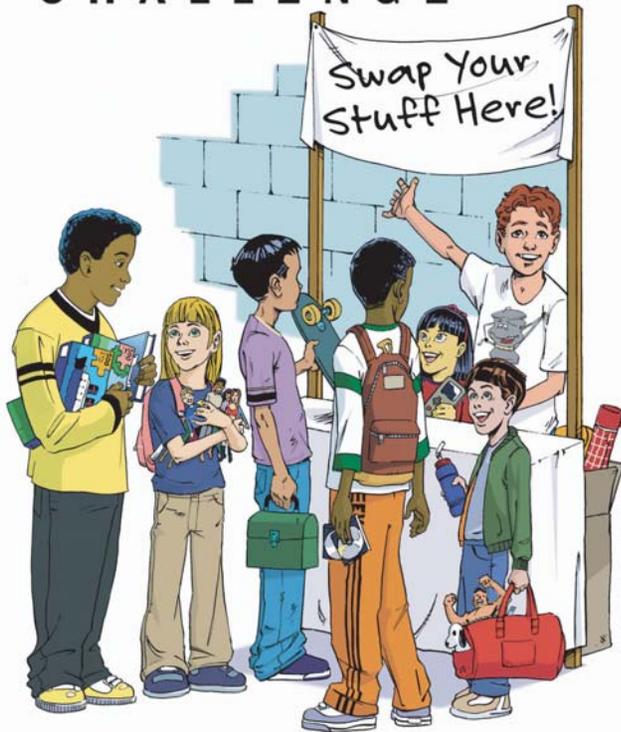


TrashMasters!™  
**REDUCE & REUSE**  
CHALLENGE



High School Division  
Queens Borough  
& Citywide Winner

**Maspeth High School**

# 2013 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/wasteless](http://nyc.gov/wasteless)



# 2013 Golden Apple Awards Contest Entry Judging Info

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



**ID Info:** 13027  
**School:** Maspeth High School  
**Grade Division:** HS  
**Borough:** Q

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

## 2013 Project Entries received for:

**School Population: total #** 484

**Core Group:**  **Total Participating:**

**TrashMasters! Super Recyclers**

Received:

**TrashMasters! Reduce & Reuse Challenge**

36

100

Maspeth Green Club Commits to Truth, Goodness, and Beauty

Received: 5/1/2013

Maspeth Green Clubbers committed to making their new permanent high school a leader in sustainability, seeking to improve their school community, surrounding communities in Queens, and Manhattan as well, with a long list of projects including sustainability promotion, recycling program coordination, electricity reduction, neighborhood and campus beautification, "Surviving Progress" documentary screening, participating in the Ban The Bag conference, developing an anti-litter public service announcement, school and cafeteria composting, gardening and greenhouse building, and a Maspeth recycling event.

**TrashMasters! Team Up to Clean Up**

Received:

## Prior Year Entries:

12:TU-boro;13:RR-C

## Current Prizes

13:RR-C

## School Contact Information:

**Phone:** 718-803-7100  
**Address:** 54-40 74 St  
Maspeth 11373

**Contest Coordinator:** Aaron Bell, advisor

**Block&Lot:** 4028030001  
**DOE Location:** Q585  
**DOE Bldg:** Q585

**Principal:** Khurshid Abdul-Mutakabbir

**Sustainability Coord:** Aaron Bell

## REQUIRED for Super Recyclers only:

**Custodian:** STEPHEN SIGLER

**Info Confirmed:** 5/11/2013

Printed: 6/26/2013

# *Reduce and Reuse Challenge:* **Maspeth High School Green Club**

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*Maspeth High School Green Club Members Pose in Advisor Mr. Bell's Classroom.*

## **SCHOOL INFO**

- School Number: Q585
- Official School Name: Maspeth High School
- Street Address, City, Zip: 54-40 74<sup>th</sup> Street, Maspeth, New York, 11373
- Phone # 718-803-7100, Fax # 718-803-7105
- Principal: Mr Khurshid Abdul-Mutakabbir, Phone #718-803-7100, [kmutakabbir@schools.nyc.gov](mailto:kmutakabbir@schools.nyc.gov)
- Contest Coordinator: Aaron Bell, Maspeth High School Green Club Advisor and Biology Teacher, 718-803-7100, [abell@schools.nyc.gov](mailto:abell@schools.nyc.gov)
- School description — See Below

Maspeth High School is the first public high school in the Queens community of Maspeth. The school benefits from a state-of-the-art facility in Maspeth after a year of incubation in Forest Hills. There are currently 484 students in 9<sup>th</sup> and 10<sup>th</sup> grade attending the school. The following is a description of the school.

## **OVERVIEW**

We are a comprehensive high school that offers a diverse curriculum, several extracurricular activities and sports teams. Our mission is to introduce students to an understanding of the liberal arts and put them on the pathway to becoming lifelong learners with strong character.

## **COURSES AND PROGRAM HIGHLIGHTS**

**Program Highlights:** Extensive Fine Arts program featuring Visual Arts, Music, Dance and Theater; Advisory, Career & College Counseling, Exploratory Learning

Our instructional model is based on the Greco-Roman Trivium. We emphasize memorization, logic and technical speech. Students at Maspeth High School will partake in the following classroom activities:

Socratic Seminar – Students will sit in a circle and have an additive dialogue where they will use a text (i.e. The Iliad, Satyricon) to back up their thought. Students will be assessed on their active listening, locution and organization of facts. Socratic Seminar will be used as summative assessments primarily in English and Shakespearean Theater classes.

Debate – At MHS we use debate in our History and Civics classes. Students will participate in Team Policy, Parliamentary and Lincoln Douglas style debates as a form of assessment. We adhere to same rules and regulations that are used in competitive debates. In debate, student will learn to use technical speech to further their arguments while rebutting the arguments of their competitors.

Declamation – Students at MHS will perform 3 declamation pieces per year. A declamation is public recitation of powerful, persuasive and often political speech (i.e. The Gettysburg Address by Abraham Lincoln).

Public Speaking – We strongly encourage public speaking at MHS. At our monthly town hall meetings, students will be encouraged to speak publically in front of the whole student body. Students will be routinely assessed on their speaking techniques and delivery. We will train students to be able to disseminate information using logic and reason and then speak using facts and figures in a public setting.

Hands on Science – Our science program at MHS will follow the sequence: Biology -> Chemistry -> Physics -> Astrophysics & Natural Cosmology. We also offer Earth Science, SAT Biology, AP Biology, AP Chemistry, AP Physics B and AP Physics C as electives. All of our science classes are 6 or 7 periods per week with hands on laboratory experience and inquiry work.

## **CONTEST ENTRY INFO**

- Borough: Queens
- Grade Division (Elementary, Intermediate, High School): High School
- Contest Entry Title (10 words or less): Maspeth Green Club Commits to Truth, Goodness, and Beauty.
- Contest Entry Summary (in one short paragraph): The Maspeth High School Green Club is honored to seek designation as a *Trashmasters Reduce and Reuse Challenge* award winner under the NYC Golden Apple Awards. The club continued to grow in its second year, as did the scope of its projects following a strong inaugural year. Maspeth Green Clubbers committed to making their new permanent high school a leader in sustainability, seeking to improve their school community, surrounding communities in Queens, and Manhattan as well. A golden apple award would be a wonderful source of pride and recognition for the club in its second year.

## STUDENT INVOLVEMENT

- Student Participation: Core Group #: **36**
- Student Participation: Total #: **100**
- School Population: Total #: **484**

## REDUCE AND REUSE PROJECTS

**Project 1: Sustainability Promotion**

**Project 2: Recycling Program Coordination**

**Project 3: Electricity Reduction**

**Project 4: Neighborhood and Campus Beautification**

**Project 5: Documentary Screening**

**Project 6: Ban the Bag Conference Participation**

**Project 7: Anti-Litter Public Service Announcement**

**Project 8: School and Cafeteria Composting**

**Project 9: Gardening and Greenhouse Building**

**Project 10: Maspeth Recycling Event**

**Note: All projects served as important educational opportunities this year and are linked to standards of the New York State Living Environment Curriculum (available online at <http://www.p12.nysed.gov/ciai/mst/pub/livingen.pdf>). Applicable portions of the Maspeth High School Biology Department's Curriculum Map are included in all sections titled, "educational components."**

## Project 1: Sustainability Promotion

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# Pumpkin Pole Planter Pitch



Green Club



Maspeth High School Green Club







### The Action Plan of the School

#### Goal 1 (250 characters)

To clearly label recycling containers in our school and to educate staff and students about proper waste disposal.

#### Actions to achieve Goal 1 (500 characters)

We will place NYC Wasteless stickers in each classroom near the recycling containers to identify where common classroom waste belongs. We will install box tops over the green and blue recycling bins in school with the labels "Paper" and "Plastic," respectively. Paper and plastic bottles are by far the most significant items by volume and weight in our school's waste stream. Teachers will receive a mini professional development about proper recycling protocols.

## Implementation

**Why this:** One of the primary goals of the Maspeth High School Green Club in 2012-2013 was to increase its membership, presence, and efficacy. With more members, club projects would be more readily developed, initiated, and sustained. The club promoted itself early on in its new building and as a result, created a cool factor around sustainable practices. Not only were the club's early projects highly visible, a significant percentage of the school's population knew club members or were themselves club members, making eco-friendliness at Maspeth High School the norm rather than the exception. By organizing events and following through with projects throughout the school year, the Green Club reminded students and staff continuously about the need to be green.

**What we did:** One of the club's first events in September was *Club Day*, an exposition of the MHS clubs and sport teams in which groups received booths to recruit members from the ranks of the incoming ninth graders. The Green Club had a booth filled with life, accolades, pictures, and potential projects. It was a hit among new and old students alike and ensured momentum for the year.

In October, the club participated in the school's *Halloween Carnival* (sponsored by another service organization, the Maspeth Key Club). The club wanted to make the day fun and educational, designing games for the carnival that would raise funds and awareness too. The Green Clubbers conceived a variety of ideas and unveiled them the night of a well-attended and decorative carnival. *Pumpkin Pole Planter Pitch* was a game in which plastic planters (already a part of the biology laboratories grow stations) were used instead of rings to top the poles of laboratory ring stands, with winners getting a chance to top a Green Club themed painted pumpkin. Other Green Club contributions to the carnival were a booth to sell hot apple cider and a *House of Horrors* exhibit with preserved biology specimens to be viewed in a covered box, and a game called *Bury the Skull*. The most successful game was *Hopping Frog Recycles*, in which participants launched a toy frog with a slingshot across a table toward two recycling bins. The green recycling bin was topped with a paper plate folded into a triangle and the blue recycling bin was topped with an empty plastic water bottle. If participants knocked a recyclable into the correct container, they won a prize. If the frog fell short, however, and landed in the frog pond, participants lost a turn.

To facilitate communication between the Green Club and the Maspeth community, the elected position of media specialist and historian was created. Charlotte Drozd (10<sup>th</sup> Grade) and Chaia Ona (9<sup>th</sup> Grade) were elected to this role and immediately set out to increase the exposure of the club. They created a Facebook group and designed a club website (<http://mhsgreenclub.weebly.com/index.html>), keeping both updated with club events and projects.

An ongoing sub-project in sustainability analysis and promotion was undertaken through the Eco-Schools Litter Less campaign, for which the Green Club was awarded a Wrigley's grant. Eco-Schools is the largest sustainable schools program in the world and asks member schools to complete seven steps toward sustainability. In the United States, the Eco-Schools program is hosted by the National Wildlife Federation. Through this program the MHS Green Club formed an eco-committee, conducted an environmental review, developed an action plan with three major goals (composting, recycling, and greenhouse growing), and monitored our progress, with further steps yet to be finished.

Before Earth Day, Thomas Farrell created an Earth Day poster which was printed in limited quantities, colored by Green Club members, and displayed in hallway bulletin boards. The poster **had the following message: "Celebrate Earth Day. Please do your part. Reduce, Reuse, Recycle."** On it are drawn a view of the Earth's western hemisphere from space and a clover leaf.

