in case they do arise?

Potential Problem	Strategy for Solution
cost	fundraising
environmental impact of glow	find eco alternative like algae
malfunction	repair? create strategy and product lifecycle timeline



Collaboration

BUGS is always making connections with local organizations, schools, and garden enthusiasts to bring their knowledge and experience to our school. For example, Ms. Susan's advisory visited our community Dunkin Donuts to collect their used coffee grinds. The students used the grinds in the garden as a natural insecticide.





Educational Components (21st Century Skills)

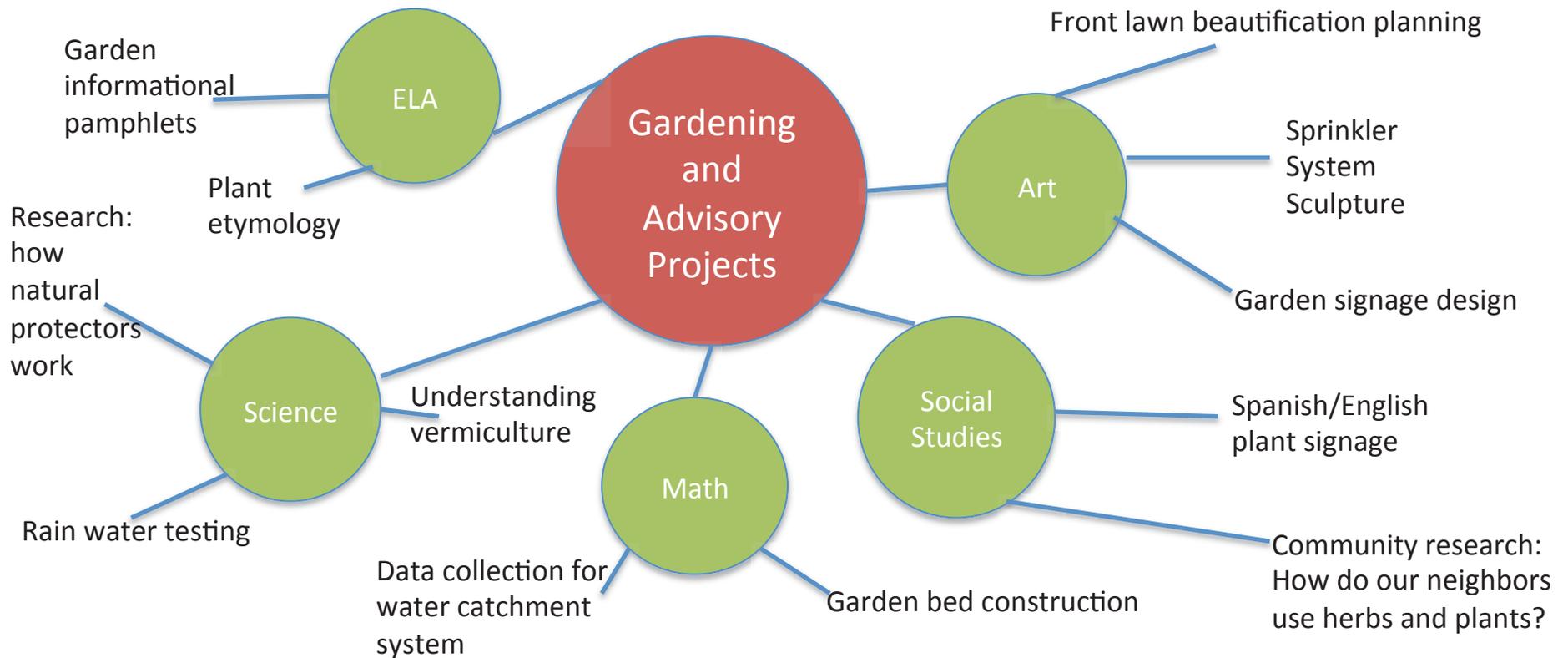
Part of the project-based learning model addresses 21st century skills and core content. Our teachers worked with their students to understand what 21st century skills are and come up with ways to integrate their other subject areas into the project.

Core Subjects and 21st Century Themes Global Awareness	Learning and Innovation Skills	Information, Media and Technology Skills	Life and Career Skills
Financial, Economic Business and Entrepreneurial Literacy	Creativity and Innovation	Information Literacy Media Literacy	Flexibility and Adaptability Initiative and Self-Direction
Civic Literacy	Critical Thinking and Problem Solving	ICT (Information, Communications and Technology) Literacy	Social and Cross-Cultural Skills
Health Literacy Environmental Literacy	Communication and Collaboration		Productivity and Accountability
			Leadership and Responsibility



Educational Components (Core Content Areas)

Core content areas were taught during the gardening courses and advisory projects. Teachers and Advisory leaders were responsible for integrated concepts from Math, ELA, Social Studies, Science, and Art. The diagram below describes how different projects approached these educational components.





Educational Components (Core Content Areas)



Students observing water samples from water catchment system



Plant research from Community Gardening



Students using math skills to figure out planter measurements.



What Worked?

Student involvement and community collaboration were huge successes on this project. Our students were encouraged to think deeply about what it means to be a garden school—both how we learn from our natural resources and how we present the beauty of our garden to the community. BUGS students took initiative, with the guidance of their advisory leaders, to research, develop and implement diverse, yet, integrated projects. Using a project-based learning model and management template, we were able to orchestrate several different projects at once, highlighting student voice and individuality.

What Didn't Work?

The benefit of a variety of small group projects is the ability to highlight individual ideas. The challenge, however, is implementing successful management strategies to ensure that each project is developing smoothly. One of our challenges was working with students and teachers to understand the feasibility of their projects and helping them to scale back (or upscale) their ideas to fit into the trimester calendar.



Applicability to Other Schools

What advice would you give to other schools with similar populations who want to replicate your project? BUGS exemplar of a school with a non-homogeneous, diverse student population. With that being the case, it is important to create a baseline understanding of urban gardening and sustainability practices before asking students to develop their own ideas for beautification. Accessing the prior knowledge and personal/cultural experiences of students allowed us to enhance student voice and community engagement parts of our program. Furthermore, our garden and the projects that stem from it very much represent our students, their families and communities. Applications in other schools would result in similar connections to community.



Measures of Success

As a result of this program our garden has expanded to include the following

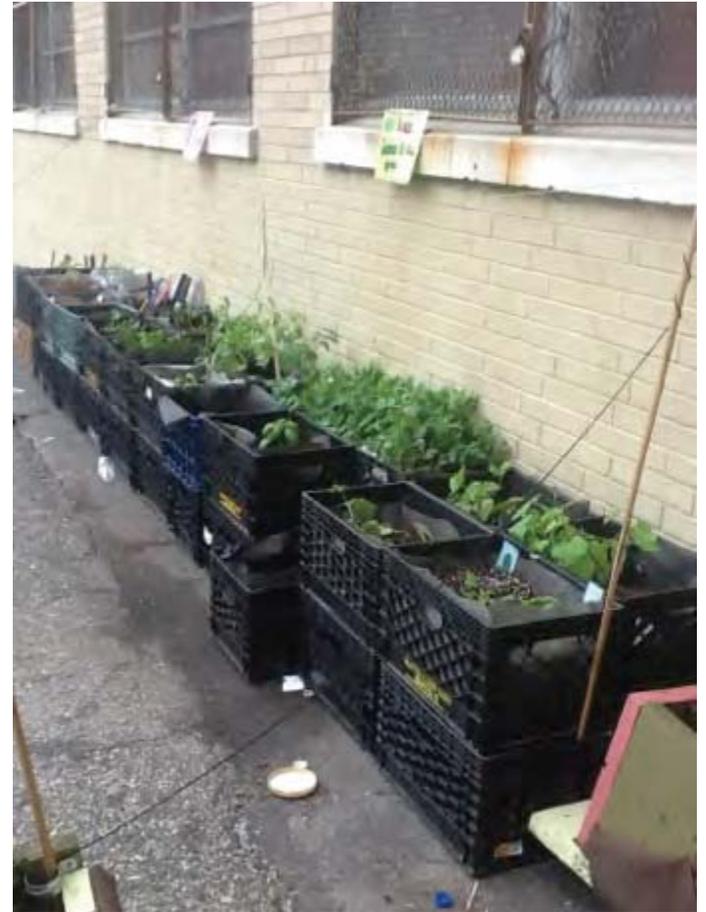
- *Twice as many students as last year are involved in garden projects.
- *We have two times the number of DIY milk crate garden containers from 36 to 72.
- *We now have 4 raised beds in our back garden. Last year we had none.
- *We are now composting outside in the garden as well as in the garden room and cafeteria.
- *We have doubled the number of Woolly Pockets that we planted from 7 to 14.
- *We have two water catchment systems.
- *We have 10 storm water modules along the back fire escape that divert rain water while bringing plant life to the structure of the building.
- *We have a stone pathway design, plant signage
- *Parts of our garden have been designated for ladybugs, pollinators such as bees, humming birds, and butterflies, and an herb garden that is open to the community
- *We have a artwork including a wall sculpture in our back garden.
- *We have Latin and Spanish plant identification in our front garden that is accessible to the Public
- *We have a tulip garden in the front of the building that brings color to our entrance.
- *We have window boxes with plants throughout the hallways and classrooms of our school.

Brooklyn Urban Garden Charter School

BROOKLYN URBAN GARDEN CHARTER SCHOOL



Measures of Success





Future Planning

- *We want to separate the garden from the recess yard by adding mulch and stones to the garden area.
- *We intend to expand upward, planting vines such as grapes and berries along the backyard fence
- *We intend to design and utilize an outdoor classroom space that is a part of the garden
- *We intend to add color and shape to the recess yard and garden through a wall mural, signage on the
- *Blacktop, and painted picnic tables
- *We are planning to paint images of bees and other pollinators on structure throughout the garden to beautify the space and bring awareness to the importance of these creatures
- *We want to introduce larger planters for fruit trees and shrubs
- *We want to harvest more food from the garden for use in the Food Fun cooking program
- *We plan on adding a solar powered water feature and umbrellas to the garden and classroom space to add refreshing elements.