**Project planning:** The Green Club meets every Wednesday during the school year from 3:15PM to 4:15PM. The meetings are well attended and fortunately, club members need little prompting to engage in club projects. The entries in Club Day and the Halloween Carnival were organized by the Green Club members during these meeting times. Eco-schools action plans were discussed and formalized during these meetings as well.

**Student involvement:** A group of dedicated 10<sup>th</sup> graders who were part of the club as freshmen got the year off to a great start by organizing the Green Club booth for Club Day. They carried plants, newspaper articles, previous awards, and posters about the club's ideals from my classroom to the school cafeteria. Members also colored in a Maspeth Green Club sign on chart paper that was placed on an easel at the table we were assigned. From a distance, the booth stood out and generated appeal. Volunteers stayed around the table to inform students about the club while a picture slideshow ran on a laptop. They were quickly swarmed by 9<sup>th</sup> graders eager to see the display and sign up to be members. At a school with an array of extracurricular activities competing for student devotion, this early promotion guaranteed that the Green Club's second year would be better than its first.

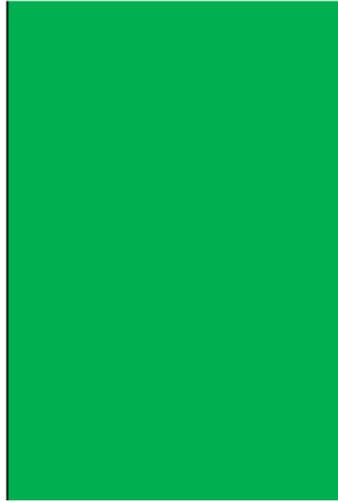
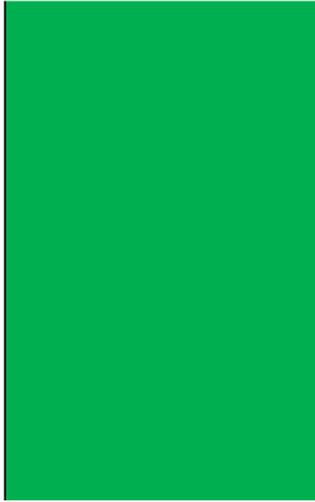
For the Halloween Carnival, students creatively used common classroom items to make their entries. A chair and stretchy book cover became a slingshot for *Hopping Frog Recycles*, while Ngwang Tenzin used his artistry to transform scrap pieces of colored paper and a lab tray into a pond complete with lily pads. Green Club members bought the apple cider that we warmed up on lab hot plates and manned the game tables too. A cardboard box was saved from the recycling bins to become the setting for *House of Horrors*. Specimens preserved in jars and representing the biodiversity in the animal kingdom were temporarily taken from their home in my biology classroom to become the frightful sights.

I was thrilled to have Chaia Ona and Charlotte Drozd create a website without any intervention on my part. They found a web service without ads on display and gave the website an attractive theme.

**Promotion:** Both *Club Day* and the *Halloween Carnival* were events that promoted the Club. After those events, many of the club's projects were promoted on Facebook, on the school's website, and on the Green Club's website. For Earth Day, students were reminded to reduce, reuse, and recycle with creatively colored posters originally penned by Green Clubber Thomas Farrell. Each completed Eco-schools step is uploaded to the organization's website, giving our club an international forum to discuss and promote sustainable practices. The club purchased sweatshirts with a front logo demonstrating a hand clutching a plant. The message was that Green Clubbers are hands on in cultivating and protecting nature. The three leaves of the plant represent our school's three core values: truth, goodness, and beauty. On the back is an image of planet Earth and the message, "We can make a world of difference."

**Collaboration:** Club Day and the Halloween Carnival were both organized by Ms. Jessica Anderson, the advisor to the Maspeth High School Key Club. She continuously keeps her eye out for events that might be of interest to the Green Club. Emily Fano of Eco-Schools USA has been a great help to the club all year. She encouraged us to complete our steps and assisted us when obstacles arose.

## Educational components:



- **7.2c** Industrialization brings an increased demand for and use of energy and other resources including fossil and nuclear fuels. This usage can have positive and negative effects on humans and ecosystems.

**Performance Indicator 7.3: Explain how individual choices and societal actions can contribute to improving the environment.**

- **7.3a** Societies must decide on proposals which involve the introduction of new technologies. Individuals need to make decisions which will assess risks, costs, benefits, and trade-offs.
- **7.3b** The decisions of one generation both provide and limit the range of possibilities open to the next generation.

## Analysis

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**What Worked:** I was particularly pleased to see the creativity involved in producing *Hopping Frog Recycles*. Not only did it have a positive message (to distinguish between common recyclables and to correctly place them in school containers), it also made recycling *fun*. I was also happy to see how very few things had to be wasted to create the carnival atmosphere. Ordinary classroom items (chairs, specimens, boxes, book covers) served a brief role in making the Halloween Carnival unique and authentic but were soon returned to their normal jobs. Other clubs featured candy in lots of packaging while the Green Club chose setups that promoted sustainability and health.

**What Didn't Work:** Although over one hundred students signed up to be members of Green Club during Club Day, only twenty or so came to the subsequent meeting. Still, word had gotten out that the Green Club was one of the most interesting (and solidly supported) on campus, and the club enjoyed strong membership all year. During the Halloween Carnival, spread throughout the school's cafeteria, some students who attended unfortunately didn't get a chance to play the eco-themed Green Club games. Those that did were able to have fun while learning about the club's reduce, reuse, and recycle campaign.

**Applicability to other Schools:** With the assistance of even a few students, sustainability promotion can be a creative, thought-provoking, and powerful endeavor. Any school can form a Green Club whose members will surely create the identity of the club. Once in place, conservation really can become cool.

**Measuring Success:** Ultimately, as the following pages will demonstrate, the sustainability promotion that took place at the beginning of the year boosted the club's status, membership, and outreach potential. The club often had double the number of participants in club activities and meetings compared to last year. With such an elevation in membership and energy, the club was able to meet many of its goals and establish Maspeth High School as a green school in its new home.

# Project 2: Recycling Program Coordination

## Goals for Maspeth Recycling Program

- 1) Ensuring all classrooms have the appropriate containers and instructions for recycling.
- 2) Ensuring all students and staff know where to place common recyclables as well as trash.
- 3) Preventing contamination of the containers.
- 4) Ensuring timely collection of plastic bottles and paper waste.
- 5) Placing recycling bins in the hallways and cafeteria.

## Recycling Game



Featured on NYC WasteLess Site

[http://www.nyc.gov/html/nycwasteless/html/resources/promo\\_recyclinggame.shtml](http://www.nyc.gov/html/nycwasteless/html/resources/promo_recyclinggame.shtml)





## Implementation

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**Why this:** Many high school students, even when recycling bins are available in every classroom, fail to differentiate recyclables from trash. The Green Club resolved to educate the Maspeth High School community about the benefits of recycling and to ensure that common recyclables were deposited in recycling bins rather than in the trash. The club hoped to prevent the indiscriminate tossing of trash in any available container.

**What we did:** The first phase of this project was to identify the weaknesses in recycling infrastructure and practice in our newly built home. Some of the classrooms were not equipped with all three necessary containers: a metal container for trash, a green recycling bin for mixed paper and cardboard, and a blue recycling bin for plastics and metals. Those that were often had homogenous mixtures of trash in each at the end of the day. The school's custodial staff, seeing so little compliance, started the year by simply bagging all of the school's waste as trash. The Green Club chose to create recycling goals and to then communicate those goals to the Maspeth administration, teachers, student body, and custodial staff. The Green Club came up with the following goals:

- 1) Ensuring all classrooms have the appropriate containers and instructions for recycling.
- 2) Ensuring all students and staff know where to place common recyclables as well as trash.
- 3) Preventing contamination of the containers.
- 4) Ensuring timely collection of plastic bottles and paper waste.
- 5) Placing recycling bins in the hallways and cafeteria.

**After this phase, I spoke with the school's head custodian, Mr. Stephen Sigler, who had replaced a more reluctant person assigned by the School Construction Authority. Mr. Sigler assured me that his staff would do everything they could to help the Green Club make school-wide recycling a reality.**

Green Club members first took an inventory of all classrooms to determine which ones lacked one or more waste containers. Many had simply not been allocated a recycling bin or two which was quickly corrected as there were extra recycling bins in other locations in the building. The club then placed NYC WasteLess stickers from the New York City Department of Sanitation in each classroom to better inform students about what waste could be recycled and

what waste belonged in the trash. On each sticker is the message *With your help, it's all falling into place* along with a visual depiction of common waste items above the appropriate containers. The effort then turned to education. I gave a mini-PD to Maspeth teachers during a grade level meeting that informed them of New York City recycling policy. Using a PowerPoint, I outlined the Green Club's recycling goals, the proper disposal of common school waste, and had teachers play the recycling game available online at [www.nyc.gov/html/nycwasteless/html/resources/promo\\_recyclinggame.shtml](http://www.nyc.gov/html/nycwasteless/html/resources/promo_recyclinggame.shtml). I had my biology students play the same game, something they were excited to try. Most classes learned the nuances of recycling rules quickly in an effort to better their initial scores in the game. A condensed rule my Green Clubbers forwarded seemed to help: Green is the color of trees and paper from trees goes in green. Blue is the color of water and water bottles go in blue.

With teachers motivated to enact change in their own classrooms and educated about proper recycling protocol, the school still struggled to achieve full compliance. Many students had become accustomed to throwing any item in the nearest available waste container, no matter its color or intended function. The Green Club responded with a plan to install box tops on all recycling containers in the school. Mr. Sigler approved their use and the main office channeled boxes from their copy paper supplies to the Green Club rather than the waste stream. Green Club members outfitted all green recycling bins with a box top labeled "Paper" and possessing a slot cut out for paper. They outfitted all blue recycling bins with a box top labeled "Plastic" and a circular cut-out for plastic bottles.

The Green Club next tackled the school cafeteria, which had been throwing away recyclables with trash to start the year. Supplementing the garbage cans, the Green Club members placed tall recycling bins in the recesses of the cafeteria. Both types of container already had permanent plastic tops with labels. The blue bins had the most substantial effect as many Maspeth students bought or brought plastic drink bottles. With the bins in place, the school reduced a substantial volume of plastic from heading to landfills.

Major school events such as the Halloween Carnival, Movie Night, the Winter Ball, and the Homecoming Dance were overseen by the Green Club to guarantee that recyclables were cleaned, sorted, and deposited in the correct bins. In an effort to reduce wastefulness, the club supported the administration's paper reduction plan which called for teachers to have a monthly quota of copy paper.

**Project planning:** Jia Chen, the club's president, took a lead role in activating the recycling program at our school and coordinating the club's efforts to ensure success. Mr. Sigler was pivotal in giving me advice about improving recycling compliance.

**Student involvement:** Green club members walked throughout the school building to assess the recycling infrastructure in place. They placed recycling containers in the classrooms that were deficient. Students used scissors to cut out the appropriate box top openings for recyclables. They printed, attached, and taped the labels for the box tops and were responsible for distributing the box tops to every classroom. One teacher was so thrilled with the initiative that he decorated his classroom's box tops with colorful green and blue recycling symbols.

**Promotion:** The NYC Wasteless recycling game was a great way to promote the recycling program to my students.

**Collaboration:** Stephen Sigler and his custodial staff have communicated throughout the year with the Green Club about best practices in recycling. They collect the recyclables daily from the classrooms and separate them to be collected by the department of sanitation. Our District 75 partner school, the John F. Kennedy, Jr. School (P721Q), is co-housed in Maspeth High School's building and collaborated to take the plastic bottles and cans collected from the blue bins to a local store to collect deposits. This partnership gives a valuable experience to the students attending the John F. Kennedy, Jr. School and fosters stewardship for both schools in our location.

## Educational components:

### 25. Human Interaction and Effects of Human Intervention

- Positive and negative influences humans have had on the environment.
- Renewable and non-renewable resources.
- Making informed decisions based on research.
- Sustainability and stewardship.

5.3 Human Population Growth (p.142)

### Chapter 6: Humans in the Biosphere (p.152)

*Main Question: How have human activities shaped local and global ecology?*

- 6.1 A Changing Landscape (p.154)
- 6.2 Using Resources Wisely (p.158)
- 6.4 Meeting Ecological Challenges (p.173)
- Preparing for the Living Environment Exam (p.183)

**Key Idea 7:** Human decisions and activities have had a profound impact on the physical and living environment.

**Key Idea 7, Clause 1:** Population growth has placed new strains on the environment - massive pollution of air and water, deforestation and extinction of species, global warming, and alteration of the ozone shield. Some individuals believe that there will be a technological fix for such problems. Others, concerned with the accelerating pace of change and the ecological concept of finite resources, are far less optimistic. What is certain, however, is that resolving these issues will require increasing global awareness, cooperation, and action.

**Key Idea 7, Clause 2:** Since the students of today will be the elected officials and informed public of tomorrow, the teacher should encourage a diversity of activities that will allow students to explore, explain, and apply conceptual understandings and skills necessary to be environmentally literate.

**Performance Indicator 7.1:** Describe the range of interrelationships of humans with the living and nonliving environment

- **7.1a** The Earth has finite resources; increasing human consumption of resources places stress on the natural processes that renew some resources and deplete those resources that cannot be renewed.

## Analysis

**What Worked:** The best indicator that the recycling program is working at our school is to venture curbside and see mixed paper products separated from plastics and metals and from trash outside of the school. I spoke with a Department of Sanitation worker while leaving the building one day and he said that on his route in Queens, MHS was the only school that did such a good job separating its waste. When I saw him toss paper products into the appropriate recyclable compartment of his truck, I knew our efforts had paid off.

**What Didn't Work:** I regret that plastic bottles were not removed from the waste stream earlier in the year in the cafeteria. To see the quantity of waste generated during each lunch session remains discouraging; at least bottles and cans are not being thrown away en masse now. Some recyclables continue to be carelessly thrown into trash bins during lunch periods. I hope to have the Green Club work on a Styrofoam policy for next year, as that is a glaring source of waste that fills many bags destined for landfills.

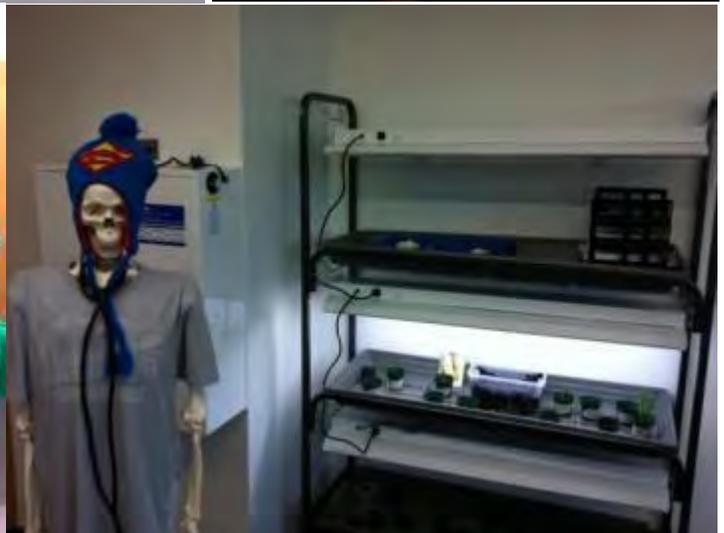
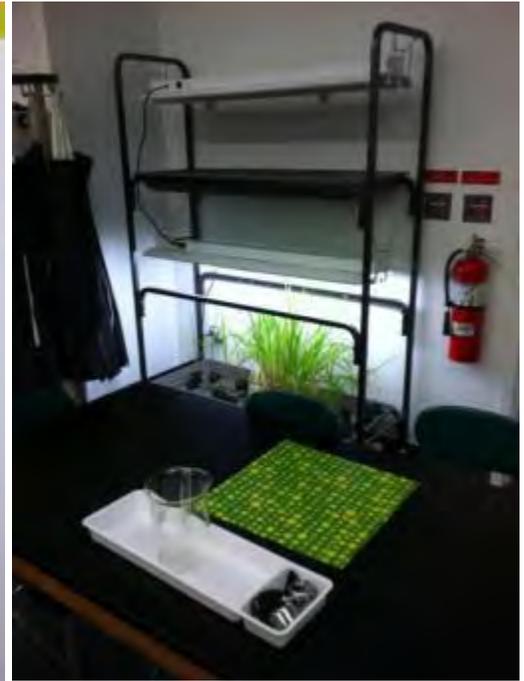
Although the box tops the Green Club created do not indicate all items that can be included in the green and blue bins, we made a worthwhile concession. The club resolved to reduce the most common recyclables by weight (paper) and by volume (plastic bottles) that might enter trash containers. Our thinking was that if these items could be targeted first, separating other recyclables would follow. It seems to have worked.

**Applicability to other Schools:** With the support of the Department of Sanitation, all schools in New York have the ability to improve their recycling methods. Seeing the school's daily production of waste, I am certain that if all schools were to truly enact recycling and reduction programs, New York City's waste stream would be drastically reduced. The timing of responsible action early in a person's life has great benefit as well. By educating New York City students about why and how to recycle, they will likely serve as more responsible citizens for the city later in their lives.

**Measuring Success:** Boxes originally containing copy paper that would have been treated as waste gained a new life as important parts of our recycling program. Each day it is clearly visible that the hundreds of plastic bottles and metal cans that would have been added to landfills can now be recycled, keeping materials that are expensive to process and difficult to break down out of the country's landfills. Paper supplies too, if left out of the trash, can be transformed into important post-consumer products.

## Project 3: Electricity Reduction

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### Implementation

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**Why this:** Our school's new building is fortunately equipped with light sensors and timers to prevent lights from being left on in unoccupied classrooms. Still, Green Clubbers noticed that many teachers would trust this technology *too much*, letting the timers turn off classroom lights instead of taking personal action. Even a few minutes of wasted electricity consumption, if multiplied over many classrooms and many years, is detrimental. In addition, the Green Club noticed that many teachers were leaving their Smart Boards on unnecessarily during the school day or even overnight (in sleep mode). This consumes electricity and shortens the life of projector bulbs which would then have to

be disposed of. In Biology classrooms, where fluorescent lights are used to grow plants and to illuminate aquariums and reptile habitats, light duration exceeds the typical school day.

**What we did:** The Green Club placed stickers next to every light switch with the message “Leaving? Switch it Off. Thanks.” I sent an email to staff members reminding them to be mindful about electricity consumption. Smartboard usage was discussed during grade level meetings. The biology classrooms and labs were equipped with timers for the grow stations, the indoor learning garden, and aquariums.

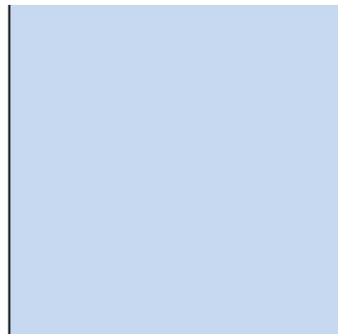
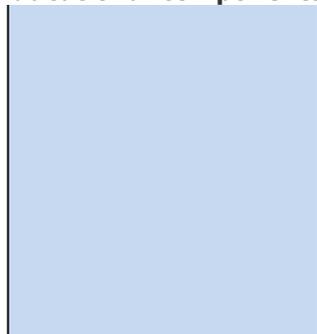
**Project planning:** Mr. Mario Matos, the operations manager at our school, sent me an envelope filled with the stickers, which showcase the greenNYC mascot, Birdie, and the greenNYC logo. The Green Club chose to place them immediately adjacent the light switches to maximize their effectiveness.

**Student involvement:** A large group of students visited each classroom after school to place the electricity reduction stickers. They included staff lounges, the main office, and the guidance suites.

**Promotion:** The stickers serve as an everyday promotion for our Green Club goal to reduce electricity consumption. Staff see them as they leave their classrooms and are reminded to switch lights off manually rather than rely on the automatic sensors and timers.

**Collaboration:** As a result of the generous donation of stickers by greenNYC, our school demonstrates to visitors its commitment to lowering electricity consumption.

#### Educational components:



➤ **1.1c Science provides knowledge, but values are also essential to making effective and ethical decisions about the application of scientific knowledge.**

**Performance Indicator 1.2: Hone ideas through reasoning, library research, and discussion with others, including experts.**

➤ **1.2a Inquiry involves asking questions and locating, interpreting, and processing information from a variety of sources.**

## Analysis

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**What Worked:** I have noticed far fewer empty classrooms with lights on after starting this project. Once teachers were reminded about SmartBoard usage, particularly when it comes to the expense of replacement bulbs, the SmartBoards were not left on when not in use.

**What Didn't Work:** For next year, I would like to analyze the school's electricity usage stats month to month to ensure the Green Club's sticker project is working. Certain rooms, like the staff lounges, often have lights on with no one in them, probably because they are so frequently visited. The stickers we chose had to be reinforced with tape as stickers don't adhere well to the particular easy-to-clean paints in our building.

**Applicability to other Schools:** New York City schools, especially those without modern buildings with light sensors, would greatly benefit from a sticker campaign like that undertaken by the Maspeth Green Club. Many educators and students think of electricity as a renewable source of energy when in fact in America most electricity is generated from the burning of fossil fuels. Science lessons can clarify this misconception and earnest students can monitor the electricity consumption at their schools qualitatively (seeing vacant classrooms with lights on) or quantitatively (viewing monthly electricity consumption figures and developing an action plan around it).

**Measuring Success:** At this time, success can only be measured in the observed changes in practice at our school. I had a few members of the school community tell me that adding stickers to classrooms was unnecessary as the school's modern sensors ensured that lights go off. When I reminded them that minutes of wasted usage add up, I

saw a change in attitude. Teachers now turn lights off manually far more frequently than before. Fewer Smartboards are left on while not in use.

# Project 4: Neighborhood and Campus Beautification







## Implementation

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**Why this:** Neighborhood beautification, in keeping with broken windows theory, is a great way to reduce the litter that ends up on the street. When streets are clean and when caretakers are visibly at work to keep them that way, fewer pedestrians and motorists perceive an area as *already dirty* and feel less compelled to make it more so. Further, residents, when living in neighborhoods that are free of litter, take community recycling and reduction initiatives more seriously.

**What we did:** The Green Club organized a number of cleanup projects in Queens. In September, the Green Club visited Elmhurst Park, a new park on the Maspeth/Elmhurst border. Focusing their efforts on the walkways, the playgrounds, and the woods behind the public toilets, they removed trash and recyclables. In October, Len Santoro of the Juniper Park Civic Association invited our club to join his organization in painting over graffiti on the Grand Avenue Bridge in Elmhurst and to remove curbside litter. Approximately twenty students gave up their Saturday to beautify the area (about one block from the school), collecting numerous bags of trash and gathering lots of excess paint on their arms and clothes! The club rejoined the Juniper Park Civic Association and their young volunteer squad, the *Juniper Juniors*, on another Saturday in April to do a similar project near the intersection of Metropolitan Avenue and Eliot Avenue in Maspeth. This time volunteers from neighborhood Stop and Shop stores assisted. Delicious oranges and bananas were donated by the supermarket. In both the fall and spring cleanups with our JPCA partners, the streets were completely rejuvenated in just a few hours.

The Green Club also conducted quarterly campus cleanups as a supplement to the regular cleanups undertaken by the **school's custodial staff**. Members concentrated on the patch of land between the school and the fence on 57<sup>th</sup> Avenue, on the athletic field behind the school, and at the entrance of the school.

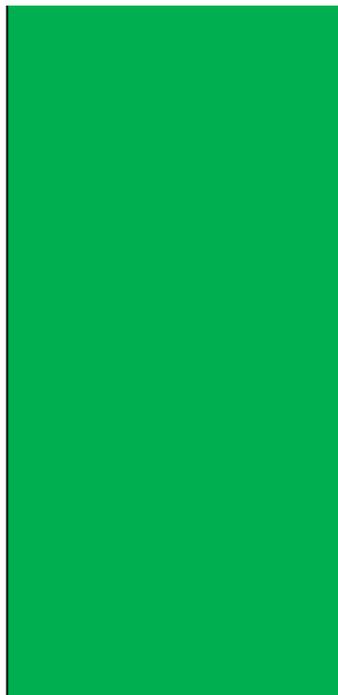
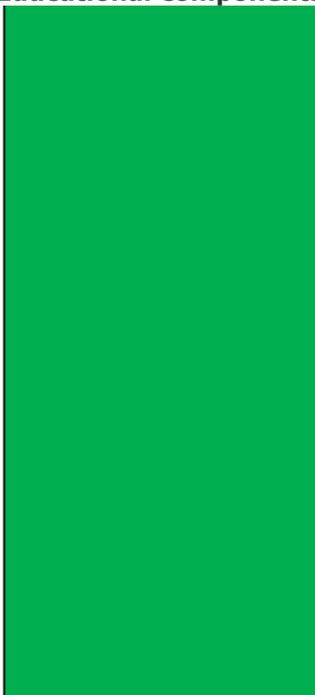
**Project planning:** Len Santoro emailed me about the two community projects sponsored by the Juniper Park Civic Association. I initiated the quarterly campus cleanups but had Green Club members use gloves and rakes to complete them.

**Student involvement:** The Elmhurst Park cleanup, Grand Avenue Bridge project, and campus cleanups had large Green Club contingents. The April cleanup on Eliot Avenue, though attended by fewer students because of the onset of Saturday Academy, was a great opportunity for them to see the effect of collaboration between community groups.

**Promotion:** The Eliot Avenue cleanup was promoted at neighborhood Stop and Shop stores as part of their wider Earth Day campaign. Banners for the Juniper Park Civic Association and for Stop and Shop (with an Earth Day message) were hung on site. I promoted the campus cleanups at our weekly Green Club meetings.

**Collaboration:** It is rewarding to develop a strong partnership with the Juniper Park Civic Association, a group that completes a large and diverse number of community projects in the communities surrounding our school. Len Santoro knows that he can count on a dedicated group of Green Clubbers to assist his middle school age *Juniper Juniors*. Stop and Shop volunteers were very hard-working and spirited when the Eliot Avenue Bridge work was performed. The club will team up with the 104<sup>th</sup> Police Precinct for an ambitious cleanup project May 11<sup>th</sup>.

#### **Educational components:**



- **7.1c** Human beings are part of the Earth's ecosystems. Human activities can, deliberately or inadvertently, alter the equilibrium in ecosystems. Humans modify ecosystems as a result of population growth, consumption, and technology. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors is threatening current global stability, and if not addressed, ecosystems may be irreversibly affected.

**Performance Indicator 7.2:** Explain the impact of technological development and growth in the human population on the living and nonliving environment.

- **7.2a** Human activities that degrade ecosystems result in a loss of diversity of the living and nonliving environment. For example, the influence of humans on other organisms occurs through land use and pollution. Land use decreases the space and resources available to other species, and pollution changes the chemical composition of air, soil, and water.

## Analysis

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**What Worked:** The Grand Avenue Bridge in Elmhurst, once painted and cleaned, remains graffiti free. I hope the Eliot Avenue Bridge stays that way too. I noticed that many walkers stopped to chat with volunteers while they cleaned. Most of them were moved by the Green Club's contributions. If even one is inspired to volunteer as a result of seeing the Green Club in action, the club's litter reduction efforts can be deemed a success.

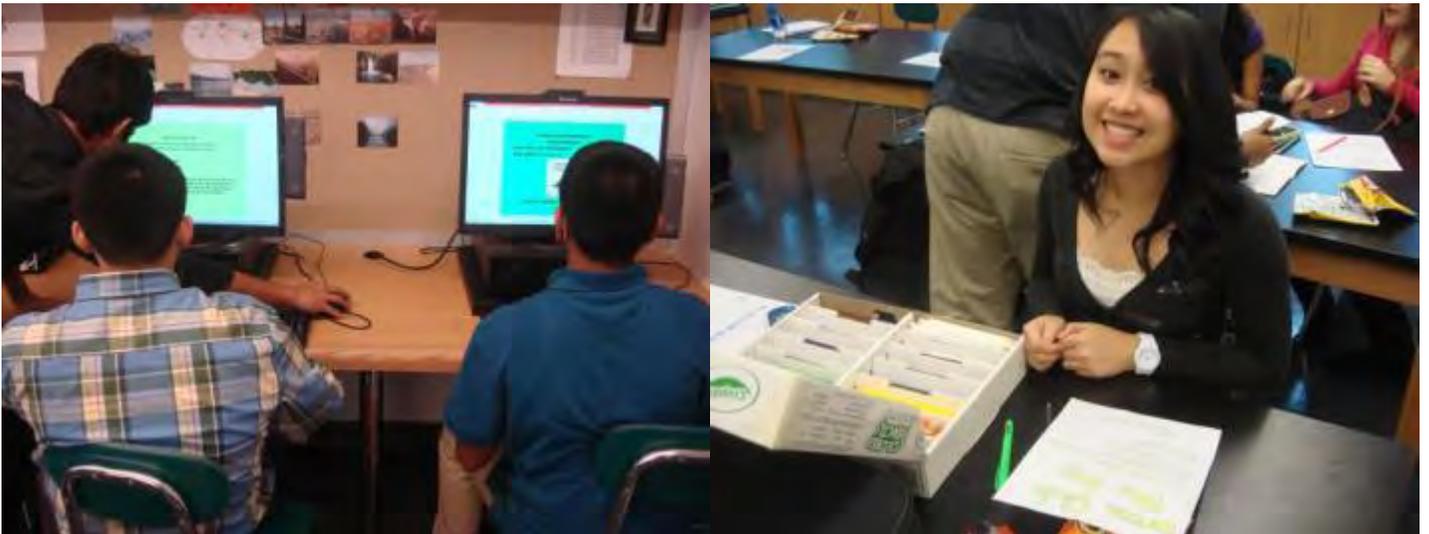
**What Didn't Work:** I can only think that it is a shame to dedicate resources (time, energy, paint, and garbage bags) to a problem dependent mostly on poor human choices. If more people acted as stewards to the urban environments of New York City, cleanup efforts would be less necessary. In addition, both bridge projects overlooked the route of the train line in which garbage is removed from New York City. It is obvious that much of the outgoing trash is not adequately covered on route and ends up as a permanent eye-sore near the tracks below. To clean a street is one thing; to clean miles of track of debris is another.

**Applicability to other Schools:** By committing to cleanups on weekends and after school, students can gain valuable community service experiences. At Maspeth High School, students log their experiences and fulfill part of a fifty-hour community service pledge.

**Measuring Success:** I love seeing the faces of students who take part in a cleanup project after their work is finished. That a bridge once covered in graffiti can stay pristine many months later shows that rejuvenating an area is not just a temporary cover-up but rather a lasting commitment to bettering a community.

## Project 5: Documentary Screening

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## Implementation

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**Why this:** At the urging of my Green Club students, who wanted to watch a film together, I searched the Netflix database for a film that examined the resource consumption crisis on Earth. I was struck by the documentary *Surviving Progress*, which incorporated visually stunning cinematography, diverse interviewees, and a glimpse at human impacts around the world. By showing a film that showcased wild and urban environments far beyond the shores of New York City, I thought the Green Club members would better grasp the problems that face all of us on Earth. Based on the book by Robert Wright, [A Short History of Progress](#), the film's focus on the downsides of human progress appealed to me, as did its attempt to relay the complexities of modern decision-making. The Green Clubbers will themselves be faced with difficult decisions as they grow older, especially when it comes to resource consumption and their role in a consumerist society.

**What we did:** Jia Chen and Charlotte Drozd, two 10<sup>th</sup> grade officers in Green Club, picked between *Surviving Progress* and Al Gore's *An Inconvenient Truth* by viewing clips of each film. Once they decided on *Surviving Progress*, the Green Club conceived of the first annual Green Club Doc Day in which all students would be invited to view the film. A week before Doc Day, students **created posters for the event and placed them in the school's hallways**. On December 18<sup>th</sup>, approaching the winter solstice and its associated darkness, the club screened the film in front of ten or so students, some who had never participated in a Green Club event before. At the end of the film, I facilitated a **discussion about the film's message** and its relevancy for New Yorkers. The Green Clubbers agreed that students must be educated about the merits of not just recycling but reducing and reusing materials as well.

**Project planning:** A dozen students created beautiful environmentally themed posters for the first Doc Day. Jia Chen and Charlotte Drozd selected the film after viewing clips of it and *An Inconvenient Truth*.

**Student involvement:** Although the turnout was lower than expected due to simultaneous sporting events taking place, the Green Club members and guests who attended watched a film with weighty subjects with maturity. I was proud to hear student thoughts about waste management, fossil fuel consumption, pollution, urbanization, and technology after the showing.

**Promotion:** The posters were artfully created but did not gather the interest I expected for the inaugural Doc Day.

**Collaboration:** It is amazing to view what monetary resources and the backing of Martin Scorsese can bring to a film. From sweeping high definition panoramas of major cities to aerial views of the Amazon Rain Forest, *Surviving Progress* permitted students in my classroom to travel to far-off countries if only on a screen and for an hour and a half. Although we did not partner with any organizations to show the film, big names in science research,

environmental activism, and world policy (Jane Goodall and Stephen Hawking among them) offered valuable insight about the impact of humans on planet Earth.

### Educational components:

<p><b><u>25. Human Interaction and Effects of Human Intervention</u></b></p> <p>a. Positive and negative influences humans have had on the environment.</p> <p>b. Renewable and non-renewable resources.</p> <p>c. Making informed decisions based on research.</p> <p>d. Sustainability and stewardship.</p>	<p>- 5.3 Human Population Growth (p.142)</p> <p><b>Chapter 6: Humans in the Biosphere (p.152)</b></p> <p><b>Main Question: How have human activities shaped local and global ecology?</b></p> <p>- 6.1 A Changing Landscape (p.154)</p> <p>- 6.2 Using Resources Wisely (p.158)</p> <p>- 6.4 Meeting Ecological Challenges (p.173)</p> <p>- Preparing for the Living Environment Exam (p.183)</p>	<p>➤ 6.3c A stable ecosystem can be altered, either rapidly or slowly, through the activities of organisms (including humans), or through climatic changes or natural disasters. The altered ecosystem can usually recover through gradual changes back to a point of long-term stability.</p> <p><b>Key Idea 7: Human decisions and activities have had a profound impact on the physical and living environment.</b></p> <p><b>Key Idea 7, Clause 1: Population growth has placed new strains on the environment - massive pollution of air and water, deforestation and extinction of species, global warming, and alteration of the ozone shield. Some individuals believe that there will be a technological fix for such problems. Others, concerned with the accelerating pace of change and the ecological concept of finite resources, are far less optimistic. What is certain, however, is that resolving these issues will require increasing global awareness, cooperation, and action.</b></p> <p><b>Key Idea 7, Clause 2: Since the students of today will be the elected officials and informed public of tomorrow, the teacher should encourage a diversity of activities that will allow students to explore, explain, and apply conceptual understandings and skills necessary to be environmentally literate.</b></p>
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### Analysis

**What Worked:** The film was a success in showing students the pervasive and sometimes catastrophic global impact of humans. Students particularly enjoyed the film’s analysis of human behavior (humans were compared to chimpanzees in a few remarkable scenes), the film’s exploration of environmental challenges (workers in the Amazon struggling to feed their families were interviewed), and the film’s questioning of “progress.”

**What Didn’t Work:** I would have preferred if the documentary was more strictly focused on environmental challenges like resource consumption. Some students tuned out when the film diverged into analyses of the world’s governing elite and their influence on economic policy. The film did a wonderful job highlighting problems and demonstrating them visually but did little to offer hope for the young audience. It was more of an exploration of *this is how it stands* than of *this is what we can do to change it*. Many students said that it was depressing to see what humans are capable of. Though it is beneficial for them to be aware of global problems, I hope my students will remain optimistic about their individual and collective abilities to tackle those problems.

**Applicability to other Schools:** Doc Day can be enjoyed by any school with a film in mind and a projector. With many hands-on events scattered throughout the school year, the film viewing brought a change of pace and an opportunity to see far beyond the scope of New York City policy. The discussion at the end of the film can be directed with a set of guided questions. It is likely that a film like *Surviving Progress* is only appropriate for high school students (in line with its PG-13 rating). The bleak portrait it paints about human impact is likely too heavy for younger audiences.

**Measuring Success:** Many of my students had never before seen real footage of the threats to global ecosystems. By showing development at the expense of natural resources, the film offered a powerful message to my students about resource consumption and the requirement for humankind to reduce, reuse, and rethink.

## Project 6: Ban the Bag Conference Participation

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**PETITION TO BAN OR IMPOSE A FEE ON PLASTIC BAGS**

Dear Councilmember \_\_\_\_\_:

We, the members of the Green Schools Alliance, support a local ordinance mandating a ban or fee for single-use plastic carryout bags in New York City. These bags are designed to be used only for a short period of time, but their negative impacts last forever. Even when properly disposed of, plastic bags are easily windblown and often end up in waterways or on the landscape – where they become eyesores, clog storm drains, and endanger wildlife. In addition, the manufacture, transportation and disposal of plastic bags require large quantities of non-renewable resources. As the largest city in the United States, New York needs to join the many other cities that have already placed a ban or fee on these bags. New York City students represent the future of New York. We urge you to take responsibility for our future.

NAME: \_\_\_\_\_ PARENT \_\_\_\_\_ STUDENT \_\_\_\_\_

NYC COUNCIL DISTRICT: \_\_\_\_\_ SCHOOL (OPTIONAL) \_\_\_\_\_

ADDRESS (OPTIONAL) \_\_\_\_\_

EMAIL (OPTIONAL) \_\_\_\_\_

SIGNATURE \_\_\_\_\_



## Implementation

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**Why this:** Ms. Monika Garg, Maspeth High School's Assistant Principal, sent me an email notifying me about the Ban the Bag conference to be held at the Hewitt School in Manhattan. The club wanted to be educated about the environmental strains brought on by single-use plastic bags in New York City and assembled a group of 16 students to attend the event.

**What we did:** The attendees signed up for the Ban the Bag Conference online. On Saturday, March 2<sup>nd</sup>, club members met me at the Jackson Heights/Roosevelt Avenue subway station and rode the E train together into Manhattan. We took the 6 train to the Upper East Side and walked to our destination, the Hewitt School, a well-known private institution for girls in grades K-12. **The school's student-led Earth Committee organized the Ban the Bag Conference to "spearhead a campaign to convince City Council to either ban or impose a fee on plastic bags in NYC."** The Conference specifically addressed reasons for supporting the ban, strategies for launching the initiatives in partner schools, and a petition signing campaign.

The day started with a showing of the award winning documentary *Bag It*, which asks viewers to answer the question, **"Is your life too plastic?"** In the film Jeb Berrier reveals the omnipresence of plastic packaging in our modern society and shows the toll of plastics on terrestrial and marine ecosystems. The Green Club members were stunned to find out that plastic fragments outnumber plankton in the Pacific by a 40 to 1 ratio. Although plastic does not biodegrade, it photo-degrades into small and rounded pieces of plastic that accumulate in massive swirling garbage patches. **The "garbage islands" we had all heard of floating in the Pacific are nearly impossible to remove as they exist in billions of fragments under the surface. Those pieces, however unsightly, are even more detrimental when they can't be seen,** as they enter the digestive tracts of marine organisms, often killing them. With plastics entering the food chain, *Bag It* assesses chemical impacts on human health.

The Hewitt School next had a panel of experts speak to the large number in attendance about single-use plastic bags. **They were: Jennie Romer, Founder and Director of plasticbaglaws.org, Ron Gonen, Mayor Bloomberg's Deputy Commissioner for Recycling and Sustainability, Stiv Wilson, Communications and Policy Director of the 5 Gyres Institute, Eric Goldstein, New York City Environment Director of the Natural Resources Defense Council, and Maite Quinn, of Sims Solid Waste and Recycling.** The panelists debated the merits of banning or taxing single use bags and talked about how harmful they can be in and out of city limits. Student moderators from a number of private schools in Manhattan then asked the panelists questions.

During the lunch break, Green Clubbers had a chance to guess the number of plastic bags in a mystery container, write reasons to Ban the Bag on a giant banner, and enter into a drawing for the grand prize of airfare to any U.S. destination. The club was able to tour the nearby and carefully managed Central Park during this break too, many members for the first time. The conference re-commenced with students from various schools breaking up into smaller groups to discuss **the day's events and to brainstorm** advocacy decisions. This culminated with club members signing the petition. They pledged their support to ban the bag.

**At the end of the event, the Maspeth High School Green Club was awarded a plaque for having the "greatest participation" as a result** of the large contingent that travelled from Queens to Manhattan. MHS was the only public high school to take part in the conference, exceeding the representation of many private schools based in Manhattan. Vahe Hakobyan, a ninth grader in the club, came closest to guessing the number of plastic bags in the mystery container and was awarded a gift certificate.

**Project planning:** Without Ms. Monika Garg's involvement, it is likely the Green Club would not have found out about the conference. I coordinated the subway station meeting place and route. Many thanks are owed to the Hewitt School staff and students for organizing a world-class event.

**Student involvement:** Permission slips were distributed the Wednesday before the event and thankfully many students were able to venture into Manhattan on short notice. The sixteen ninth and tenth graders involved were very well-behaved on route and contributed meaningfully to the day's events. **As we registered later than many other schools, Maspeth students unfortunately did not have representation in the student-led question and answer session**

following the panel. Nevertheless, my students were thrilled to see other students their age show poise and determination in advocating for change.

**Promotion:** The Hewitt School promoted the conference heavily among their network schools. They posted the event on a DOE website which is how Ms. Garg discovered the event for the club. Not only did Hewitt School organizers hang banners outside and inside their school for the event, they generously donated fabric bags with an event graphic for every participant in the conference. Mascots swathed in plastic bags were particularly motivating as they showed small and lightweight bags can quickly become a massive problem.

**Collaboration:** I received a number of tips from Diana Biagioli, a member of the PS89 Green and Wellness Team in Battery City. Joann Wolf of the Hewitt School was instrumental in coordinating the day's events, making our club members feel welcome at the school, and following up with us after the event. Joann sent digital copies of the petition for our Green Club members to sign. A number of schools in Manhattan collaborated in making the Ban the Bag Conference truly student-led.

**Educational components:**

		<ul style="list-style-type: none"><li>➤ <b>1.1c</b> Science provides knowledge, but values are also essential to making effective and ethical decisions about the application of scientific knowledge.</li></ul>
		<p><b>Performance Indicator 1.2:</b> Hone ideas through reasoning, library research, and discussion with others, including experts.</p> <ul style="list-style-type: none"><li>➤ <b>1.2a</b> Inquiry involves asking questions and locating, interpreting, and processing information from a variety of sources.</li></ul> <p><b>Performance Indicator 7.1:</b> Describe the range of interrelationships of humans with the living and nonliving environment</p> <ul style="list-style-type: none"><li>➤ <b>7.1a</b> The Earth has finite resources; increasing human consumption of resources places stress on the natural processes that renew some resources and deplete those resources that cannot be renewed.</li><li>➤ <b>7.1b</b> Natural ecosystems provide an array of basic processes that affect humans. Those processes include but are not limited to: maintenance of the quality of the atmosphere, generation of soils, control of the water cycle, removal of wastes, energy flow, and recycling of nutrients. Humans are changing many of these basic processes and the changes may be detrimental.</li><li>➤ <b>7.1c</b> Human beings are part of the Earth's ecosystems. Human activities can, deliberately or inadvertently, alter the equilibrium in ecosystems. Humans modify ecosystems as a result of population growth, consumption, and technology. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors is threatening current global stability, and if not addressed, ecosystems may be irreversibly affected.</li></ul> <p><b>Performance Indicator 7.2:</b> Explain the impact of technological development and growth in the human population on the living and nonliving environment.</p> <ul style="list-style-type: none"><li>➤ <b>7.2a</b> Human activities that degrade ecosystems result in a loss of diversity of the living and nonliving environment. For example, the influence of humans on other organisms occurs through land use and pollution. Land use decreases the space and resources available to other species, and pollution changes the chemical composition of air, soil, and water.</li></ul>

## Analysis

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**What Worked:** The Ban the Bag Conference was one of the defining moments of the Green Club's year. Not only did it enlighten group members about an environmental problem, it showed that their advocacy can effect change. Single-use plastic bags, if somewhat convenient, incur a terrible toll on many habitats globally, threaten some marine species with extinction, and inflict yet-to-be-fully understood hazards on the global food chain. I loved that students were able to view a documentary, listen to leading experts, ask questions, visit Central Park, discuss impacts, and sign a petition, all in one day. Jennie Romer was so impressed by the Green Club she offered to come to our school to speak at an assembly *pro bono*.

For Maspeth students to see the facilities of the third most expensive private school in America was valuable. The Hewitt School educates young women to be leaders, a primary goal of Maspeth High School for its co-ed population. Many of the Green Clubbers said our science facilities compare favorably, making them realize the abundant opportunities present in a New York City public school.

**What Didn't Work:** I would have liked to see even more high school students attending the conference.

**Applicability to other Schools:** The Hewitt School staff and student leaders put a great deal of hard work into organizing and hosting the conference. With a dedicated group of student volunteers, any school could create a such a conference for change.

**Measuring Success:** The Ban the Bag Conference and its associated petition drive are central components of the Green Club's mission to reduce waste in New York City. By banning single-use plastic bags or imposing a fee for them, New York City could follow many other cities in America and countries worldwide in reducing a key part of the waste stream. A per-bag fee of only twenty cents in Ireland reduced plastic bag consumption by 94%. By signing the Ban the Bag petition, Green Club students are at the forefront of a campaign that will lead to a better New York.

## Project 7: Anti-Litter PSA

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## Implementation

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**Why this:** The Green Club participated in the anti-litter video PSA contest sponsored by the New York City Parks and Recreation Department last year and was eager to do so again this year. Having attended the Ban the Bag Conference, the club chose to target single-use plastic bags in their anti-litter message.

**What we did:** In an April Green Club meeting, sixteen club members developed a script for the PSA. Trying to keep their message simple yet strong (and within the 30-second time frame allotted), the club members chose to have Daniela Laska blow a plastic bag into the air (as if wishing for something). Conveniently, when this was filmed the plastic bag blew into the path of the camera and blocked the lens completely. After this slow-motion segment, the Green Clubbers in unison recite, "When you dream of the future, is this what you see?" Immediately afterward, still shots of plastic bags dominating landfills and overflowing from garbage bins in New York subways appear. The instrumental track "The Light" by the group The Album Leaf builds in the background. The sobering pictures give way to Green Club president Jia Chen saying, "This is the world *you* live in," and vice president Iris Chen joining her to say "Keep it Beautiful." In a redemptive way, a side shot of Daniela edited in reverse has a plastic bag descend from high in the air back to her hand which cuts to Daniela walking in slow motion and smiling. The end of the message features Sylvia Kwapisiewicz blow flowers taken from our indoor learning garden onto the school field. This part represents the restoration of nature and the fulfillment of a wish. The PSA concludes with the sixteen Green Club members saying, "Brought to you by the Maspeth High School Green Club."

**Project planning:** I chose the track by the group Album Leaf for its initial crescendo to match the urgency of the plastic bag problem (and litter in general) in New York. The rhythms and floating instrumentals give tenderness to the Green Club's message. Though I suggested the wish idea, the Green Clubbers created the script and asked to include still images of a plastic wasteland. When the rough shots were complete, I edited them into the 30 second PSA and sent the finished product to the New York City Parks and Recreation Department's Green Team soon after to meet the contest deadline.

**Student involvement:** Daniela, Sylvia, Jia, and Iris volunteered for the major parts. A strong showing of sixteen students participated in the PSA.

**Promotion:** If we are as fortunate as last year, the video PSA will be part of an outdoor summer movie series put on by the Parks Department. This would be the best form of promotion for our cause, and thankfully one that wouldn't consume any paper resources!

**Collaboration:** The Green Club is grateful the New York City Department of Parks and Recreation holds this annual contest. It is a superb way to engage students in activism because it lets them decide their specific message and show off their creativity.

### Educational components:



➤ **7.2c Industrialization brings an increased demand for and use of energy and other resources including fossil and nuclear fuels. This usage can have positive and negative effects on humans and ecosystems.**

## Analysis

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**What Worked:** In only a day, the Green Club brainstormed ideas for a script, polished their message, and created a short yet powerful PSA. They were able to use their new-found knowledge from the Ban the Bag Conference to tailor a message about the dangers of single-use plastic bags in New York.

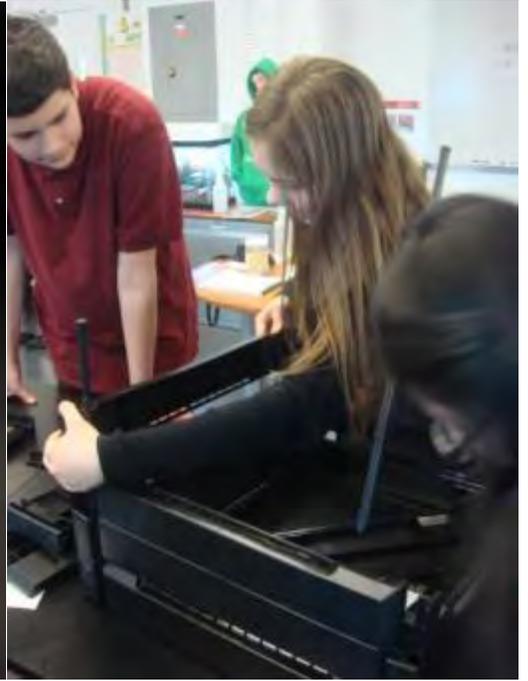
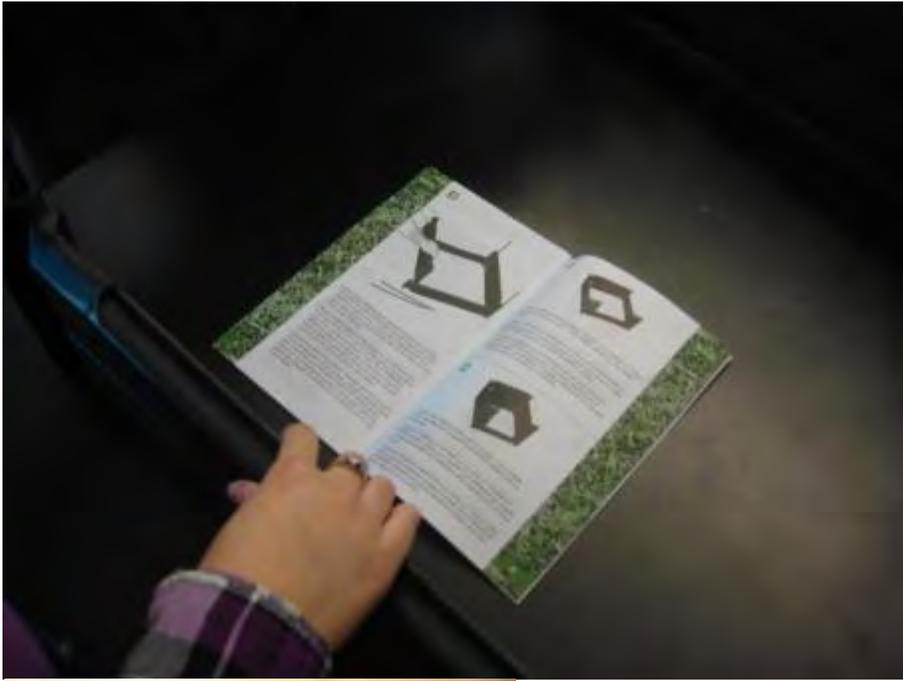
**What Didn't Work:** The day of filming was very windy, which made capturing the voices of participants in outdoor scenes difficult. It also forced the plastic bag we used as a prop to veritably take off. On one take, it soared into the air, over the fence, and off school property. This clearly demonstrates the ease at which plastic bags can leave their desired location (i.e. a garbage bin) to become eyesores and environmental hazards elsewhere.

**Applicability to other Schools:** The New York City Department of Parks and Recreation's anti-litter PSA contest is open to all teens between the ages of 13 and 17.

**Measuring Success:** Whether the PSA is screened elsewhere or not, it successfully captured the genuine sentiments of Green Club members who truly care about making New York City a better place to live. The smiles I saw on student faces after filming their scenes was a great reward for me. A colleague, when viewing the video, told me it made her want to cry it was so beautiful. If others are moved in a similar way, perhaps word will get out that a reduction in plastic bags and packaging will be good for New York.

## Project 8: School and Cafeteria Composting











**Compost Bin**

**Greens**

- Fruit, Vegetable Scraps, Coffee Grounds, Tea Bags, Fresh Leaves, Yard Prunings, Grass Clippings, Rabbit Droppings.

**Browns**

- Fall Leaves, Shredded Paper, Straw, Hay, Wood Chips, Twigs, Bread and Grains.

**Compost Bin**

**Greens**

- Fruit, Vegetable Scraps, Coffee Grounds, Tea Bags, Fresh Leaves, Yard Prunings, Grass Clippings, Rabbit Droppings.

**Browns**

- Fall Leaves, Shredded Paper, Straw, Hay, Wood Chips, Twigs, Bread and Grains.



## Implementation

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**Why this:** I was intrigued when visiting the Union Square Market to see the scale of the community compost program put in place by the Lower East Side Ecology Center. Volunteers there told me about how Manhattan residents were already coming out in force to give old food new life. Composting is a wonderful way to reduce what ends up in trash bags and later landfills. Not only can an abundance of school refuse be composted on site rather than exit a campus in the waste stream, the soil it transforms into during composting can be re-used in gardening projects, showcasing the cycle of life. Composting is hands-on and for many New York City school children, a mystery worth unveiling.

**What we did:** I spoke with Luke Halligan, Compost Educator with the NYC Compost Project in Brooklyn, about acquiring a Garden Gourmet compost bin through the NYC Compost Project (a division of the New York City Department of Sanitation's Bureau of Waste Prevention, Reuse, and Recycling). Although he was scheduled to leave early that day, he was kind enough to wait for me to drive from Maspeth High School in Queens to his office near the beautiful Brooklyn Botanic Garden, a half-hour away. Purchasing the compost bin through this program appealed to me not only because of the reduced cost and high quality materials of Garden Gourmet composters (\$65 for a bin that retails for a minimum of \$75 and \$99 at Home Depot), but because of the educational support offered. Home Depot workers, when I called **inquiring about available compost products, often didn't know what a compost bin was**. Mr. Halligan was friendly and supportive. When I arrived at his office, he gave me brochures and pamphlets about composting to distribute to the Green Club students. The Green Club ended up purchasing two bins in anticipation of the volume of compostable materials generated at the school day.

The Green Club members split up into two teams to assemble the Garden Gourmet compost bins. I resolved to let them handle the assembly from start to finish without assistance from me. Made of strong recycled plastic, the bins **feature air ports, sturdy snapping lids (with compost do's and don'ts molded into the plastic), and a lifting door at the bottom** to remove soil following composting. In about twenty minutes, one group had finished putting together their compost bin and offered assistance to the second group. A short time later, the bins were standing side-by-side in my classroom. **I hadn't even glanced at the directions.**

The following weekend a number of students participated in the Maspeth Recycling Event (see below) where they were treated to a compost demonstration by a Compost Educator from the Queens Botanical Garden. Members were wowed by the sight of red wriggler worms at work in a worm bin. To see them ingesting plant matter, newspaper clippings and other waste and converting it to nutrient rich excrement was amazing. Green Clubbers shredded vegetables and added them to the mix. Nearby were plants being grown in the soil extracted from similar worm bins.

The next week at school the Green Clubbers were intent on putting the recently built school compost bins outside where they could be put to use. Several members anchored the two compost bins to soil in a south-facing location (to ensure adequate heating of the interior compost). The bins were placed adjacent to the patch of earth selected to be **the future home of the club's greenhouse.**

Almost immediately, common school items that would have otherwise been bagged as trash were removed from the **school waste stream to incubate the school's compost bins. The Biology classrooms contributed dead flowers and** leaves, rabbit droppings, pine shavings, and corn stalks from a previous gardening project. I collected banana peels and slices of red peppers while doing my lunch duty rounds to add to the compost mix. I was fortunate to have so many students want to contribute. They were keen to ask questions about what composting involves and what it will mean for **the school's** waste production.

I created the very first Classroom Compost bin for our school in my biology classroom by modifying a green recycling bin. I read the resources provided by Mr. Halligan and created two laminated pages revealing what can be added. **Under "Greens" are listed:** fruit, vegetable scraps, coffee grounds, tea bags, fresh leaves, yard prunings, grass clippings, and rabbit droppings. **Under "Browns" are listed:** fall leaves, shredded paper, straw, hay, wood chips, twigs, bread and grains.

**Project planning:** Jia Chen, the Green Club President, spearheaded the acquisition of the Garden Gourmet composters by reminding me about the need to reduce cafeteria waste. The Green Clubbers carefully chose the location of our compost site to maximize its usefulness near both the greenhouse space and the school cafeteria.

**Student involvement:** Two student teams of approximately five each were entirely responsible for the construction of the Garden Gourmet bins. They took the bins out of the box, sorted the materials, read the assembly instructions, and built the bins without any help from an adult. Green Clubbers were able to observe first-hand how a worm bin works by attending the Maspeth Recycling Event. They were excited to view and handle the red wiggler worms that serve as detritivores in their manmade ecosystem. Members of the Green Club carried the compost bins from my classroom on the third floor to their outdoor destination and staked them into position. Thomas Farrell and Randy Thio were particularly helpful in making sure the compost bins wouldn't blow over in the wind, securing the soil around the bins and placing heavy rocks over the plastic at the bottom of the bins.

**Promotion:** The compost bins were positioned outside the school where they can be seen by people on 74<sup>th</sup> Street and 57<sup>th</sup> Avenue. They are themselves an everyday advertisement of the Green Club's mission.

**Collaboration:** The Lower East Side Ecology Center provided a spark for our school's compost program. Compost Educators with the Brooklyn Botanic Garden and the Queens Botanical Garden were integral in getting Maspeth High School's compost program underway. They offered advice, resources, and demonstrations for our club.

### Educational components:

- Preparing for the Living Environment Exam (p.149)
- 6.3 Biodiversity (p.166)
- 21.3 The Ecology of Protists (p.610)

Competition can also occur within species. Competition may be for abiotic resources, such as space, water, air, and shelter, and for biotic resources such as food and mates. Students should be familiar with the concept of food chains and webs.

**Performance Indicator 6.1: Explain factors that limit growth of individuals and populations.**

- **6.1a** Energy flows through ecosystems in one direction, typically from the Sun, through photosynthetic organisms including green plants and algae, to herbivores to carnivores and decomposers.
- **6.1b** The atoms and molecules on the Earth cycle among the living and nonliving components of the biosphere. For example, carbon dioxide and water molecules used in photosynthesis to form energy-rich organic compounds are returned to the environment when the energy in these compounds is eventually released by cells. Continual input of energy from sunlight keeps the process going. This concept may be illustrated with an energy pyramid.
- **6.1c** The chemical elements, such as carbon, hydrogen, nitrogen, and oxygen, that make up the molecules of living things pass through food webs and are combined and recombined in different ways. At each link in a food web, some energy is stored in newly made structures but much is dissipated into the environment as heat.
- **6.1d** The number of organisms any habitat can support (carrying capacity) is limited by the available energy, water, oxygen, and minerals, and by the ability of ecosystems to recycle the residue of dead organisms through the activities of bacteria and fungi.

## Analysis

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**What Worked:** The compost project has been a resounding success so far. Classroom and cafeteria waste that was once thrown out can now be re-used and turned into valuable compost. The bins themselves are made of strong plastic that is at least 50% post-consumer. With the greenhouse and compost bins situated together, soil can be generated in the compost bins for use in the gardening projects within the greenhouse. One of the exits of the school cafeteria leads directly into the area, allowing cafeteria greens and browns to be added to the compost bins. This will ultimately recycle waste food into new food. Importantly, it will reduce the volume of school waste that is placed into plastic trash bags and placed curbside for Department of Sanitation pickup. The compost bins will also serve as a significant role in education, as they can be visited by science students to see real-life carbon and nitrogen material cycles.

**What Didn't Work:** The compost program is only in its infancy and at the current time cannot handle all of the compostable waste generated by Maspeth High School. Many students take fruit and vegetables from the school cafeteria at the urging of well-meaning cafeteria staff only to discard them uneaten in the trash at the end of their lunch periods. Educating students about waste reduction must explore wasteful purchasing and wasteful practices before exploring composting possibilities and benefits. Ideally, educational and public policy decisions would be made that would truly encourage healthy eating habits rather than merely offer healthy eating choices that remain undesirable to the majority of high school students. To *show healthy* is one thing, to *be healthy* is another.

**Applicability to other Schools:** For a bargain price, the Green Club purchased two 82 gallon composters through the New York City Composts program. Discarded food items and plant-based materials will now serve a role in the creation of new food. We are fortunate to have the Queens Botanical Garden and the Brooklyn Botanic Garden nearby, along with their expert and helpful staff. All schools in New York City can contact Compost Educators to enrich their science curriculum. The Green Club has been invited to tour the Queens Botanical Garden, a 39-acre living museum; we plan to do so before the school year finishes. The resources provided by Mr. Halligan of the NYC Compost Project are ideal for compost beginners.

**Measuring Success:** We have already seen success in the program because rabbit droppings, leaves, and food items are being left out of trash cans and subsequently, left out of landfills where their nutrients would go to waste. By reusing the molecules in those materials, we are continuing the cycle of life and contributing to our garden projects. The day we scoop a shovel-full of soil from the Garden Gourmet composters and deposit the soil into planters for our greenhouse will be a very exciting day indeed! The Green Club looks forward to continuing to learn about the decomposition process in a hands-on way.

# Project 9: Gardening and Greenhouse Building

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**OREGANO**  
*Common*

\$1.99  
20 grams

**PERENNIAL**  
Daisy-like, bushy herb with strong, spicy fragrance.

**WINTER**  
Like this herb, oregano is a perennial herb that can be used in many dishes.

**PARSLEY**  
*Flat Leaf*

\$1.99  
1.5 grams

**COOL SEASON BIENNIAL**  
Suitable for early spring to late summer.

**WINTER**  
Daisy-like, bushy herb with strong, spicy fragrance. It is a perennial herb that can be used in many dishes.

**CILANTRO/CORIANDER**  
*Long Standing*

\$3.49  
20 grams

**ANNUAL**  
Cool season herb with a strong, spicy fragrance.

**WINTER**  
The leaves (cilantro) and seeds (coriander) of this herb are used throughout the world. Fresh cilantro leaves have a strong, spicy fragrance and are used in many dishes. Dried coriander seeds add a spicy, earthy flavor to many dishes.

**BASIL**  
*Italian Common*

\$3.49  
10 grams

**ANNUAL**  
Full sun herb with a strong, spicy fragrance.

**WINTER**  
The leaves of basil are used in many dishes. It is a perennial herb that can be used in many dishes. Basil leaves are used in many dishes, including soups, salads, and pasta.

Name: Cattie



Common Plant Name: Cat Palm  
Scientific Name: *Chamaedorea cataractarum*  
Home Range: Southeastern Mexico  
Habitat: Tropical Rainforest

Kingdom: Plantae  
Clade: Angiosperms  
Clade: Monocots  
Clade: Commelinids  
Order: Aspales  
Family: Asacaceae  
Genus: Chamaedorea  
Species: C. cataractarum

Name: Blossom



Common Name: Moth Orchid  
Scientific Name: *Phalaenopsis amabilis*  
Home Range: Asia, South America, and Central America  
Habitat: Tropical Rainforest

Kingdom: Plantae  
Clade: Angiosperms and Monocots  
Order: Asparagales  
Family: Orchidaceae  
Subfamily: Epidendroideae  
Tribe: Vandaeae  
Subtribe: Aeridinae  
Alliance: Phalaenopsis  
Genus: Phalaenopsis  
Species: Phalaenopsis amabilis





Teachers do a good job engaging students in the lessons...

and try to bring real world examples into the classroom.

## Implementation

**Why this:** The Green Club oversees indoor and outdoor gardening at the school. The plants grown in biology classrooms give an aesthetic appeal, encourage learning, and remove carbon dioxide from the air while yielding oxygen. They are an everyday showcase of the chemical processes of photosynthesis, of the internal and external anatomies of leaves, stems, and roots, of the presence of the pigment chlorophyll, and of tropisms (plant responses to stimuli such as light and gravity). Representatives from InsideSchools.com made a note of this in their online report about Maspeth High School. The flowering plants serve as reminders about the reproductive capabilities of angiosperms.

The gardening program and the recently installed compost program will venture forward as simultaneous and synergistic entities. The plants, when pruned, will serve as compost materials. The soil, when generated by the composters and their diverse community of decomposing organisms, will be used to support plant communities.

**What we did:** The Green Club used its Earth Day New York indoor learning garden not for organic lettuce this year but instead to cultivate an indoor flower garden. The zinnia, nasturtium, and marigolds added color and beauty to the classroom and saved the biology department money too. After all, instead of spending money to buy cut flowers for flower dissections, classroom-grown varieties could be shown as living specimens on the stem or picked on an

ongoing basis as needed. This lessened fossil fuel consumption elsewhere as many flowers are shipped from far-off locales before arriving in New York City.

The Green Club planted different varieties of corn at the beginning of the year. In the spring, they purchased USDA certified organic seeds from Naty Brooklyn and planted oregano, parsley, cilantro, basil, and onions. The Green Club also helped to maintain the many plants in my classroom, watering them, pruning them, and creating organism fact sheets showing **the plants' common and scientific names**, home range, and habitat type. This final step added a museum feel to the classroom for visitors.

In autumn, Mr. Mario Matos, Mr. Stephen Sigler, and I toured the roof of the building to assess the feasibility of a rooftop garden and greenhouse. Because of space constraints and obstacles (i.e. electrical wires, heating and cooling units, vents), we determined that it would be best to place our outdoor gardening space in a south facing corner patch of the school at ground level. The school purchased a **8'x12' aluminum and Plexiglas greenhouse from Harbor Freight** (through One Stop Gardens) which is currently in boxes at the school. The Green Club members are excited to assist in its construction in the coming weeks.

Following a plant tropism lab in which every student grows four corn seedlings over the course of a week, the biology department encouraged students to take the young plants home for planting. This allowed students to expand on their initial learning and to conduct their own experiment with household or outdoor gardening.

**Project planning:** Mr. Stephen Sigler, the head custodian at Maspeth High School, has been a great advocate for our greenhouse project and provided advice and labor to bring it to fruition. Mr. Matos has supported the project all year. **Ms. Sue D'Ambra, Maspeth High School's secretary, found a coupon for the Harbor Freight greenhouse and ordered it for the club.**

**Student involvement:** The Green Club carefully planned the greenhouse project. They viewed aerial photos of the school on Google Earth, observed light availability in the winter, and measured property dimensions. They will be able **to assist Mr. Sigler's staff in the raising of the Greenhouse. A number of students helped indoors by pruning, watering, and planting seeds.**

**Promotion:** My classroom has become a sort of promotion for the Green Club. **Many students I don't teach visit and are amazed to see how much life exists inside the room's confines. This has encouraged a handful to join the Green Club where they can participate in other projects. The greenhouse will be strategically located not just in a place that will receive adequate light but in a place that will reveal to people on the street that our school is serious about local, organic, and sustainable agriculture. Our ultimate goal is to grow food to supplement the school's functions. For example, we might be able to provide tomatoes for next year's multicultural potluck dinner sponsored by the Key Club. By offering food on site that is not linked to shipping costs or pesticides, we will encourage students at our school to rethink what they eat and where they obtain food from.**

**Collaboration:** The outdoor gardening project would not be possible without the collaboration of the school administrators, teachers, custodial staff, and students. The indoor learning garden awarded to the Green Club last year continues to be a high-quality and vibrant learning tool.

## Educational components:

### 9. Cell Processes

- a. Photosynthesis.
- b. Cellular respiration.
- c. The role of enzymes.
- d. Biosynthesis.

- 2.4 Chemical reactions and Enzymes (p.50)

#### Chapter 8: Photosynthesis (p.224)

*Main Question: How do plants and other organisms capture energy from the sun?*

- 8.1 Energy and Life (p.226)
- 8.2 Photosynthesis: An Overview (p.230)
- 8.3 The Process of Photosynthesis (p.235)
- Preparing for the Living Environment Exam (p.245)

#### Chapter 9: Cellular Respiration and Fermentation (p.248)

**Key Idea 1, Clause 1:** Living things are similar in that they rely on many of the same processes to stay alive, yet are different in the ways that these processes are carried out.

**Key Idea 5, Clause 1:** Life is dependent upon availability of an energy source and raw materials that are used in the basic enzyme-controlled biochemical processes of living organisms. These biochemical processes occur within a narrow range of conditions.

**Performance Indicator 5.1:** Explain the basic biochemical processes in living organisms and their importance in maintaining dynamic equilibrium.

- **5.1a** The energy for life comes primarily from the Sun. Photosynthesis provides a vital connection between the Sun and the energy needs of living systems.
- **5.1b** Plant cells and some one-celled organisms contain chloroplasts, the site of photosynthesis. The process of photosynthesis uses solar energy to combine the inorganic molecules carbon dioxide and water into energy-rich organic compounds (e.g., glucose) and release oxygen to the environment.

### 20. Bio-engineering and Bio-ethics

- a. Artificial selection/selective breeding.
- b. How technology has influenced the understanding of genetics.
- c. Recombinant DNA.
- d. How genetics can be used in modern-day society.

- 24.4 Plants and Humans (p.715)

#### Chapter 15: Genetic Engineering (p.416)

*Main Question: How and why do scientists manipulate DNA in living cells?*

- 15.1 Selective Breeding

**Performance Indicator 2.2:** Explain how the technology of genetic engineering allows humans to alter genetic makeup of organisms.

- **2.2a** For thousands of years new varieties of cultivated plants and domestic animals have resulted from selective breeding for particular traits.
- **2.2b** In recent years new varieties of farm plants and animals have been engineered by manipulating their genetic instructions to produce new characteristics.

## 15. Fertilization and Development

- a. Asexual vs. sexual reproduction.
- b. Process of fertilization.
- c. The stages of development from zygote to fetus.
- d. Reproduction, growth, and alteration of generations in seed plants.

- 28.3 Reproduction (p.819)
- 34.3 The Reproductive System (p.988)
- 34.4 Fertilization and Development (p.995)
- Preparing for the Living Environment Exam (p.1005)

### **Chapter 24: Plant Reproduction and Response (p.694)**

*Main Question: How do changes in the environment affect the reproduction, development, and growth of plants?*

- 24.1 Reproduction in Flowering Plants (p.696)
- 24.2 Fruits and Seeds (p.704)
- 24.3 Plant Hormones (p.708)
- Preparing for the Living Environment Exam (p.723)

**Key Idea 4:** The continuity of life is sustained through reproduction and development.

**Key Idea 4, Clause 1:** Species transcend individual life spans through reproduction. Asexual reproduction produces genetically identical offspring. Sexual reproduction produces offspring that have a combination of genes inherited from each parent's specialized sex cells (gametes). The processes of gamete production, fertilization, and development follow an orderly sequence of events. Zygotes contain all the information necessary for growth, development, and eventual reproduction of the organism. Development is a highly regulated process involving mitosis and differentiation. Reproduction and development are subject to environmental impact. Human development, birth, and aging should be viewed as a predictable pattern of events. Reproductive technology has medical, agricultural, and ecological applications.

**Performance Indicator 4.1:** Explain how organisms, including humans, reproduce their own kind.

- **4.1a** Reproduction and development are necessary for the continuation of any species.
- **4.1b** Some organisms reproduce asexually with all the genetic information coming from one parent. Other organisms reproduce sexually with half the genetic information typically contributed by each parent. Cloning is the production of identical genetic copies.
- **4.1c** The processes of meiosis and fertilization are key to sexual reproduction in a wide variety of organisms. The process of meiosis results in the production of eggs and sperm which each contain half of the genetic information. During fertilization, gametes unite to form a zygote, which contains the complete genetic information for the offspring.
- **4.1d** The zygote may divide by mitosis and differentiate to form the specialized cells, tissues, and organs of multicellular organisms.

- Preparing for the Living Environment Exam (p.149)
- 6.3 Biodiversity (p.166)
- 21.3 The Ecology of Protists (p.610)

Competition can also occur within species. Competition may be for abiotic resources, such as space, water, air, and shelter, and for biotic resources such as food and mates. Students should be familiar with the concept of food chains and webs.

**Performance Indicator 6.1: Explain factors that limit growth of individuals and populations.**

- **6.1a** Energy flows through ecosystems in one direction, typically from the Sun, through photosynthetic organisms including green plants and algae, to herbivores to carnivores and decomposers.
- **6.1b** The atoms and molecules on the Earth cycle among the living and nonliving components of the biosphere. For example, carbon dioxide and water molecules used in photosynthesis to form energy-rich organic compounds are returned to the environment when the energy in these compounds is eventually released by cells. Continual input of energy from sunlight keeps the process going. This concept may be illustrated with an energy pyramid.

## Analysis

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**What Worked:** Our gardening projects are ongoing but so far, the Green Club has brought an abundance of life to the school. The acquisition of a greenhouse fulfilled a major goal. Plant matter obtained from the gardening projects has already been added to our fledgling compost program.

**What Didn't Work:** The Green Club's classroom corn plants died over the long spring break. They were nevertheless recycled by being among the first things added to the compost bins. I would have liked to have the greenhouse built earlier in the year to take advantage of its insulative properties.

**Applicability to other Schools:** We are fortunate at Maspeth to have a supportive administration and resources available to purchase the materials for our gardening projects. Even if money is not available, schools can apply for grants (for example, through GrowNYC) to gain funding or supplies.

**Measuring Success:** Everyday provides a new opportunity in my biology classroom to use the plants grown by the Green Club as subjects in my lessons. I can differentiate between dicots and monocots, show the desert adaptations of a cactus, review the life cycles and gametogenesis steps of mosses and ferns, show off the water-holding capacity of succulents like jade and aloe, show the anthers and ovary of flowers, and provide students with a taste of fresh herbs. As InsideSchools lists on its website, "Teachers do a good job engaging students in the lessons and try to bring real world examples into the classroom." A living classroom (cared for by Green Clubbers) is a wonderful way to make science relevant and meaningful so that adults of the future are equipped with the knowledge and compassion required to be responsible stewards of our planet. In a way, this project is more about reducing negligence than it is about reducing school waste, although surely people that are educated at Maspeth will waste less. The biodiversity evident through our garden program, even if a microcosm of Earth's biodiversity, lets kids know that our planet is worth protecting. It also activates them to contribute.

# Project 10: Maspeth Recycling Event

**RECYCLE FOR EARTH DAY**  
SPONSORED BY  
COUNCIL MEMBER ELIZABETH CROWLEY  
MASPETH FEDERAL SAVINGS BANK  
C.O.M.E.T & NYPD 104 PCT



Electronics Recycling \* Textile Recycling \* Paper Shredding  
VIN Etching for Vehicles — Saves Money on Insurance  
Register bicycles and electronics — Helps Recover Stolen Items  
Kitchen Composting Demonstration

April 20  
Maspeth Federal Savings Bank  
56-18 69th Street  
1:00 P.M. - 5:00 P.M.

Services Generously Provided By









## Implementation

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**Why this:** The Maspeth Recycling Event held on Saturday, April 20<sup>th</sup> allowed the Maspeth High School Green Club to participate in a community-wide reduce, reuse, and recycle campaign. It was a level of scale only possible with the cooperation of numerous groups. The event, held just blocks from the high school, was sponsored and hosted by the Maspeth Federal Savings Bank with the MHS Green Clubbers serving as the volunteer corps for the event. Also present were representatives from the Queens Botanical Garden (to demonstrate compost techniques – see above), members of GrowNYC (to educate the public about recycling and to accept textiles for recycling), a team from GreenChip Electronic Waste Solutions, and workers from USA Shred, a paper shredding and recycling program. Proudly, we were able to once again team up with Council Member Elizabeth Crowley of the 30<sup>th</sup> Council District to better our community. Council Member **Crowley's dedicated staff always seek to get us involved in neighborhood projects**, and they informed us of the event. Because of its diversity of offerings, the Recycling Fair was a culminating moment for the MHS Green Club to fulfill its mission to reduce, reuse, and recycle.

**What we did:** I joined a group of nine Green Clubbers on a Saturday afternoon at 12:45 PM at the Maspeth Federal Savings Bank in Maspeth. Members of the club assisted Ms. Jill Nicolais, the Director of Marketing and Public Relations with the bank, in setting up tables and chairs. Soon after the event opened officially, a long line of neighborhood residents formed to dispose of household waste responsibly. Most of them had bags or boxes full of paper to be shredded and recycled. The USA Shred truck was fascinating to watch; a robotic device first lifted a plastic garbage container full of paper into the truck where an internal shredder (on camera for those outside) took care of the rest. The Green Clubbers carried the boxes for less able-bodied individuals and often helped people take recyclables from their vehicles to the proper location.

GreenChip Electronic Waste Solutions ([www.greenchiprecycling.com](http://www.greenchiprecycling.com)) had the students assist them in carrying old televisions, computer hard drives, printers, and other miscellaneous electronics to pallets for packaging. Bill Monteleone guided the students through the salvaging of plastics and metals like copper. GreenChip prevents old electronics (some of them mercury containing) from entering landfills. They process materials in their Brooklyn location and sell them back to electronics manufacturers that reuse the materials for new devices. Students were thrilled to find out that an old printer could be reborn as a Samsung tablet or flatscreen. Mr. Monteleone invited the **Green Club to tour GreenChip's facility, which we can't wait to do!**

Jon Klar, a Recycling Outreach Coordinator for the Office of Recycling Outreach and Education (a part of GrowNYC), gave an educational lesson about New York City recycling protocols, having Green Clubbers guess which containers sample waste items belonged in. He told the club that 6% of the waste in New York comes from textiles (which he was accepting for recycling). He and a helper collected dozens **of bags filled with clothes to ensure they don't end up** in landfills. Mr. Klar gave me event flyers that helped me plan upcoming events for the Green Club. He spoke to the club about sustainable practices.

A few individuals brought items that were not slated to be recycled at the Fair. One item was a framed print of the water color *Chevaux en Camargue* by the painter Yves Brayer. The scene shows horses in the climatically unique region of France where the Rhone River meets the Mediterranean Sea; I took the print to be reused in my classroom. **Another item we breathed new life into was a discarded Bloomingdale's bag that can transport biology materials.**

The Maspeth Federal Savings Bank provided re-usable canvas bags which now join similar bags the Club has been awarded from the Department of Sanitation and the Ban the Bag Conference. **Council Member Crowley's Office** supplied recycling reading materials and stickers. Members of the 104<sup>th</sup> precinct carried out VIN etching for vehicles and registered bicycles and electronics.

**Project planning:** Ms. Jill Nicolais met our group at the start of the event and coordinated their involvement. Ms. Katherine Mooney, the Deputy Chief of Staff for Council Member Crowley, invited us to attend and scheduled us to be the volunteers for the event.

**Student involvement:** Nine students participated in the event, providing most of the human power. Residents from Maspeth and nearby neighborhoods of Queens were happy to have their help, and remarked about how meaningful it is to see high school students giving back to their community.

**Promotion:** Flyers were distributed to businesses in Maspeth and electronic copies were emailed to various community organizations. A banner was hung outside the parking lot where the event took place, and many of the groups at the event brought their own banners.

**Collaboration:** The Maspeth High School Green Club is lucky to have so many groups to partner with. We were happy to join forces with Council Member Elizabeth Crowley and her staff, with staff members of the Maspeth Federal Savings Bank, with GrowNYC, with GreenChip, and with the 104<sup>th</sup> Precinct.

### Educational components:

<p><b>25. Human Interaction and Effects of Human Intervention</b></p> <ul style="list-style-type: none"><li>a. Positive and negative influences humans have had on the environment.</li><li>b. Renewable and non-renewable resources.</li><li>c. Making informed decisions based on research.</li><li>d. Sustainability and stewardship.</li></ul>	<ul style="list-style-type: none"><li>- 5.3 Human Population Growth (p.142)</li></ul> <p><b>Chapter 6: Humans in the Biosphere (p.152)</b></p> <p><i>Main Question: How have human activities shaped local and global ecology?</i></p> <ul style="list-style-type: none"><li>- 6.1 A Changing Landscape (p.154)</li><li>- 6.2 Using Resources Wisely (p.158)</li><li>- 6.4 Meeting Ecological Challenges (p.173)</li><li>- Preparing for the Living Environment Exam (p.183)</li></ul>	<p><b>Key Idea 7: Human decisions and activities have had a profound impact on the physical and living environment.</b></p> <p><b>Key Idea 7, Clause 1:</b> Population growth has placed new strains on the environment - massive pollution of air and water, deforestation and extinction of species, global warming, and alteration of the ozone shield. Some individuals believe that there will be a technological fix for such problems. Others, concerned with the accelerating pace of change and the ecological concept of finite resources, are far less optimistic. What is certain, however, is that resolving these issues will require increasing global awareness, cooperation, and action.</p> <p><b>Key Idea 7, Clause 2:</b> Since the students of today will be the elected officials and informed public of tomorrow, the teacher should encourage a diversity of activities that will allow students to explore, explain, and apply conceptual understandings and skills necessary to be environmentally literate.</p>
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## Analysis

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**What Worked:** The event showed students that nearly any household item can remain valuable even after it becomes undesirable to a homeowner. Each partner at the event had a specific message about resource consumption and reuse, GreenChip in the realm of electronics, GrowNYC in the realm of textiles, and Queens Botanical in the realm of food waste. The number of electronic devices that were brought to be processed by GreenChip was encouraging. The club members were happy to find out that mercury, plastics, and valuable metals will not be simply discarded but instead used again. In a consumer-driven economy, this is good news!

**What Didn't Work:** Although many people arrived at the event at 1PM (its scheduled start time), only a few people filtered in after 4PM despite the event running until 5PM. The more informed people are about events such as the Maspeth Recycling Fair, the better off New York will be.

**Applicability to other Schools:** Calls to a local Council Member's office can be very fruitful as Council Members are often looking for ways to improve the communities over which they preside. We have enjoyed many positive experiences from our partnership with Elizabeth Crowley's office.

**Measuring Success:** The Maspeth Recycling Fair offered hope that with even with slight behavioral modifications, residents of New York City can vastly reduce their waste output. So many items that are regularly thrown away can be gleaned out of the waste stream and directed toward a new and less damaging destiny. Machines that break, textiles that tear, and food that rots can be given new life in the right hands.

# Overview

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The Green Club would like to thank the DSNY for awarding schools with Golden Apple Awards. The Maspeth High School Green Club is honored to be considered in the *Trashmasters Reduce ad Reuse Challenge*. The ten projects above were collaborative and often intensive attempts to make our school a positive force in Queens. By taking part in a variety of projects and events over the course of the year, the Club learned a great deal about how to improve **New York City's waste management future. We are focused on** being a leader in recycling, in reduction, and in reuse!